STATE OF LOUISIANA

I-10 CALCASIEU RIVER BRIDGE
PUBLIC-PRIVATE PARTNERSHIP PROJECT

CALCASIEU PARISH

STATE PROJECT NO. H.003931
FEDERAL AID PROJECT NO. 010121

FINAL EXECUTION VERSION

VOLUME 2

TECHNICAL PROVISIONS

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ARTICLE 1.

GENERAL

Section 1.1 General

The Existing Bridge is located between Lake Charles and Westlake, Louisiana, and opened to traffic in 1952. The bridge became part of the Interstate system in the 1960s with the construction of Interstate-10 (I-10) and was rehabilitated in 2011–2012, but additional improvements are needed for the bridge to effectively handle future projected traffic growth.

The limits of the Project extend generally from the I-10/I-210 interchange on the west side of the Existing Bridge to east of the Ryan Street exit ramp on the east side of the Existing Bridge. The Project will provide a New Bridge, located north of the Existing Bridge, along with new approaches and modifications to existing interchanges and roadways within the Design-Build (DB) Limits. Open road tolling equipment will be installed for the New Bridge, and all tolling services such as payment processing and customer services are included as part of the Project. The Project also includes operations and maintenance (O&M) for a 50-year term.

1.1.1 Project Goals

The Louisiana Department of Transportation and Development's (LA DOTD) goals for the Project are as follows:

(a) Maximize mobility and safety in the corridor, including the following:

  (i) Reduction of traffic congestion on mainline I-10;

  (ii) Mobility improvement along Sampson Street; and

  (iii) The safety of, and minimization of disruptions to, vehicular, rail, and maritime traffic during construction and operations, including the demolition of existing structures.

(b) Develop an overall financially feasible Project, optimizing the Public Funds Amount, with an acceptable and user-friendly tolling structure, that includes the following:

  (i) Delivery of all the LA DOTD's required scope of the Project;

  (ii) Employment of an automated cashless toll collection method or methods that facilitate interoperability with other toll facilities located in the State of Louisiana; and

  (iii) An excellent customer experience, responsive to all users that takes into account the socioeconomic make-up of the affected local communities.

(c) Optimize design and construction of the physical assets through delivery of high-quality, durable, and maintainable infrastructure that is resilient to withstand events such as, natural and man-made disasters, vehicle or vessel collision, or extreme heat due to fire, including the following:

(i) Life-cycle maintenance considerations;

(ii) A structure that is aesthetically appropriate given the community and immediate surroundings;

(iii) Solutions that are responsive to key Project challenges, including environmental needs within the corridor and the needs of adjacent industrial Stakeholders, railroads, and affected local communities; and

(iv) Delivery of the Project in a manner that supports ingenuity and industry.

(d) Develop a strong partnership between the LA DOTD and the Developer during all phases of the Project, including management of the toll facility;

(e) Prioritize transparent communication with the public during the design, construction, operations, and maintenance phases;

(f) Employ innovative approaches that increase the involvement of Disadvantaged Business Enterprises (DBE) in all aspects of the Project's delivery, including, but not limited to, material sourcing, finance, design, construction, operations, maintenance, and technology solutions; and

(g) Maximize opportunities to facilitate sustainable economic success, job growth, and career development in the Project vicinity, particularly in surrounding underserved communities.

1.1.2 Partnering and Collaboration

Partnering and collaboration are critical to the successful completion of the Work. The objective is to create an atmosphere of trust and honest dialogue between the LA DOTD and the Developer. Partnering and collaboration will not change the legal relationship of the LA DOTD and the Developer, nor will it relieve either the LA DOTD or the Developer from any of the terms of this Agreement.

The Developer's authorized representative shall prepare and submit a Partnering Plan and receive Approval no later than 120 days from NTP, direct a partnering process and a collaboration approach to the Work that includes:

(a) The LA DOTD and the Developer accommodating and facilitating daily interactions between the Parties;

(b) The LA DOTD and the Developer establishing an issues resolution ladder;

(c) The Developer accommodating and facilitating ongoing over-the-shoulder reviews with the LA DOTD and other Stakeholders;

(d) The LA DOTD and the Developer establishing protocols for Review of any formal submittals by the LA DOTD and third parties, including durations and frequency of Reviews; and

(e) The LA DOTD and the Developer establishing and attending an ongoing schedule of meetings such as management meetings, task force/discipline-specific meetings, design quality control meetings, constructability review meetings, traffic and revenue meetings, financing meetings, Governmental Entity and third party meetings, and other Project coordination meetings as mutually deemed necessary to manage and deliver the Work.

Formal partnering programs will be required throughout the duration of the Term. A formal partnering program shall commence no later than 120 days of the Notice to Proceed (NTP). Partnering meetings shall be held at regular intervals during the Work. Specific targeted partnering meetings shall be conducted at major transitions such as within 120 days following NTP; within 30 days following the Commencement of Construction; and within 30 days of the start of the Operating Period. The intent of specific, targeted meetings is to "restart" the partnering program at these major demarcation points and ensure that staff new to the Project becomes acclimated to the objectives of the Project and the use of the partnering process.

1.1.3 Partnering and Collaboration Objectives

The objectives of the partnering process and collaboration approach are to:

(a) Develop the Work in a manner to maximize value to the LA DOTD and the Developer and deliver on the Project goals;

(b) Enable the Parties to work collaboratively and facilitate the ability of the Developer in delivering the Work in a manner acceptable to the LA DOTD;

(c) Identify potential problem areas, issues, and different approaches early and work constructively and efficiently toward resolving them;

(d) Achieve and maintain effective and efficient performance and completion of Work in accordance with the requirements of the Contract Documents;

(e) Create mutual trust and respect for each party's respective roles and interests; and

(f) Identify risks and develop measures to eliminate, minimize, mitigate, or manage risks.

Section 1.2 Technical Provisions

1.2.1 Ambiguity and Clarifications

It is the Developer's responsibility to obtain clarification of any unresolved ambiguity within the Technical Provisions prior to proceeding with design and/or construction.

1.2.2 Project Standards

Standards are cited within these Technical Provisions. Standards constitute a further elaboration of the requirements and shall be followed. Standards listed are placed in descending order of precedence. Unless specified by year and date, items listed as Standards in these Technical Provisions shall be the latest edition(s) in effect on the Setting Date. Standards that state a *should* condition, shall be interpreted as a *shall* condition for the purposes of these Technical Provisions.

1.2.3 Project References

References are cited within these Technical Provisions. References constitute advisory or information material, provided for the Developer's benefit, that need not be followed but in some cases provide acceptable solutions already in use by the LA DOTD. Unless specified by year and date, items listed as references in these Technical Provisions shall be the latest edition(s) in effect on the Setting Date.

Section 1.3 Project-Wide Requirements

The Developer shall:

(a) Develop, design, and construct the Project (DB Work) in accordance with the Technical Provisions and Basic Project Configuration shown on the DB Limits drawings included in the Reference Documents;

(b) Invest equity and provide necessary debt financing for such improvements, in addition to the subsidy provided by the LA DOTD; and

(c) Operate and maintain the Project for a 50-year term (O&M Work).

The requirements of the Contract Documents grant the Developer the right to receive toll revenues from users of the Project during the Term, subject to any requirements that the Developer share certain toll revenues with the LA DOTD.

The Developer's Work also includes Right-of-Way (ROW) acquisition services, utility relocation coordination, and railroad coordination as set forth in the requirements of the Contract Documents. The LA DOTD will be responsible for O&M activities for the Existing Bridge during the construction of the New Bridge. The LA DOTD may issue one or more contracts to make repairs on the Existing Bridge or make modifications to accommodate Railroad Relocations to be performed by the railroads.

Once traffic is transferred to the New Bridge, the Developer shall be responsible for demolishing the Existing Bridge. The Developer shall also design and install a toll system to allow for collection of tolls from users of the Project.

This Article was prepared based on the Project description, including avoidance and mitigation measures, as developed for the National Environmental Policy Act (NEPA) Documents and as modeled/assessed in supporting studies. The LA DOTD must Approve any proposed changes to the Project description and/or avoidance/mitigation measures prior to implementation. Note that changes to the Project description may cause significant schedule impacts, depending on the nature and/or extent of the proposed changes.

Section 1.4 Design-Build Work

The timeframes for issuance of LNTP and NTP are stated in Section 8.02 of the Agreement.

1.4.1 DB Work Following LNTP

Upon receipt of LNTP, and in accordance with 23 CFR 636.109, the Developer is permitted to perform preliminary design activities, as defined in 23 CFR 636.103.

1.4.2 DB Work Following NTP

The Developer's obligations for DB Work are shown as part of the Basic Project Configuration in the DB Limits drawings and generally described in the following tables. The DB Work includes design and construction of the mainline I-10, the ramps and service roads, local roads, and traffic signals.

Also included in the scope are roadway improvements for the segment of the LA 378 (Sampson Street) from I-10 to Sulphur Avenue, as well as reconfiguration of several access ramps and the interchanges at Sampson Street.

On the west, the Project ties into the eastern end of LA DOTD State Project No. H.009620 on the mainline I-10. The mainline I-10 improvements include a full depth pavement replacement from the western end of the Project to the approach to the New Bridge as shown in Table 1.1. The eastern I-10 mainline DB Limits extend east of Ryan Street to tie the eastbound improvements into the existing three-lane I-10 section east of Bilbo Street.

This improvement will require the eastbound I-10 bridges crossing Ryan and Bilbo Streets to be widened to accommodate the third eastbound lane.

The DB Work includes modifications to existing ramps, service drives and local roadways as identified in Table 1-1 through Table 1-6 and shown on the DB Limits drawings. Bike and Pedestrian facilities are discussed in Article 19 of these Technical Provisions.

Two railroads, the Union Pacific Railroad (UPRR) and the Kansas City Southern Railroad, will be required to relocate their tracks (Railroad Relocations) in the area to the east of Sampson Street. The LA DOTD is coordinating with the railroads and will modify the Existing Bridge as needed to support the Railroad Relocations and acquire ROW for the relocations. The railroads will accomplish the Railroad Relocations. The Developer shall coordinate with the LA DOTD and the railroads as needed to advance the Railroad Relocations.

Table 1-1. DB Work - Mainline

ID	Location	Comment
ML-1	Mainline full section construction beginning Sta. 2296+00 to Sta. 2587+00	Matches existing State Project Number H.009620
ML-2	Mainline full section construction or rehabilitation and Eastbound (EB)	See Section 11.4.1 for requirements

	Mainline full section widening from Sta. 2587+00 to Sta.2594+40	
ML-3	Eastbound (EB) Mainline full section widening from Sta. 2594+40 to Sta. 2615+10	

Table 1-2. DB Work - Ramps

ID	Location	Comment
R-1	Westbound (WB) I-210 exit to WB I-10	Pavement design shall meet mainline requirements
R-1A	EB I-10 exit to EB I-210	Pavement design shall meet mainline requirements
R-1B	WB I-10 exit to EB I-210	Pavement design shall meet mainline requirements
R-1C	WB I-210 exit to EB I-10	Pavement design shall meet mainline requirements
R-2	PPG Drive entrance to WB I-10	Pavement design shall meet mainline requirements
R-3	EB I-10 exit to PPG Drive	Pavement design shall meet mainline requirements
R-4	EB US 90 entrance to EB I-10	Minimum design speed: 40 mph
R-4A	Ramp R-4 entrance to EB I-10	Pavement design shall meet mainline requirements
R-4B	Ramp R-4 exit to ramp R-5	Minimum design speed: 40 mph
R-5	EB I-10 exit to Sampson Street	Pavement design shall meet mainline requirements

ID	Location	Comment
R-5A	Ramp R-5 exit to Sampson Street	Pavement design shall meet mainline requirements, Minimum design speed: 40 mph
R-5B	Ramp R-5 exit to EB SR-1A	Minimum design speed: 40 mph
R-6	WB I-10 exit to WB US 90	Pavement design shall meet mainline requirements
R-7	WB I-10 (via ramp R-6) exit to PPG Drive	
R-7A	Ramp R-7 exit to PPG Drive	
R-7B	Ramp R-7 exit to SR-1	
R-8	WB SR-1A exit to Sampson Street	Minimum design speed: 15 mph
R-9	Merged ramps R-5A and R-8 to Sampson Street	Pavement design shall meet mainline requirements
R-10	Sampson Street entrance to WB I-10	Pavement design shall meet mainline requirements
R-11	Sampson Street entrance to EB I-10 (on bridge B-11)	
R-12	EB I-10 (on bridge B-12) exit to Miller Avenue	
R-13	WB I-10 (on bridge B-8) exit to Sampson Street	
R-14	Miller Avenue (on bridge B-9) entrance to Sampson Street	Minimum design speed: 20 mph from Miller Ave. intersection, 40 mph after alignment crosses over Miller Ave.
R-15	EB I-10 exit to EB N. Lakeshore Drive service road	Pavement design shall meet mainline requirements

ID	Location	Comment
R-16	WB SR-2 entrance to WB I-10	Pavement design shall meet mainline requirements
R-17	EB N. Lakeshore Drive service road entrance to EB I-10	Pavement design shall meet mainline requirements
R-19	Bilbo Street entrance to EB I-10	Pavement design shall meet mainline requirements

Table 1-3. DB Work - Bridges

ID	Location	Comment
B-1	WB I-210 over I-10	
B-2	I-10 over PPG Drive and UPRR	
B-3	WB I-10 ramp R-7 over EB US 90 and ramp R-4	
B-4	EB I-10 ramp R-5 to Sampson Street	
B-4A	I-10 over Bayou Verdine	See Section 13.3.1.19 for requirements.
B-5	Sampson Street over I-10	
B-6	EB I-10 ramp R-9 to Sampson Street	Ties into B-5
B-7	Sampson Street to WB I-10 ramp R-10	Ties into B-5
B-8	WB I-10 ramp R-13 to Sampson Street over UPRR Spur and bridge B-9	Ties into B-5 and B-10
B-9	Miller Avenue ramp R-14 to Sampson Street over UPRR Spur	Ties into B-8
B-10	I-10 over Calcasieu River	
B-10A	I-10 over relocated Pipe Rack	See Section 5.5 and Section 13.3.1.20 for additional structure specific requirements.
B-11	Sampson Street to EB I-10 ramp R-11 over UPRR Spur	Ties into B-5 and B-10
B-12	Sampson Street ramp R-12 to Miller Avenue over UPRR Spur and SR-1A	Ties into B-11
B-13	I-10 over Veterans Memorial Boulevard	
B-14	EB I-10 over Ryan Street	See Section 13.3.1.18 for additional structure specific requirements.
B-15	EB I-10 over Bilbo Street	See Section 13.3.1.18 for additional structure specific requirements.

Table 1-4. DB Work - Local Streets

ID	Location
LS-1	Sampson Street (LA 378)
LS-2	Mike Hooks Road

Table 1-5. DB Work - Service Roads

ID	Location
SR-1	EB Service Road from PPG Drive to ramp R-4
SR-1A	EB/WB Service Road from ramp R-8 to Miller Ave.
SR-2	WB N. Lakeshore Drive from Veterans Memorial Boulevard to Calcasieu River

Table 1-6. DB Work - Traffic Signals

ID	Location	Comment
TS-1	SR-1 at ramp R-4	New signal location
TS-2	Sulphur Ave. at Sampson Street	Existing signal to be replaced
TS-3	Sampson Street at I-10 WB	New signal location
TS-4	Sampson Street at I-10 EB	New signal location
TS-5	SR-1A at Miller Ave.	New signal location
TS-6	Ramp R-12 at Miller Ave.	New signal location

1.4.3 Standard for Determining Materiality of Change in Basic Project Configuration

The following are the standards for determining materiality of Basic Project Configuration changes:

(a) Any change to the Project that affects the Project ROW limits or the minimum vertical and/or horizontal clearances;

(b) Any change that makes more than nominal changes to bridges, retaining walls, and roadway limits;

(c) A change in Project termini, as proposed by the Developer, of the Project (either or both) by more than one hundred feet longitudinally;

(d) Any change to the Project that eliminates traffic movements included in the Basic Project Configuration shown on the DB Limits drawings, meaningfully and adversely affects traffic mobility, or causes all or a portion of the Project to not meet the Residual Life requirements defined in Exhibit 23-1; and/or

(e) Any change requiring a change in the Governmental Approvals secured in accordance with Section 8.05(a) of the Agreement.

Section 1.5 Operations & Maintenance Work

O&M Work includes the DB Period O&M Work within the DB Limits, and Operating Period O&M Work within the O&M Limits. The Developer shall commence DB Period O&M Work no later than the earlier of: (i) Commencement of Construction, or (ii) 180 days following NTP. After Partial Acceptance, the Developer shall be responsible for O&M and Renewal Work for the Elements within the O&M Limits shown on the O&M Limits drawings in the Reference Documents. For the DB and Operating Periods, the LA DOTD will retain responsibility for all NBIS Inspections, incident management, the Motorist Assistance Program (MAP), Winter Maintenance, and certain activities associated with severe weather (hurricanes) events within the DB Limits and O&M Limits. The LA DOTD will also retain O&M activities on the Existing Bridge during the DB Period until all traffic is transferred off the Existing Bridge.

ARTICLE 2.

PROJECT MANAGEMENT

Section 2.1 General

The purpose of this Article 2 is to cover the Elements of project management, and it includes Management Plans and administrative processes required by the Developer. The Developer shall maintain a full and complete copy of all Contract Documents at the Project Office in accordance with Section 2.3.8.

Section 2.2 Project Management Plan

The Developer's project management effort shall be defined by and follow the Project Management Plan (PMP), which is a collection of several Management Plans called Sub-Plans. Each Sub-Plan is part of the PMP but is a stand-alone Plan describing the management of various Elements of the Project. The LA DOTD has approval rights over the PMP and each Sub-Plan, unless expressly stated otherwise in the Contract Documents. The PMP is an umbrella document that describes the Developer's managerial approach, strategy, and quality procedures to design, build, operate, and maintain the Project; comply with the Handback Requirements at the end of the Term; and achieve all requirements of the Contract Documents.

The Developer shall develop and submit the PMP for Approval in accordance with this Article 2 of the Technical Provisions and Section 10.05(c) of the Agreement. The PMP shall contain all Sub-Plans as described herein and generally satisfy all requirements of the Federal Highway Administration (FHWA), the Contract Documents, and Good Industry Practice. Thereafter, the Developer shall implement, manage, and operate and, as required, update the PMP and its Sub-Plans as necessary to comply with the requirements of the Contract Documents.

The chapters of the PMP shall include those Sub-Plans listed in Table 2-1.

Table 2-1. PMP Sub-Plan

PMP Sub-Plan	Article	Sub-Plan
1	1.1.2	Partnering Plan
2	2.3	Project Administration Plan
3	2.4	Design Management Plan
4	2.5	Construction Management Plan
5	2.6	Maintenance Management Plan (MMP) (a) Design-Build (DB Period) Operations and Maintenance (O&M) Plan (b) Other MMP Sub-Plans (See Article 22)
6	2.7	Occupational and Public Safety Plan (Safety Plan)
7	2.8	Transportation Management Plan (TMP)
8	2.9	Public Information and Communications Plan (PICP)
9	2.10	Environmental Compliance and Mitigation Plan (ECMP)
10	2.11	Quality Management Plan (QMP)
11	2.12	Disadvantaged Business Enterprise Outreach and Participation Plan (DBE Plan)
12	2.13	Handback Work Plan
13	2.14	Workforce Development Plan

2.2.1 Project Management Plan Sub-Plans Required Prior to Commencement of DB Period O&M Work

The Developer shall submit the following Sub-Plans of the PMP and receive Approval prior to the commencement of DB Period O&M Work. See Section 1.5.

(a) The DB Period O&M Plan, which is a component of the MMP and includes the final DB Limits; and

(b) Safety Plan.

2.2.2 Project Management Plan Sub-Plans Required within 120 Days of NTP and Prior to any Design Submittals

The Developer shall submit the following Sub-Plans of the PMP and receive Approval no later than 120 days from NTP and prior to any design submittals to LA DOTD.

(a) Partnering Plan

(b) Project Administration Plan;

(c) Design Management Plan;

(d) The Design Quality Management Plan (DQMP), which is a component of the QMP;

(e) The DBE Plan; and

(f) The Workforce Development Plan.

2.2.3 Project Management Plan Sub-Plan Required as a Condition of Commencement of Construction

As a condition of Commencement of Construction and in accordance with Section 8.07 of the Agreement, the Developer shall submit the following Sub-Plans of the PMP and receive Approval:

(a) Construction Management Plan;

(b) TMP;

(c) PICP;

(d) ECMP; and

(e) QMP.

2.2.4 Project Management Plan Sub-Plans Required as a Condition of Partial Acceptance

As a condition of Partial Acceptance and in accordance with Section 8.08 of the Agreement, the Developer shall submit the following Sub-Plans of the PMP and receive Approval:

(a) MMP; and

(b) Handback Work Plan.

2.2.5 Project Management Plan Updates

The Developer shall propose updates to the PMP and, as applicable, affected Sub-Plans in the event of the following:

(a) The occurrence of any changes to Key Personnel, the QMP, Safety Plan, Partial Acceptance Date, Project administration policies and procedures;

(b) Events or occurrences that require PMP updates pursuant to the requirements of the Contract Documents;

(c) The occurrence of other changes necessitating revision to the PMP; or

(d) As otherwise directed by the LA DOTD.

The Developer shall provide the revised PMP for Approval no later than 30 days after the occurrence of the change or direction requiring the need for the revisions to the PMP.

The LA DOTD shall audit and monitor the activities described in the PMP to assess the Developer's performance. All commitments and requirements contained in the PMP are to be verifiable.

Section 2.3 Project Administration Plan

As part of the PMP, the Developer shall develop and submit the Project Administration Plan for Approval in accordance with the requirements of the Contract Documents. The Developer shall include in the Project Administration Plan, at a minimum, the following components specified in Table 2-2.

Table 2-2. Project Administration Plan Components

Article	Components
2.3.1	Project Meetings
2.3.2	Schedule Management
2.3.3	Document Management Systems
2.3.4	Performance Reporting
2.3.5–2.3.7	Key Personnel and Staffing
2.3.8	Project Office

2.3.1 Project Meetings

The purpose of Section 2.3.1 is to describe the Project meeting process and meetings required during the DB Period. See Article 22 for Project meeting requirements during the Operating Period.

2.3.1.1 General Requirements

(a) Purpose

The Developer shall hold Project meetings to enable orderly review with the LA DOTD during progression of the Work, and to provide for systematic discussion of items and issues.

(b) Decision authority

The Developer shall ensure the Developer's personnel who attend and participate in Project meetings have all required authority to commit the Developer to decisions agreed upon at the Project meetings.

(c) General procedures

To the maximum extent practicable, the Developer shall hold Project meetings at the Project Office.

The Developer shall manage meeting calendars, notifications, and invitations electronically on a real-time basis.

The Developer shall provide agendas and meeting materials to meeting participants at least three days in advance of the meeting, lead and facilitate meetings, and distribute meeting minutes to all attendees for review and comment within three days of the meeting conclusion.

The meetings described in Section 2.3.1do not represent all meetings necessary or required by the Contract Documents. The LA DOTD may, with reasonable notice, require additional Project meetings. Any such additional Project meetings shall not be considered a LA DOTD Change.

(d) Meeting minute requirements

The Developer shall provide meeting minutes, in an electronic format acceptable to the LA DOTD for all meeting attendees for all meetings that the Developer attends. The Developer shall include the meeting title, date of the meeting, purpose of the meeting, list of attendees (name, company, e-mail address, and telephone), outline or overview of topics discussed, decisions made, and action items resulting from the meeting. Action items include the task, person responsible for completing the task, and the completion date or timeframe in which the task is to be completed.

2.3.1.2 Project Kickoff Meeting

The Developer shall hold the Project Kickoff Meeting no later than 14 days following NTP.

At a minimum, the Key Personnel shall attend the meeting. The Developer shall address, at a minimum, the following at the Project Kickoff Meeting:

(a) PMP, including Key Personnel and organization chart;

(b) Project Schedule including status of Environmental Approvals;

(c) Approach to the DB Work and O&M Work;

(d) Approach to third party and Utility Owner coordination, approvals, and integration;

(e) Approach to tolling operations;

(f) Approach to safety;

(g) Approach to traffic management;

(h) Approach to managing Project quality;

(i) Project ROW availability and acquisition process;

(j) Submittal procedures and document control / records management;

(k) Workforce Development, Small Business Enterprise and DBE business participation plans;

(l) Insurance certificates and other commercial instruments required to commence Work; and

(m) Other topics as deemed necessary by the Developer or the LA DOTD.

2.3.1.3 Design Workshop

No later than 60 days after NTP, the Developer shall arrange a Design Workshop to familiarize the Designer and the LA DOTD, FHWA (and other Stakeholders if invited by the LA DOTD) review personnel with the design concepts, issues, status, and review procedures. At a minimum, the design related Key Personnel shall attend.

The Developer shall develop the agenda for the workshop and how it will be organized (i.e., by Design Unit and engineering discipline) and provide this information for Review and Comment. The intent of the workshop is to make the Design Reviews more effective and efficient for all parties. The design workshop may be held virtually using electronic video-conferencing methods.

All agreements and understandings reached during the design workshop shall be documented in writing and signed off by the Developer's Project Manager (PM) and the LA DOTD Project Manager.

The Developer shall address, at a minimum, the following at the design workshop meeting:

(a) Design Management Plan and organization chart;

(b) Developer's design Work locations and logistics;

(c) Developer's Submittals list/schedule of reviews;

(d) Developer's design Quality Management Plan;

(e) Developer's plan for obtaining and complying with third party and Utility Owner approvals and permits; and

(f) Other topics as deemed necessary by the Developer or the LA DOTD.

2.3.1.4 Design Concept Meetings

The Developer shall conduct design concept meetings with the LA DOTD to confirm the scope for the various parts of the Project. These meetings are in addition to or coincidental with meetings discussed elsewhere in the Contract Documents; however, the meetings identified may not be the only meetings required for the Project.

The LA DOTD may require specific conceptual meetings for the following:

(a) Surveying;

(b) Foundation design;

(c) Structures design, including bridges, retaining walls, and noise walls;

(d) Railroad coordination documents;

(e) Roadway design;

(f) Pavement design;

(g) Drainage design;

(h) Permanent signing design;

(i) Permanent pavement marking design;

(j) Intelligent Transportation System (ITS) design;

(k) Roadway lighting;

(l) Traffic signal design; and

(m) Maintenance of traffic (MOT) design.

2.3.1.5 Construction Kickoff Meeting

The Developer shall hold a Construction Kickoff Meeting a minimum of 30 days before Field Investigation Work and 60 days before beginning Construction Work. At a minimum, the construction-related Key Personnel shall attend. The Developer shall address, at a minimum, the following at the Construction Kickoff Meeting:

(a) Construction and Field Investigation Work;

(b) Construction Management Plan and organization chart;

(c) Developer's Project Office and logistics;

(d) Developer's Project Schedule, staged construction plan, and staging areas;

(e) Developer's Construction Work QA/QC;

(f) Developer's plan for MOT;

(g) Developer's Safety Plan;

(h) Developer's ECMP and permit compliance plans; and

(i) Process for As-Built Plan storage and retrieval.

2.3.1.6 Quality Kickoff Meeting

The Developer shall hold a Quality Kickoff Meeting within 30 days following the Project Kickoff Meeting. The Developer shall discuss all aspects of the Project QMP, with a focus on implementation of required processes. Additionally, the Developer shall discuss identifying and resolving non-conformances to Plans and the requirements of the Contract Documents. At a minimum, the quality-related Key Personnel and the leads for design, construction, and O&M shall attend.

2.3.1.7 Occupational and Public Safety Kickoff Meeting

The Developer shall hold a Safety Kickoff Meeting within 45 days following the Project Kickoff Meeting and prior to commencing any Construction Work or field Design Work.

The Developer shall include discussion of all aspects of the Developer's Safety Plan with a focus on implementation of the required processes. See Section 2.7 for detailed requirements of the Safety Plan.

2.3.1.8 Environmental Kickoff Meeting

The Developer shall hold an Environmental Kickoff Meeting within 15 days following the Project Kickoff Meeting. The Developer shall include discussion of all aspects of the Developer's ECMP and approach to obtaining and complying with Governmental Approvals required for the DB Work. The Developer shall identify the Governmental Approvals in the Project Schedule and the process the Developer will follow to obtain the Governmental Approvals. Refer to Article 3 for further details on environmental requirements.

2.3.1.9 Monthly Progress Meetings

The Developer shall hold monthly progress meetings throughout the Term. During the DB Period, the Developer shall include, at a minimum, the PM, Lead Project Scheduler, Design Manager (DM), Construction Manager, Construction Quality Control Manager (CQCM), Safety Manager, Environmental Compliance Manager (ECM), Lead Bridge Engineer, and representatives from the LA DOTD. The Developer shall include, as a minimum and as appropriate, the following as discussion items:

(a) Project Schedule, including progress for the past 30 days and a 30-day look ahead;

(b) Quality update and issues, including Non-Conformance Report (NCR) logs;

(c) Safety and security updates and issues;

(d) Environmental/permitting updates and issues;

(e) Utilities and railroads updates and issues;

(f) ROW availability updates and issues;

(g) Submittal and review process updates and issues;

(h) Current DB Percentage and any deviations from the Anticipated Milestone Payment dates;

(i) Proposed deviations and potential Project configuration changes and other scope, schedule, and budget impacts encountered along with mitigation measures and/or corrective actions taken; and

(j) MOT update and issues.

See Article 22 for progress meetings during the Operating Period.

2.3.1.10 Weekly Progress Meetings

The Developer shall hold weekly progress meetings throughout the Term. During the DB Period, the Developer shall include, at a minimum, the PM, Deputy Project Manager (DPM), Design Manager (DM), Lead Bridge Engineer, ROW Acquisition Manager, ECM, other Key Personnel as appropriate, and the LA DOTD. The Developer shall include, at a minimum and as appropriate, the following as discussion items:

(a) Confirmation of meeting minutes and action items from the previous weekly progress meeting;

(b) Project Schedule, including progress for the past 14 days and a 14-day look ahead;

(c) Design issues; including NCR logs;

(d) Environmental/permitting update and issues;

(e) ROW availability updates and issues;

(f) Submittal and review process updates and issues;

(g) MOT update and issues;

(h) Issues preventing any planned progress of the ongoing Work; and

(i) Additional topics to adequately cover critical Project items and current status updates of the Work.

See Article 22 for progress meetings during the Operating Period.

2.3.1.11 Special Meetings

The Developer shall hold special meetings as necessary as the Project progresses. These could be meetings relating to issues with Governmental Approvals, third-party conflicts and disputes, risk management issues and concerns, Design Reviews, environmental compliance status, and MOT, among others. The Developer shall schedule special meetings as issues and concerns arise during the design and construction of the Project. The Developer shall provide a narrative of the issue or concern with possible solutions to mitigate schedule impacts with the meeting invitation.

2.3.2 Schedule Management

This section describes the schedule requirements for the Project.

The purpose of the Project Schedule is to ensure that adequate planning, scheduling, and resource allocations occur to provide a reasonable and executable baseline Work plan.

The Project Schedule evolves as the Project progresses. Schedules are further described in this section and include:

(a) Preliminary Project Baseline Schedule (Preliminary PBS);

(b) Project Baseline Schedule (PBS);

(c) Project Schedule;

(d) Project Schedule monthly updates;

(e) Revised Project Schedule;

(f) Project Recovery Schedule;

(g) Final Project Schedule; and

(h) Six-week look ahead schedules.

The Developer shall use the Project Schedule for identifying, coordinating, and monitoring the Work to be performed and evaluating changes. Also, the Developer shall use the Project Schedule to determine work-arounds and "what if" ad hoc requests for areas of concern, cross-contract interfaces, and schedule risk mitigation measures.

The Developer shall include in Project Schedules all required LA DOTD, third party, and Utility Owner activities and/or milestones.

The Developer shall archive all Monthly Progress Report schedules, all previously submitted Project Schedules including information indicating whether such Project Schedule was Approved and maintain an as-built Schedule.

The Project Schedule shall be a computerized critical path method (CPM) Schedule using Oracle Primavera P6 software as described herein.

The description and details of the different names/types of the Project Schedule are described below:

2.3.2.1 Preliminary Project Baseline Schedules

The Preliminary PBS shall be developed and submitted in accordance with Section 8.06 of the Agreement.

2.3.2.2 Project Baseline Schedule

The Developer shall further develop the Preliminary PBS detailing all Project activities through Final Acceptance and submit for Approval of the PBS. The PBS shall be submitted no later than 180 days after NTP.

The Developer shall ensure the PBS is in CPM schedule format and is as described in this section. The LA DOTD shall Approve the PBS in accordance with Article 24.

(a) PBS and Approval Requirements.

(i) If the PBS's disposition is "revise and resubmit," the Developer shall make the necessary revisions and resubmit the new PBS within 10 days. The LA DOTD will only reject a PBS that is not in compliance with the requirements of the Contract Documents.

(ii) For a PBS that is "rejected," the LA DOTD will document all portions of the schedule that are not in compliance with the requirements of the Contract Documents. The LA DOTD will conduct a mandatory meeting with the Developer and the Developer's Project Scheduler within 10 days of the LA DOTD's documented notice. The purpose of this meeting is to resolve all issues with the PBS. At this meeting, the Developer shall provide clarification and all requested information necessary to Approve the PBS.

(b) The PBS shall be Approved prior to the start of Construction Work. Under no circumstances is Construction Work to commence without an approved PBS.

(c) PBS Submittal Requirements.

(i) Electronic files;

(ii) The Developer shall provide a narrative that includes the following:

(A) An explanation of the overall plan to complete the DB Work, including where the Work begins, and how the DB Work and crews progress through the Project.

(B) Statements comparing the scheduled completion date or duration to the planned Final Acceptance date, all intermediate completion dates, and all closure periods.

(C) An explanation of the planned schedule for completing the DB Work, including the planned number of workdays per week, planned number of shifts per day, whether night shifts are planned, the number of hours planned per shift, holidays planned to be observed, extent of DB Work planned for the winter months, and how the schedule calendar accommodates the required number of adverse weather days for each month. If multiple crews are planned, the above information is provided for each crew.

(D) A general description of the labor resources to be applied to the DB Work.

(E) A description of any unresolved actual or anticipated problems or delays, including identification of the type of delay, the cause of the delay, responsibility for the delay, identification of all delayed critical activities, the effect of the delay on other activities and Project milestones, and identification of actions required to mitigate the delay.

(F) A detailed description of the critical path.

(G) An explanation of the use of any constraints, including the reason and purpose for each constraint.

(H) A statement describing the status of any required permits, Utility coordination, or other third party interfaces.

(I) A statement describing the reason for the use of each lag.

(J) A description of assumptions built into the PBS (e.g., productivity rates, contingency); and

(K) An explanation of how the Anticipated Milestone Payment Dates were determined in relation to the overall plan to complete the DB Work.

2.3.2.3 Project Schedule

Upon Approval of the PBS, the PBS becomes the Project Schedule. The Project Schedule shall comply with all schedule requirements and is broken down into Project packages and deliverables of reasonable duration, and for which progress can readily be measured,

reported, and verified. The Project Schedule details the Work from LNTP through Final Acceptance.

2.3.2.4 Monthly Project Schedule Updates

At a minimum, the Developer shall submit a monthly Project Schedule Update to the LA DOTD on or before the 10th day of the month. This update has a data date reflecting the last day of the preceding month. The LA DOTD can request an update at any time if circumstances become known that make the current approved Project Schedule an ineffective tool to accurately track progress. Adjustments to the update reporting period, data date, and submission date may occur if Approved. The LA DOTD shall Approve or reject the schedule update.

The Developer shall identify the actual start and finish dates for all completed activities and the actual start date and remaining duration for all activities. The Developer shall correct out-of-sequence progress listings generated by the Oracle scheduling/leveling report on the critical path. Activities that are no longer needed are moved to a Work Breakdown Structure (WBS) created solely for these activities. The activities are not deleted from the Project Schedule. The Monthly Project Schedule Update Submittal shall include:

(a) Electronic files;

(b) One electronic copy of the six-week look ahead schedule in pdf format.

(c) If requested by the LA DOTD, a copy of a report (generated by the Primavera Software application) in pdf format providing a comparison between this updated Schedule and the previous monthly Update Schedule.

In the event the update shows negative float, the Developer shall modify the Project Schedule Update to eliminate the negative float prior to submitting the update. If this requires significant changes to the Project Schedule Update, it may be necessary to submit a Revised Project Schedule for Approval. If the negative float cannot be eliminated, the Developer shall contact the LA DOTD to discuss the need for a recovery plan and a Revised Project Schedule.

The monthly Project Schedule Update shall include a narrative that addresses the following:

(d) A statement comparing the anticipated Progress Milestones, Partial Acceptance Date and Final Acceptance Date with the respective Final Acceptance Deadlines and any change in the scheduled completion date from the previous monthly Project Schedule Update Submittal;

(e) An explanation if the scheduled completion dates are projected to occur after the planned Final Acceptance date;

(f) An explanation if Commencement of Construction or the Partial Acceptance Date are projected to occur after the dates or projected to require a longer duration than described in the Contract Documents;

(g) A list of activities that have been added or removed from the monthly Project Schedule Update since the previous monthly Project Schedule Update Submittal and an explanation for the addition or removal;

(h) A list of all changes in activity relationships, predecessors, or successors since the previous monthly Project Schedule Update Submittal and an explanation for each change;

(i) A list of activities with original durations that have been changed since the previous monthly Project Schedule Update Submittal along with an explanation regarding how the change will be accomplished;

(j) A description of the Work performed since the previous monthly Project Schedule Update Submittal;

(k) A description of and explanation for any changes between the Work performed since the previous monthly Project Schedule Update Submittal and the Work planned at the time that Submittal was made;

(l) A detailed description of any schedule-related unresolved problems, actual or anticipated;

(m) A statement that identifies any unresolved actual and anticipated delays. The statement should identify the delayed activity and other impacted activities, the party apparently responsible for the delay, the type of delay, the cause of the delay, the effect of the delay on other activities, and Partial Acceptance Deadline and Final Acceptance Deadline, and identification of actions required to mitigate the delay;

(n) A detailed description of the critical path that includes discussion about activities that may become critical;

(o) A statement addressing any deviations from the Anticipated Milestone Payment Dates and any change from the previous Monthly Project Schedule Update Submittal;

(p) A list of activities that have become critical since the previous monthly Project Schedule Update Submittal; and

(q) A list of any changes to resources including but not limited to crew sizes, work shifts, and equipment.

2.3.2.5 Revised Project Schedule

A Revised Project Schedule is a schedule that is needed to replace the existing Project Schedule because the existing Project Schedule no longer depicts the actual schedule of Work.

The Developer shall submit a draft Revised Project Schedule should one of the following occur:

(a) A scope change initiated by the LA DOTD including a Request for Change Proposal that affects either time or scope;

(b) A scope change that adds a day or more in duration to an existing activity, create new activities, or have unique activity IDs;

(c) A scope change that reduces the duration of an existing activity by a day or more require the creation of a new activity to supersede the existing activity with the new duration based on the scope change. The existing activity shall be zeroed out and treated as a deleted activity per the monthly Project Schedule Update requirements in this section;

(d) The Developer requests to substantially alter the sequence of Work or the durations; and

(e) The LA DOTD discovers significant discrepancies between the monthly Updated Project Schedule and the actual documented progress of the Work, and/or the monthly Updated Project Schedule is showing enough negative float to warrant a Project Recovery Schedule.

If one of the conditions described in the section above is met and a Revised Project Schedule is needed, the Developer shall follow the process described below to prepare a draft Revised Project Schedule:

(f) Create a PBS by determining Project progress prior to circumstance(s) necessitating the Revised Project Schedule. The previous approved monthly Project Schedule Update, updated to the date of the circumstance, is used to display the prior progress of the Project. If the Revised Project Schedule is needed because the LA DOTD issued a Change Order with a change in the DB scope, then the PBS shall reflect Project progress up to the date of the Change Order;

(g) Develop a fragnet (in Primavera) if it is anticipated that the Revised Project Schedule impacts the Partial Acceptance Deadline or Final Acceptance Deadline. If these deadlines are not impacted, the Revised Project Schedule can be submitted for comparison with the PBS;

(h) The fragnet identifies the predecessors to the new activities and demonstrates the impacts on successor activities;

(i) Insert the fragnet into the PBS, run the schedule calculations, and determine the finish date. This new schedule quantifies the impacts that necessitated a fragnet to be run;

(j) Compare the impacted Schedule finish date with the unimpacted Schedule finish date to determine the duration of any warranted time extension; and

(k) Submit the impact analysis to the LA DOTD along with a narrative.

If the draft Revised Project Schedule with the extension of time is approved, the impacted Project Schedule is referred to as the Revised Project Schedule.

2.3.2.6 Revised Project Schedule Submittal Requirements

The following is required for a draft Revised Project Schedule Submittal:

(a) Electronic files as described in Section 2.3.2.10;

(b) One electronic copy of the six-week look ahead schedule in pdf format;

(c) If requested by the LA DOTD a copy of a report (generated by the Primavera Software application) in pdf format providing a comparison between this Revised Project Schedule and the previous monthly Project Schedule Update;

(d) The identification of updated Anticipated Milestone Payment Dates if anticipated to be different from those originally included in the Project Schedule; and

(e) A narrative of the Revised Project Schedule that includes the following:

(i) An explanation of the differences between the revised plan and the baseline plan to complete the DB Work, including where the DB Work begins and how the DB Work and crews are progressing through the Project. Additionally, an explanation that includes the planned number of workdays per week, planned number of shifts per day, whether night shifts are planned, the number of hours planned per shift, holidays planned to be observed, extent of Construction Work planned for the winter months, and how the schedule calendar accommodates the required number of adverse weather days for each month. If the Developer intends to use multiple crews, then the Developer shall provide the above information for each crew;

(ii) Statements comparing the Revised Schedule completion date or duration to the contract completion date, all intermediate completion dates, and all closure periods to the original PBS;

(iii) A general description of the labor resources to be applied to the Project;

(iv) Description of the Work to be completed during each construction season and each winter;

(v) A description of any unresolved actual or anticipated problems or delays, including identification of the type of delay, the cause of the delay, responsibility for the delay, identification of all delayed critical activities, the effect of the delay on other activities and Project milestones, and identification of actions required to mitigate the delay;

(vi) A detailed description of the critical path of the Revised Project Schedule;

(vii) An explanation of the use of any constraints, including the reason and purpose for each constraint;

(viii) A statement describing the status of any required permits, Utility coordination, or other third party interfaces;

(ix) A statement describing the reason for the use of each lag in the Revised Schedule;

(x) A list of all proposed exceptions to the Project requirements included in the schedule that require Approval along with an explanation of why the exception is appropriate; and

(xi) A description of assumptions built into the Revised Project Schedule (e.g., productivity rates, contingency).

2.3.2.7 Project Recovery Schedule

Without limiting any other requirements of the Contract Documents, if, at any time during the DB Period, the LA DOTD, in its good faith discretion, is of the opinion that:

(a) The Project Schedule shows any schedule completion date having 30 days or more of negative Float (including delays for which the Developer may be entitled to a Partial and/or Final Acceptance Deadline adjustment under Section 12.02 of the Agreement);

(b) The actual progress of critical path activities of the DB Work have significantly fallen behind the Project Schedule; or

(c) The Developer will not achieve Partial Acceptance by the Partial Acceptance Deadline.

Then the Developer shall, within 20 days after receipt of notice from the LA DOTD, produce and deliver to the LA DOTD's Authorized Representative a report identifying the reasons for the delay and a Project Recovery Schedule showing that steps that are to be taken by the Developer to eliminate or reduce the delay to achieve Final Acceptance by the Final Acceptance Deadline. Project Recovery Schedule Submittals shall include a list of all activity changes and an accompanying narrative explaining the nature of the changes.

After Approval, the Project Recovery Schedule becomes the Project Schedule.

2.3.2.8 Final Project Schedule

As a condition of Final Acceptance, the Developer shall submit a Final Project Schedule for Approval with actual start and finish dates for the activities, within 30 days after completion of the DB Work. A final update meets all update requirements as defined in this Section 2.3.2and includes a documented certificate with this Submittal digitally signed by the PM and an officer of the company stating, "To my knowledge and belief, the enclosed Final Project Schedule reflects the actual start and finish dates of the actual DB Work activities for the Project contained herein."

2.3.2.9 Schedule Requirements

The Developer shall adhere to the following when creating a schedule:

(a) Use Oracle Primavera P6 for scheduling software;

(b) All calendars assigned to activities are Project level calendars not global or resource calendars;

(c) All activity codes are Project level and not global or enterprise project structure (EPS) level activity codes;

(d) Resources are assigned to activities;

(e) Project codes are not assigned; and

(f) Follow the "File Naming Convention" outlined in Table 2-3.

Table 2-3. Scheduled Filename Convention

Schedule Submittal Type	File Naming Convention
	1st Version
Preliminary PBS	CPM Project Name DD PPBS-1
1st Project Baseline Schedule	CPM Project Name DD 1PBS-1
Approved Project Baseline Schedule	CPM Project Name DD APBS
Project Schedule	CPM Project Name DD PS-1
Project Schedule Monthly Updates	CPM Project Name DD PSU-1
Revised Project Schedule	CPM Project Name DD 1RVPS-1
1st Project Recovery Schedule	CPM Project Name DD 1PRS-1
Final As-Built Schedule	CPM Project Name DD FABS-1
Replace DD with schedule's Data Date. Data Date (DD) is in the format of YYMMDD. If there is more than one version of the same file, use -2, -3, etc. for 2nd, 3rd, etc. versions.	

(g) Provide a Project Schedule that shows the various activities of Work in sufficient detail to demonstrate a reasonable and workable plan to complete the DB Work by the original Completion Deadline, order and interdependence of activities, the sequence for accomplishing the DB Work, and all activities in sufficient detail so that the engineer can readily identify the DB Work and measure the progress of each activity. The Project Schedule reflects the scope of DB Work, required phasing, MOT requirements, anticipated Partial Acceptance Date, anticipated Final Acceptance Date, interim completion dates, and other Project milestones established in the Contract Documents. Include activities for Submittals, working drawings, Submittal review time as specified in the contract, material procurement and fabrication, and the delivery of materials, plant, and equipment, and other similar activities;

(h) Ensure all DB Work is included in the Project Schedule, all Work sequences are logical, and that the Project Schedule indicates a coordinated plan. All Work activities, including but not limited to, the activities of Subcontractors, Suppliers, Vendors, the LA DOTD, permitting agencies, Utilities, and other Project-related activities, are included. The Project Schedule also includes the electronic submittal and Approval of plans and Working Drawings; and

(i) Failure by the Developer to include any Element of Work required by the Contract Documents does not excuse the Developer from completing all Work by the planned Final Acceptance date. The LA DOTD's review of the Project Schedule entails a review for compliance with the Technical Provisions and requirements of the

Contract Documents. Approval does not relieve the Developer of any responsibility for the accuracy or feasibility of the schedule.

2.3.2.10 Project Schedule Submittal Requirements

All Project Schedule Submittals shall contain the following information:

(a) Administrative identifier information (to be included on all Submittals in the header or footer area):

(i) State Project Number;

(ii) Project name;

(iii) Developer's name; and

(iv) File name.

(b) Electronic files:

(i) An electronic file of the schedule in Primavera .xer format that is completely compatible with and may be directly imported into the latest version of Primavera without any loss or modification of data or need for any conversion or other software.

Any electronic schedule file submitted by the Developer that is not completely compatible with LA DOTD's Primavera software will be rejected.

(ii) Electronic files of Gantt charts as described below, in pdf format that are compatible with and may be directly imported into the latest version of Adobe Acrobat without any loss or modification of the date or need any conversion or other software.

(c) Gantt Chart Names – Provide the following Gantt charts and name them accordingly:

(i) "All Activities Chart" – All activities grouped by WBS code and start date with the longest path indicated in red.

(ii) "Milestone Chart(s)" – Each Completion Milestone's final and interim critical path.

(iii) "Near-Critical Chart" – All near critical activities, grouped by WBS code and start date.

(iv) Any other Gantt chart requested by the LA DOTD.

(d) Gantt Chart Information – Provide the following information in each Gantt chart:

(i) Activity ID;

(ii) Activity description;

(iii) Activity durations, both original and remaining;

(iv) Start date;

(v) Finish date;

(vi) Float;

(vii) Progress bar;

(viii) Current schedule progress bar;

(ix) PBS progress bar, for Project Schedule Monthly Update, Recovery, and Revised Project Schedules;

(x) Title block;

(xi) Data date;

(xii) Run date;

(xiii) Gantt Chart name;

(xiv) Project ID;

(xv) Project name/description

(xvi) Developer's name; and

(xvii) Submission date.

(e) Scheduling/leveling report generated for the current schedule Submittal – This report is generated in .txt format and is named in accordance with the .xer file name convention.

(f) A narrative for all schedule Submittals – Include the specific requirements for narratives submitted with either a PBS, monthly Project Schedule Update or Revised Project Schedule.

(g) WBS – Divide the Work elements to be performed on the Project into manageable parts corresponding to key deliverables, phases, and/or milestones while avoiding omission of major items of Work. Organize the schedule using a WBS that correlates with the Project staging.

(h) Project Activities.

(i) Activity identification (ID) – Assign each activity a unique ID number. Activity ID length cannot exceed 15 characters. The activity ID is for the duration of the Project. After the Project Schedule has been approved, activities are not to be deleted from the Project Schedule.

(ii) If an activity needs to be removed, proceed as follows: zero out the remaining duration and status the activity as 100 percent complete. Do not delete predecessor or successor relationships.

(iii) The activity unique ID numbering follows the naming convention indicated in Table 2-4. The naming convention groupings indicated serve as the first character(s) of the unique ID number for each activity. The groupings indicated are the minimum to be used by the Developer; the Developer may use additional groupings, if the LA DOTD agrees to their use.

Table 2-4. Naming Convention for Activity IDs

ID Group	ID Group Description
M	Milestones: Start, Finish, or Interim
DE	Design & Engineering; Working Drawing Prep., Review, Approval
MT	Material Procurement, Fabrication, Delivery
UT	Utility Relocation, by Others
CN	Construction, by Developer
SC	Scope Changes, Proposed and/or Potential
WO	Work Orders, Scope Changes Authorized by the LA DOTD

(iv) Activity Descriptions – Each activity includes a narrative description consisting of a verb or Work function (e.g., form, pour, excavate), an object (e.g., slab, footing, underdrain), and a location (e.g., Structure X, Roadway X, Station X+XX). Describe the activities so that the Work is readily identifiable and the progress on each activity can be readily measured.

(v) Activity Codes – At a minimum, include Project activity codes for area, stage, and responsibility for each activity. Assign any operations that require special conditions such as a closure or night operations with a specific activity code for those operations. Ensure no global activity codes are incorporated into any progress schedule submission.

(vi) Activity Original Duration – Assign a planned duration in days for each activity. Do not exceed a duration of 20 days for any construction activity, without Approval. Do not represent the MOT, erosion control, and other similar items as single activities extending to the Completion Deadline. Break these Work items into component activities to meet the duration and staging requirements of this paragraph.

(vii) Activity Relationships

(A) All activities, except the first activity, have an activity driving its start date. All activities, except the final activity, have an activity driving its finish date.

(B) Use only finish-to-start, start-to-start or finish-to-finish relationships to link activities. Use of finish-to-finish relationships is permitted when both activities are already linked with a start-to-start relationship.

(C) Negative lags are not permitted – Positive lags are not permitted without Approval.

(viii) Project Milestones.

The following milestones are included in the Project Schedule, at a minimum:

(A) Start Project –Include as the first milestone in the Project Schedule, a milestone named “Start Project.”

(B) Anticipated Milestone Payment Dates – Include all five Milestone Payments (achievement of each of 25%, 50%, 75% DB Percentage, Partial Acceptance and Final Acceptance)

(C) End Project Milestone – Include as the last activity in the Project Schedule, a milestone named “End Project.” The date used for this milestone is considered the Final Acceptance Date. The DB Work has one ending.

(D) Start Stage Milestone – Include as the first activity for a Project stage, an activity named "Start Stage X," where "X" identifies the stage of DB Work. The Developer may include additional milestones if Approved, but at a minimum, the Start Stage Milestone includes all contractual Milestones.

(E) End Stage Milestone – Include as the last activity in a Project stage, an activity named “End Stage X,” where “X” identifies the stage of Work. The Developer may include additional milestones, but at a minimum, the End Stage Milestone includes all contractual Milestones.

(ix) Constraints – Minimize the use of constraints in the schedule. If constraints are used, use only "Finish on or Before" or "Start on or After" constraints. Other constraints such as, "As Late As Possible" (suppresses Free Float), "Mandatory Start," "Mandatory Finish," "Start On," "Finish On," "Start on or Before," and "Finish on or After" (suppress Total Float) interfere with the Project network calculations and are not to be used. Constraints are subject to Approval.

(x) Requirements for calendars are as follows:

(A) Ensure calendars are based on the requirements of the Contract Documents.

(B) Through the use of calendars, incorporate seasonal weather conditions into the schedule for the Construction Work (e.g., earthwork, concrete paving, structures, asphalt, drainage, etc.) that may be influenced by temperature or precipitation.

(C) Through the use of calendars, incorporate non-work periods such as holidays, weekends, or other non-business days as identified in the requirements of the Contract Documents.

(D) Activity calendars for non-field DB Work activities, including but not limited to design Submittals, reviews, procurement, fabrication, cure times, and Utility Relocations performed by others, are not to show any non-business days.

(E) Define the "work hour/day" in all calendars to match the Primavera Admin Preference "Hours per Time Period." For example, if the Hours per Time Period is defined as eight hours/day, the "work hour/day" for the calendar is defined as eight hours.

(F) Use days as the planning unit, not hours. For example, if a work activity takes 40 hours to complete, and the Developer is working 10-hour days, then the planned activity duration is four days, not 40 hours. The planned duration of the activity is five days if Developer works eight hours per day.

(xi) Resources.

(A) The schedule includes all resources required for each of the Project activities, including materials, labor, and equipment.

(B) Resource information includes, by categories: materials, type and quantity; labor, job hours planned for individual craft workers and labor classifications; and equipment, job hours, number of pieces, types and sizes.

(C) Accurately represent the planned labor and equipment hours necessary to achieve the estimated production rates.

(D) Use the Resource Code fields in the Oracle Primavera software to define and load the resource information in the Schedule.

(xii) Schedule Calculation Options.

(A) The schedule can only be calculated using retained logic.

(B) Show open ends as non-critical. Schedule durations are to be contiguous.

(C) Ensure total Float is calculated as finish Float.

(D) Ignore relationships to and from other projects.

(E) Ensure critical activities are defined using the "Longest Path" criteria.

(F) Ensure "Activity Percent Complete" is set to "physical."

(xiii) The Developer acknowledges that all Float is a jointly owned Project resource pursuant to Section 8.06 of the Agreement. Use of any Float-suppressing techniques is cause for rejection of a schedule Submittal.

(A) Use of Float suppression techniques, such as preferential sequencing (arranging critical path through activities more susceptible to Compensation Events and Delay Events), lag logic restraints, zero total or free Float constraints, extending activity times, or imposing constraint dates other than as required by the Contract Documents, is cause for rejection of the Project Schedule or its updates.

(B) Ownership of Float – Float available in the schedule at any time is subject to the provisions of Section 8.06 of the Agreement.

(C) Negative Float – Negative Float is not to be used as a basis for a claim of a Delay Event or Compensation Event. Schedule updates submitted with negative Float may be cause for rejection.

2.3.2.11 Approval of Schedule

The LA DOTD's Approval of or Review and Comment on any of the Developer's schedule Submittals does not waive any requirements of the Contract Documents and does not relieve the Developer of any obligation or responsibility for submitting complete and accurate information. By Review and Comment on or Approval (as applicable) of a schedule Submittal, the LA DOTD does not endorse or otherwise certify the validity or accuracy of any part of the schedules. The responsibility for validity and accuracy of all schedules is the sole responsibility of the Developer. See also Sections 10.05 and 10.06 of the Agreement.

2.3.3 Document Management

This section describes the requirements for the storage and retrieval of documents, including record retention.

The Developer shall establish and maintain a Document Control System (DCS) to store and record all correspondence, design inputs, drawings, progress reports, technical reports, and specifications, Submittals, calculations, test results, inspection reports, non-conformance reports, administrative documents and other documents generated pursuant to the Contract Documents. Identify all of the records that are to be maintained and kept throughout the Term and describe how they will be controlled by a unique document control number. Include the location of the records. Provide access to the DCS to the LA DOTD and its representatives upon request.

The Developer shall submit documents through a Document Control website established by the LA DOTD. Establish and maintain documented procedures to control and produce Released for Construction Documents (RFC) and Final Design Documents for all documents and data that relate to the requirements of this Project, including at a minimum: plans, schedule Submittals, specifications, PMP or Sub-Plans thereof, permits, master drawing lists, critical procedures and work instructions, quality system manuals, and data (e.g., computer databases, computer files).

2.3.3.1 Document Control

The Developer shall review for adequacy by authorized personnel all documents and data prior to issue. A master list or equivalent document control procedure identifying the current revision status of documents shall be established and readily available to preclude the use of invalid and/or obsolete documents.

The Document Control System shall ensure that pertinent issues of appropriate documents are available to the Developer, the LA DOTD, and third parties; and pertinent issues of appropriate documents are available to the Developer, the LA DOTD, and third parties. The Document Control System shall also ensure that invalid and/or obsolete documents are promptly removed from all points of issue or use, or otherwise assured against unintended use, but are retained for record purposes.

The Developer shall identify the process for the initiation, review, and approval of all document changes prior to issuance of those changes. Changes to documents and data shall be reviewed and commented on or, as applicable, Approved by the same LA DOTD representative who performed Review and Comment on or as applicable, Approval of the original document, unless specifically designated otherwise. If this is not possible, then the designated LA DOTD representative shall have adequate background and experience upon which to base the decision. The Developer shall provide the designated LA DOTD representative access to pertinent background information upon which to base its Review and Comment and, as applicable, approval.

2.3.4 Monthly Progress Reports

The Developer shall prepare a Monthly Progress Report during the DB Period and Operating Period to indicate planned versus accomplished performance as reported in the Project Schedule. See Article 22 for requirements during the Operating Period.

2.3.4.1 Progress Measurement

The Developer shall report on progress with tables, graphs, and performance indicators, as part of the Monthly Progress Report. The Developer shall propose the format of Monthly Progress Reports and submit this information for Approval no later than 45 days from NTP. Reports are to be submitted to the LA DOTD monthly and shall describe the planned versus actual accomplishments.

By the 10th day of each month, the Developer shall submit to the LA DOTD a report containing information on Developer's performance of the DB Work during the previous calendar month. The Monthly Progress Report contains:

(a) A description of the DB Work performed during the past month, a description of the DB Work planned for the next month, and a discussion of any critical issues/decisions affecting the DB Work;

(b) A description of any environmental issues that occurred within the Project site and their resolution;

(c) A description of any safety issues that occurred and their resolution;

(d) A calculation of the current DB Percentage including a detailed description of any changes to the Design-Build Price since the previous Monthly Progress Report Submittal;

(e) A copy of the most recent available Lenders' Technical Advisor Report; including an explanation of any material discrepancies between the reported progress on DB Work and the current DB Percentage;

(f) A description of incremental and cumulative progress made towards execution of the Workforce Development Plan and the achievement of SBE and DBE participation levels; and

(g) A listing of all non-conformances and corrective actions taken and the status of each whether self-reported or identified by the LA DOTD.

2.3.5 Key Personnel

The Developer shall provide Key Personnel that meet the requirements of these Technical Provisions, a summary of which is shown in Exhibit 2-5 and Exhibit 2-6. The Developer shall perform all engineering work by or under the supervision of the persons licensed to practice engineering or surveying (as applicable) in the state of Louisiana, and by personnel who are professionally qualified to perform the Work in accordance with the requirements of the Contract Documents, and who assume professional responsibility for the accuracy and completeness of the Design Documents and Construction Documents prepared or checked by them.

Unless otherwise Approved, the Key Personnel and their minimum qualifications for the Project include the following:

2.3.5.1 Principal-in-Charge

The Principal-in-Charge shall be the person who legally binds the Developer during the course of the Agreement and oversee the Developer team's performance of all aspects of the Agreement. The Principal-in-Charge is not required to be assigned to the Project full time but will have primary responsibility for resolving any issues that cannot be resolved with the PM during both the DB Period and Operating Period.

2.3.5.2 Developer's Project Manager

The PM shall be responsible for Developer's performance of all obligations and responsibilities set forth in the Contract Documents. The PM shall lead the Developer's efforts and be responsible for overall design, construction, operation, maintenance, tolling, and contract administration on behalf of the Developer. The PM shall have a minimum of 10 years recent experience managing projects similar to or larger than this Project's scope and complexity.

During the DB Period, the PM shall be assigned to the Project full time, on-site and available to be contacted 24 hours a day/7 days a week from NTP until Final Acceptance.

During the Operating Period, the PM shall be on-site for monthly meetings and on-site within 24 hours if needed, and available to be contacted 24 hours a day/7 days a week. During the Operating Period, the PM shall remain on the project a minimum of three years prior to replacement with an Approved PM.

2.3.5.3 Deputy Project Manager

The DPM will support the PM in the performance of all obligations and responsibilities set forth in the requirements of the Contract Documents. The DPM shall support the PM's efforts for overall design, construction, operation, maintenance, and contract administration on behalf of the Developer. The DPM shall have a minimum of 10 years recent experience managing projects similar to or larger than this Project's scope and complexity.

During the DB Period, the DPM shall be assigned to the Project full time, on-site, and available to be contacted 24 hours a day/7 days a week from NTP until Final Acceptance.

Either the PM or DPM shall be on-site during the DB Period to cover periods of vacation, illness etc. should the other not be available.

2.3.5.4 Design-Build Contractor's Project Manager

Reporting to the PM, the Design-Build Contractor's Project Manager (DBCPM) shall be the individual who is fully responsible for the execution of the DB Work. The DBCPM shall have at a minimum 15 years experience on at least two comparable sized projects similar to or larger than this Project's scope and complexity.

The DBCPM shall be responsible for performance and resourcing for overall design, construction, and contract administration, including safety and environmental compliance for the Project.

During the DB Period, the DBCPM shall be full time, on-site, and available to be contacted 24 hours a day/7 days a week from NTP until no less than two months after Final Acceptance of all DB Work, and related disputes and claims are resolved.

2.3.5.5 Construction Manager

Reporting to the DBCPM, the CM shall be the person responsible for ensuring that the Project is constructed in accordance with the Project requirements. The CM shall have a minimum of 10 years recent experience managing the construction of projects similar to or larger than this Project's scope and complexity.

During the DB Period, the CM shall be assigned to the Project full time, on-site, and available to be contacted 24 hours a day/7 days a week from Commencement of Construction until Final Acceptance and shall be available until all Design Work and Construction Work-related disputes and claims are resolved.

2.3.5.6 Operations and Maintenance Manager

The OMM shall be the person responsible for the overall operations and maintenance and Renewal Work on behalf of the Developer. The OMM shall have a minimum of 15 years recent experience with O&M on projects similar to or larger than this Project's scope and complexity.

The OMM during the DB Period and Operating Period may be separate individuals however the OMM for the Operating Period must be onboard 12 months prior to Partial Acceptance. Alternatively, if suitably qualified the OMM during the DB Period may transition to the OMM during the Operating Period.

Beginning at Partial Acceptance, the OMM shall be full time and available to be contacted 24 hours a day/7 days a week. The OMM shall remain on the Project for a minimum of three years prior to replacement with another Approved OMM. The OMM, if suitably qualified, may transition to the Developer PM during the Operating Period.

2.3.5.7 Toll Collection System Manager

The Toll Collection System Manager shall be the individual with primary responsibility for the design, construction, integration, and testing of the electronic toll collection system for the Project. A minimum of five years similar experience is required.

During the DB Period, the Toll Collection System Manager shall be on-site for weekly meetings during design activities, as needed for meetings from Commencement of Construction until Final Acceptance, and be available to be contacted 24 hours a day/7 days a week. During the Operating Period, the Toll Collection System Manager shall be on-site for monthly meetings and available to be contacted 24 hours a day/7 days a week.

2.3.5.8 Tolling Operations Manager

The Toll Operations Manager shall have primary responsibility for the day-to-day toll collection, including, but not limited to, back office transaction and violations processing, collections, and customer service on the Project. A minimum of five years similar experience is required.

During the DB Period, the Tolling Operations Manager shall available as needed during weekly meetings, to be contacted 24 hours a day/7 days a week. During the Operating Period, the Tolling Operations Manager shall be full time, on-site and available to be contacted 24 hours a day/7 days a week.

2.3.5.9 Design Manager

The DM shall be a design professional reporting to the DBCPM and shall be the person responsible for ensuring that the overall Project design is completed and that design criteria requirements are met. The DM shall have a minimum of 15 years recent experience, DB experience preferred, managing the design on projects similar to or larger than this Project's scope and complexity. The DM shall be a Professional Engineer licensed in the State of Louisiana and be an employee of the Lead Designer.

During the DB Period, the DM or a LA DOTD approved designee shall be full time, on-site whenever design activities are being performed (including design activities related to field design changes) and available to be contacted 24 hours a day/7 days a week.

2.3.5.10 Quality Manager

The Quality Manager (QM) shall be responsible for overall quality management and contract compliance, report to the PM, and bear no direct immediate profit and loss responsibility for the Project.

The QM shall be responsible for the overall quality of the DB Work and life-cycle quality during the construction phase of the DB Period, implementing quality planning and training, and managing the team's quality management processes. The QM shall be independent of the Developer's production team and shall have the authority to stop Work.

The QM shall have a bachelor's degree in engineering and/or construction or equivalent and shall have a minimum of 10 years quality management experience on large transportation infrastructure projects similar to or larger than this Project's scope and complexity, and shall have undertaken training in the use and application of quality programs including the application of ISO 9001.

During the DB Period, the QM shall be assigned full time, on-site, and available to be contacted 24 hours a day/7 days a week.

At the commencement of the Operating Period, the duties of the QM shall be assumed by the Maintenance Quality Manager (MQM); alternatively, the QM, if suitably qualified, may transition into the position of the MQM.

2.3.5.11 Design Quality Manager

The DQM shall work under direct supervision of the QM. The DQM shall be responsible for design quality assurance and independent of design production and associated activities for the Project. The Design Quality Manager (DQM) shall have a minimum of 10 years experience on projects similar to or larger than this Project's scope and complexity, and shall be a Professional Engineer licensed in the State of Louisiana.

During the DB Period, the DQM shall be on-site for weekly meetings, available on-site within 24 hours if needed and available to be contacted 24 hours a day/7 days a week.

2.3.5.12 Construction Quality Control Manager

The CQCM shall work under the direct supervision of the QM and have the authority to stop any and all Construction Work that does not meet the standards, specifications, or criteria established for the Project and be responsible for managing the QC functions.

The CQCM shall have a minimum of 10 years experience overseeing the construction quality (e.g., construction inspection and materials testing) on projects similar to or larger than this Project's scope and complexity.

During the DB Period, the CQCM shall be assigned full time, on-site, and available to be contacted 24 hours a day/7 days a week from Commencement of Construction until Final Acceptance.

2.3.5.13 Maintenance Quality Manager

The MQM shall be responsible for overall quality management and contract compliance for operations and maintenance. During the Operating Period, the MQM shall report to the PM and shall bear no direct immediate profit and loss responsibility for the Project.

During the DB Period, the MQM shall be responsible for quality management of the DB Period O&M Work. During the Operating Period, the MQM shall be responsible for the overall quality, implementing quality planning and training, and managing the team's quality management processes. The MQM shall be independent of the Developer's production team and shall have the authority to stop Work.

The MQM shall have a bachelor's degree in engineering and/or construction or equivalent and a minimum of 10 years quality management experience on projects similar to or larger than this Project's scope and complexity, and shall have undertaken training in the use and application of quality programs including the application of ISO 9001.

During the DB Period, the MQM shall be available on-site within six hours and available to be contacted 24 hours a day/7 days a week. During the Operating Period, the MQM shall be available on-site for monthly meetings, available within six hours and available to be contacted 24 hours a day/7 days a week.

The QM, if suitably qualified, may have the role of the MQM during the DB Period and may transition into the position of the MQM during the Operating Period. The MQM shall be onboard 12 months prior to Partial Acceptance.

2.3.5.14 Environmental Compliance Manager

The ECM shall be responsible for the implementation of all the environmental design and construction commitments and conditions of Environmental Approvals required for the Project.

The ECM shall have a minimum of 10 years experience, with demonstrated expertise with construction management, permitting compliance, and overall environmental compliance on large-scale, complex transportation projects with environmentally sensitive areas. Roles and responsibilities of the ECM shall include overseeing the ECP, reporting directly to the Design Build Contractor's Project Manager during the DB Period and Developer's Project Manager during the Operating Period, and being the primary liaison to the LA DOTD for environmental issues. The ECM shall also manage the environmental activities and monitor, document, and report environmental compliance for the Project. The ECM shall be responsible for reporting any violation or failure to comply with requirements together with planned corrective actions to the LA DOTD as soon as such violation or failure to comply is identified and to then regularly update the LA DOTD on the progress of corrective actions.

The ECM shall have the authority to stop or redirect Construction and/or O&M Work as needed to maintain environmental compliance.

During the DB Period, the ECM shall be assigned full time, on-site, and available to be contacted 24 hours a day/7 days a week from NTP to Final Acceptance. During the Operating Period, the ECM shall be available on-site for monthly meetings, on-site within six hours when necessary and available to be contacted 24 hours a day/7 days a week to ensure environmental compliance and/or as requested by the LA DOTD.

2.3.5.15 Hazardous Material Manager

The Hazardous Material Manager (HMM) shall report to the CM and have a minimum of 10 years experience with the management of hazardous materials (classifications, handling, transportation and disposal) preferably in the State of Louisiana. Also, completion of HAZWOPER 40-hour training and annual refreshers under 29 CFR 1910.120 are required along with a demonstrated working knowledge of Hazardous Material/Dangerous Goods transportation regulations (49 CFR, DOT), operations, and procedures.

During the DB Period, the HMM shall be full time, on-site, and available to be contacted 24 hours a day/7 days a week from Commencement of Construction until Final Acceptance.

2.3.5.16 Safety Manager

The Safety Manager (SM) shall be responsible for development, implementation and updating of the Safety Plan throughout the Term. The SM shall report to the PM and have a minimum of 15 years experience as an SM on at least two highway transportation projects with

similar to or larger than this Project's scope and complexity, and shall be a Certified Safety Professional.

During the DB Period, the SM shall be full time, on-site, and available to be contacted 24 hours a day/7 days a week and shall have authority to stop any and all Construction Work that does not comply with the Safety Plan, standards, specifications, or criteria established for the Project.

During the Operating Period, the SM shall be available for on-site monthly meetings, available on-site as necessary within six hours, and available to be contacted 24 hours a day/7 days a week.

2.3.5.17 Public Information Manager

The Public Information Manager (PIM) shall lead all public information tasks, including the development, implementation, and updating of the PICP throughout the DB Period. The PIM shall have experience as a public information coordinator on projects similar to or larger than this Project's scope and complexity.

During the DB Period, the PIM shall be available for on-site weekly meetings, available on-site as necessary within 24 hours, and available to be contacted 24 hours a day/7 days a week. During the Operating Period, the PIM shall be available for on-site monthly meetings, available on-site as necessary within 24 hours, and available to be contacted 24 hours a day/7 days a week.

2.3.5.18 Lead Bridge Design Engineer

The Lead Bridge Design Engineer is the person responsible for ensuring the New Bridge, and all other structures are designed in accordance with the Project requirements. The Lead Bridge Design Engineer shall have a minimum of 15 years recent experience and have been the engineer of record for, or in responsible charge of, at least two completed major river bridge structures similar to or larger than this Project in similar structure type, scope and complexity. The Lead Bridge Design Engineer shall be a Professional Engineer licensed in the State of Louisiana.

During the DB Period, the Lead Bridge Design Engineer or a LA DOTD approved designee shall be available for on-site weekly meetings, available on-site as necessary within 24 hours, and available to be contacted 24 hours a day/7 days a week.

2.3.5.19 Lead Project Scheduler

The Lead Project Scheduler must have a minimum of 10 years experience in scheduling similar to or larger than this Project's scope and complexity including pre-construction and construction activities, using Primavera Schedules. Experience must include establishment of key milestones, deliverables, and dependencies, along with durations for design, pre-construction, procurement, construction management, and Construction Work.

During the DB Period, the Lead Project Scheduler shall be available, either remote or on-site for weekly meetings and available to be contacted 24 hours a day/7 days a week.

2.3.5.20 Lead Roadway Engineer

The Lead Roadway Engineer shall be responsible for the roadway design. The Lead Roadway Engineer shall have a minimum of 10 years experience in interstate roadway design projects of similar to or larger than this Project's scope and complexity, and shall be a registered Professional Engineer licensed in the State of Louisiana.

During the DB Period, the Lead Roadway Engineer or a LA DOTD approved designee shall be available for all on-site weekly meetings, available on-site as necessary within 24 hours, and available to be contacted 24 hours a day/7 days a week.

2.3.5.21 Lead Traffic Engineer

The Lead Traffic Engineer shall be responsible for design related to traffic movement and operations and shall be responsible for the Transportation Management Plans. The Lead Traffic Engineer shall be a Professional Traffic Operations Engineer (PTOE) and a registered Professional Engineer licensed in the State of Louisiana with a minimum of 10 years recent experience in traffic engineering and traffic management on interstate highway projects of similar size and complexity.

During the DB Period, the Lead Traffic Engineer or a LA DOTD approved designee shall be available for on-site weekly meetings, available on-site as necessary within 24 hours, and available to be contacted 24 hours a day/7 days a week.

2.3.5.22 Lead Geotechnical Engineer

The Lead Geotechnical Engineer shall be responsible for ensuring that the geotechnical designs and any necessary geotechnical input for structural designs are completed in accordance with the requirements of the Contract Documents. The Lead Geotechnical Engineer shall have a minimum of 10 years experience on similar to or larger than this Project's scope and complexity, and shall be Professional Engineer licensed in the State of Louisiana.

During the DB Period, the Lead Geotechnical Engineer or a LA DOTD approved designee shall be available for all on-site weekly meetings, available on-site as necessary within 24 hours, and available to be contacted 24 hours a day/7 days a week.

2.3.5.23 Utility Coordinator

The Utility Coordinator shall have experience with LA DOTD procedures for accommodating and relocating utilities. The Utility Coordinator shall manage all utility coordination and utility design activities with the overall Project. The Utility Coordinator shall have a minimum of 10 years experience in the role of a utility coordinator on similar to or larger than this Project's scope and complexity.

During the DB Period, the Utility Coordinator shall be available for all on-site weekly meetings, available on-site as necessary within six hours, and available to be contacted 24 hours a day/7 days a week.

2.3.5.24 Demolition Manager

The Demolition Manager's primary responsibility shall be the performance of all Developer obligations with respect to demolition of the Existing Bridge. The Demolition Manager shall be responsible for coordinating, notifying, and scheduling demolition activities with the LA DOTD; US Coast Guard; US Army Corps of Engineers; and all other federal, state, and local agencies as required. The Demolition Manager shall have at least 10 years relevant experience in coordinating similar demolition projects.

The Demolition Manager shall be a Professional Engineer licensed in the State of Louisiana and be responsible for all demolition and removal plans required for the Existing Bridge.

The Demolitions Manager or a LA DOTD approved designee shall be available for all on-site weekly meetings, be available on-site as necessary within 24 hours, and available to be contacted 24 hours a day/7 days a week from 12 months prior to demolition of the Existing Bridge through Final Acceptance.

2.3.5.25 ROW Acquisition Manager

The Developer shall provide a ROW Acquisition Manager to oversee and manage all activities associated with any land acquisitions, including but not limited to appraisals, appraisal reviews, specialty valuation services, negotiations, agreements, relocation, and advisory services and recordations.

The ROW Acquisition Manager must have a minimum of five years demonstrated experience in highway ROW acquisitions and relocation assistance on federally funded projects.

During the DB Period, design activities only, the ROW Acquisition Manager or a LA DOTD approved designee shall be available for on-site weekly meetings and available to be contacted 24 hours a day/7 days a week.

2.3.6 Approval of Key Personnel

The LA DOTD's rights with respect to Key Personnel are described in Section 24.02 of the Agreement.

2.3.7 Directory of Key Personnel

The Developer shall prepare a directory of Approved Key Personnel and other personnel that includes the following information for each individual: name, Project title, Project

office address, Project office location, e-mail address, and telephone numbers (office, mobile). The Developer shall keep the directory current throughout the Term.

All above listed Key Personnel and other personnel positions shall be clearly identified in the organizational chart(s).

2.3.8 Developer's Project Office and Facilities

2.3.8.1 Developer's Project Office

The Developer shall establish a Project Office no later than 90 days after NTP. The Developer shall maintain a Project Office for the Term. The Developer may relocate the Project Office depending on the phase of the Work. The Project Office shall house the Developer's staff and provide space for conference rooms and visitor parking. The Project Office shall be within the Project Vicinity. If the project office is located within available ROW, the Developer shall restore the location to the original site condition at the expiration of the Term.

2.3.8.2 Developer's O&M Facilities

Any office or operations center constructed for the purpose of O&M Work within the ROW shall be demolished and landscaped in accordance with Article 14 at the expiration of the Term. If early Termination occurs, ownership of any property and associated elements utilized for the function of the Project (computers, workstations, facilities, etc.) purchased by the Developer outside the ROW for the purpose of O&M Work or tolling operations shall be transferred back to LA DOTD.

2.3.9 LA DOTD's Field Office

The Developer shall provide a Field Office, no later than 90 days after NTP for LA DOTD personnel with office facilities as indicated in Table 2-5. The Field Office shall be equipped with all necessary office, conference room, and kitchenette furniture, refrigerator, microwave oven, heating and air conditioning, and all necessary utilities including electricity, water, gas, sewer, telephones and telephone service, and internet service. The Field Office shall be handicapped accessible. The Developer shall furnish, maintain, and service the facilities with fuel, electrical power, sanitary services, access roads, and other necessary items. The location of the Field Office shall be within reasonable proximity of the Project Office subject to reasonable discretion of the LA DOTD. If land acquisition is needed, it will be at the Developers cost. The Developer shall provide the following with the office space:

(a) All utility installation, maintenance, and costs;

(b) High-speed local area network (LAN) with a minimum of two 1-gigabits per second (Gbps) network drops and all service charges. All drops shall have the ability to connect to the internet. The network shall also provide WPA2 secured wireless (wi-fi) in accordance with Institute of Electrical and Electronics Engineers (IEEE) 802.11n standards. Coverage shall be provided for the entire office utilizing dual band radios capable of operating at both 2.4 and 5 gigahertz (GHz);

(c) Daily janitorial services, including providing trash and recycling containers and pickup service;

(d) Exterior building maintenance, including the parking lot;

(e) Removal of all Contractor-provided facilities when the Field Office is removed;

(f) Site identification signing;

(g) Telephone installation, phone service charges;

(h) Building access control by receptionist or key card entry; and

(i) Americans with Disabilities Act, 42 USC § 12101, et seq. (ADA) compliant.

The Developer shall provide and supply the office space and equipment specified in this section for the period commencing not later than 60 days prior to Commencement of Construction until Final Acceptance.

2.3.9.1 Field Office Requirements for LA DOTD Personnel

The Developer shall provide office space for LA DOTD personnel no less than the space requirements indicated in Table 2-5.

Table 2-5. Project Office Space Requirements

Space	Quantity	Requirement
Office	4	175 square feet each, enclosed with lockable door, 48-inch round table with four chairs, additional bookcase and computer desk
Office	4	10-foot x 12-foot modular spaces
Conference room	1	300 square feet, enclosed with lockable door Additional furnishings in conference room: conference table and chairs to accommodate 15 people; 4-foot by 8-foot white board
Storage/Filing	2	150 square feet, enclosed with lockable door Additional furnishings in each storage/filing room: eight four-drawer file cabinets and two 11-inch by 17-inch file cabinets with four drawers. One storage/filing room shall be windowless.
Restrooms	1 each	Men's and women's
Reception Area	1	10-foot x 12-foot
Paved parking		In addition to handicapped spaces required per code, minimum of 10 LA DOTD and 10 visitor designated parking spaces within 100 feet of the Field Office
Break room	1	250 square feet, 8 feet of counter space with sink, drinkable running water, microwave, refrigerator, range/oven and break room supplies
Exterior	1	Covered entryway

Section 2.4 Design Management

2.4.1 Design Management Plan

As part of the PMP, the Developer shall prepare a Design Management Plan and submit for Approval. The plan shall define the approach to completing the design. The plan shall address the topics covered in this section and also include the Design Document packaging scheme, design organizational structure, Key Personnel, descriptions of the relationships with the organizations for the Design Work, Construction Work, O&M Work and quality, and the design development process as outlined in requirements of the Contract Documents.

The Developer shall prepare all Design Documents under the direct supervision of the DM. All Design Documents shall be signed and sealed by a Professional Engineer.

2.4.2 General Developer Responsibilities

The Work shall be performed in accordance with the details as shown on the Design Documents subject to Review and Comment and/or Approval and FHWA approval, as appropriate.

It is the Developer's sole responsibility to provide Design Documents of such a nature to develop a finished product in accordance with the requirements of the Contract Documents. The Developer shall verify pertinent dimensions in the field prior to the review of the Design Documents. Review of the Developer's Design Documents by the LA DOTD or FHWA does not relieve the Developer of the responsibility for the satisfactory completion of the Work.

Design Documents are subject to the Review and Comment and/or Approval as per Article 24. Subsequent to satisfactory resolution of all comments and/or approval, the design intent shall not be thereafter amended or altered without the prior approval of the DM and subsequent Review and Comment and/or Approval.

The Developer shall perform the following:

(a) Manage the design and design QC;

(b) Coordinate with and obtain necessary approvals from Governmental Authorities having jurisdiction for temporary road diversions and detours, shutdowns, temporary diversions, utility relocations, temporary sidewalk closures, and pedestrian detours; and

(c) Ensure that the Designer properly checks the designs of the Project and that the DQM certifies QC procedures in accordance with requirements of the Contract Documents.

The Developer shall comply with Design Life requirements shown in Exhibit 23-1 and shall incorporate lifecycle considerations in the design of the Project.

The procedures for the checking of design of permanent components also apply to design of Major Temporary Components and construction sequences that affect the permanent components of the Project.

2.4.3 Developer's Design Organization and Obligations

2.4.3.1 Lead Designer

The Developer shall retain a suitably qualified and experienced Lead Designer to undertake the design of the permanent components and the Major Temporary Components of the Project. The Lead Designer shall assemble a design team to undertake the Work. The Developer shall maintain all necessary representation throughout the duration of the DB Period and as needed during the Operating Period to ensure the Lead Designer can meet all its obligations under the requirements of the Contract Documents and to ensure that the design intent is met by construction.

2.4.3.2 Location of Developer's Designer

The Developer's Designer may perform production design Work in the Project Vicinity or elsewhere.

2.4.3.3 Design Manager

The DM and/or staff working under the direct supervision of the DM shall conduct an assessment and evaluation of the design such that the DM can certify to the Developer and to the LA DOTD that the design satisfies the requirements of the Contract Documents, including the following:

(a) Accuracy;

(b) Adequacy;

(c) Conformance to standards of practice;

(d) Compliance with codes, standards, and permits;

(e) Cost effectiveness; and

(f) Quality.

The DM shall include such written certification for all Work being subjected to a Design Review as per Article 24.

The DM's activities shall include, at a minimum, assessment and evaluation of the following:

(g) Design reports;

(h) Design reviews;

(i) Review of Working Drawings;

(j) Evaluation and mitigation of non-conformance reports;

(k) Analytical approach;

(l) Drawing details for conformity to requirements of the Contract Document;

(m) Project Specifications for conformity to requirements of the Contract Document;

(n) Design Documents and Working Drawings;

(o) Major Temporary Components' effect on permanent components;

(p) Field design changes;

(q) Design approvals for materials and procedures; and

(r) As-Built Plans for conformity with final design and requirements of the Contract Document.

2.4.3.4 Responsible Engineer

The Designer shall designate and assign one or more Responsible Engineers for each Developer-designated Design Unit. Each Responsible Engineer shall sign and seal design reports, Design Documents, and RFC Documents for the assigned Design Unit(s) for which they have responsible charge. Each Responsible Engineer shall be a Professional Engineer.

2.4.3.5 Design Quality Manager

The DQM shall report to the QM and shall be a person who is independent from the production of the design. The DQM shall be in the Project Vicinity as required throughout the design process and shall be physically present in the Project Vicinity to manage design QC related to design support during construction, design changes, and completion of As-Built Plans.

The DQM shall assess and evaluate the Developer's design QC activities to be able to certify to the Developer and to the LA DOTD that the design QC activities comply with the requirements of the Contract Documents, including the QMP.

In addition to responsibilities listed in Section 2.3.5, the DQM shall have QC responsibilities related to the following:

(a) Design of permanent and Major Temporary Components;

(b) Changes in design of permanent components; and

(c) As-Built Plans.

The DQM shall also perform the following activities:

(i) Identify and report non-conformities/non-compliance;

(ii) Track, monitor, and report on status of outstanding design-related non-conformance reports;

(iii) Supply monthly reports; and

(iv) Submit specified certificates (permanent components and Major Temporary Components).

These responsibilities are further specified in Section 2.4.14.

2.4.3.6 Check by the Designer

The requirement that the Developer engage and use a DQM does not relieve the Designer from carrying out all the checks and reviews that a professional and prudent Designer would normally carry out on the type of Work that is actually being designed.

2.4.4 Design Units

The Developer shall package all design and drawings for the Work into separate Design Units. Each Design Unit shall comprise similar and coherent significant parts of the Project that can be checked and reviewed as a self-contained package with due consideration for accommodating interfaces with other Project components.

No later than 30 days after NTP, the Developer shall provide a written report updating and identifying each Design Unit. The written report shall include the following:

(a) Design Unit descriptions, including the scope of design Work within each Design Unit, limits, and interface points;

(b) Planned review stages and dates, including specific information to be reviewed, planned review dates (measured from the NTP date), and percent complete represented by each review; See Form DUS (Exhibit 2-4)

(c) The identity of the Responsible Engineers; and

(d) Locations where design Work will be performed.

The Developer shall submit any revisions to the information provided in response to this section in writing to the LA DOTD concurrent with the Monthly Progress Report.

2.4.5 Relationship of Early Construction Starts to Design Development and Review

It is the intent of the LA DOTD to allow construction to begin on a Design Unit prior to completion of all Design Units. The Developer may begin construction on any Design Unit at any time after the applicable RFC review process has been completed for that Design Unit. Proceeding with construction prior to completion of the RFC review process for all Design Units is at the Developer's risk.

2.4.6 Schedule for Design Checks, Reviews, and Submission of Checked Design

The Developer, through its DM, is responsible for scheduling and conducting Design Reviews. See Article 24 for Submittal types and review periods. The Developer shall give written notice of scheduled Design Reviews to the LA DOTD's Project Manager at least one week prior to any review.

The Developer shall include Design Review schedule for all Design Units (including their components and elements) as part of the Project Baseline Progress Schedule. The Developer shall not schedule more than five concurrent Design Reviews and no more than three within a typical discipline without the LA DOTD's written concurrence**.** Administrative and management submittals are not subject to this limitation.

The Developer shall make specified submissions of checked designs in accordance with Section 2.4.9 and 2.4.14. The Developer shall not schedule more than ten

Design Submittals within 14 days without the LA DOTD's written concurrence**.** Submissions shall be completed for each Design Unit but may be combined for multiple Design Units at any one time upon the LA DOTD's written concurrence.

For each Design Unit designated by the Developer, the Developer shall include design checks and Design Reviews as indicated in Table 2-6 and such additional reviews as may arise as indicated in Section 2.4.14. The Developer shall report progress and updates in the monthly schedule updates and during the weekly progress meetings.

2.4.7 Design Review Plan

The Developer shall prepare and submit a written Design Review Plan no later than 30 days after NTP for Review and Comment by the LA DOTD. The Design Review Plan shall describe the level of design that the Designer will accomplish for each of the planned stages of design development and provide a description and/or checklist for each Design Unit clearly identifying the design product that will be reviewed.

2.4.8 Stages of Design Development

The Developer shall make a single comprehensive design check and Design Review for each Design Unit at the stages of design development specified herein.

The following are the five stages of design development:

(a) Definitive Design;

(b) Interim Design;

(c) Final Design;

(d) RFC Documents; and

(e) As-Built Plans.

The Developer shall complete Design Reviews or design checks as specified in Section 2.4.14for each Design Unit (and for each component or Element within a Design Unit) at each stage of design development.

2.4.9 Design Reviews

The Developer shall invite the LA DOTD and FHWA to participate in Definitive Design, Interim Design, and Final Design reviews. These Submittals shall be submitted for Review and Comment. The Developer shall resolve the LA DOTD's and FHWA's comments to the satisfaction of the LA DOTD prior to completion of the Design Review process.

2.4.10 Definitive Design Review

The review of Definitive Design shall be the first review after NTP and is intended to verify that the design concepts proposed by the Developer meet the requirements of the Contract Documents. The Definitive Design review shall verify the following:

(a) The design concepts governing future design development are defined consistently with the requirements of the Contract Documents;

(b) Comprehensive engineering drawings showing design concepts;

(c) The design concepts are substantiated and justified by adequate site investigation and analysis;

(d) Base Right-of-Way (ROW) Maps;

(e) The specific standards applicable to the proposed concepts are identified and appropriate;

(f) The proposed design concepts are constructible;

(g) The availability of required materials/equipment;

(h) The design meets Project quality requirements and required design QC procedures have been followed; and

(i) The list, including locations of all conflicting environmental wells to be plugged and abandoned and the schedule indicating when the work must be completed. .

If the Definitive Design is amended subsequent to the Definitive Design review, the amended Definitive Design shall meet all Submittal requirements and will be considered an additional Definitive Design review. The Developer shall not be entitled to any consideration of a Compensation Event for the re-check and re-certification except when the amended design results from a Change Order requested by the LA DOTD.

2.4.11 Interim Design Reviews

The Developer and the LA DOTD will use the Interim Design review(s) to further verify that the concepts and parameters established and represented by the Definitive Design are being followed, final Plan and relocation requirements are identified, and that requirements of the Contract Documents continue to be met. The Developer shall specifically highlight, check, and bring to the attention of the LA DOTD any changes to information presented at Definitive Design. The Developer shall resolve the LA DOTD's comments on the Interim Design to the satisfaction of the LA DOTD, and the resolution of these comments shall be incorporated into the Final Design.

2.4.12 Final Design Review

The Developer shall schedule and conduct a Final Design review when the Design Documents for a Design Unit are complete. The Developer shall specifically highlight, check, and bring to the attention of the LA DOTD any changes to information presented at previous Design Reviews. The Developer shall resolve the LA DOTD's comments (if any) on the Final Design to the satisfaction of the LA DOTD.

2.4.13 Released for Construction Documents

After all comments from the Final Design submittal have been addressed and appropriately incorporated, the Developer shall submit RFC Documents to the LA DOTD for Review and Comment. All RFC Documents shall be signed and sealed by the DM and DQM. The Developer shall submit a comment resolution form (Form DR, Exhibit 2-1), with or before the RFC Submittal. The RFC Submittal shall include:

(a) Design plans;

(b) Design calculations;

(c) Design reports;

(d) Project Specifications (indexed and numbered);

(e) All Governmental Approvals (excluding LA DOTD-Provided Approvals) and Utility Owner approvals required to perform the portion of the Work covered by the RFC Documents; and

(f) ROW documentation for additional ROW, obtained for the Project as a result of the Developer's design.

The Developer shall submit electronic pdf files of all RFC Documents. If RFC Documents are submitted in more than one package, a final package that compiles all RFC Documents must be submitted after all comments are received and incorporated as appropriate. This compiled package must be presented in a logical manner (e.g., consecutive page numbering, table of contents).

The Responsible Engineer shall sign all drawings prepared under his/her direction. For those drawings and documents included in the Submittal that are prepared by a manufacturer or supplier or other Persons not under the Responsible Engineer's direct supervision, the Responsible Engineer shall affix a stamp that indicates the design shown on the sheet or document conforms to the overall design and requirements of the Contract Documents.

The DM shall sign the title sheet to the drawings certifying that the design satisfies the Contract Requirements regarding:

(g) Accuracy;

(h) Adequacy;

(i) Conformance to Good Industry Practice;

(j) Compliance with codes, standards, and permits;

(k) Cost effectiveness;

(l) Quality; and

(m) RFC Quality Assurance

The DQM shall sign the title sheet for the RFC Documents, certifying the following (the title sheet can be formatted to include the items of certification):

(a) The design meets all applicable requirements of the Contract Documents, applicable Law, and the Governmental Approvals;

(b) The design has been checked in accordance with Developer's approved QMP;

(c) All required ROW has been secured, along with any and all necessary approvals from Governmental Entities and Utility Owners;

(d) All comments from the LA DOTD and other reviewing agencies from previous Submittals are resolved;

(e) Any Design Deviations Approved in accordance with Section 2.4.15; and

(f) All outstanding issues or comments from Design Reviews have been resolved to the satisfaction of the LA DOTD.

Any design NCRs issued by the DQM or the LA DOTD must be addressed and resolved by the Developer to the satisfaction of the LA DOTD prior to releasing any design for construction.

2.4.13.2 RFC Design Calculations

The Developer shall submit calculations according to the following requirements:

(a) Ensure that all title blocks of calculation sheets include the calculation title; file number; page number; initials of the Designer, checker, and back-checker; and dates of when design, checking, and back-checking occurred;

(b) Ensure that all calculations indicate the design requirement, the assumptions made, the methods used, the source of the information, and the cross-reference for the applicable design drawings;

(c) Ensure that all structure calculations and bridge rating calculations performed using software are independently checked. The Developer shall ensure that hand calculations are verified;

(d) Ensure that all calculations include the final iteration and are readily accessible, clear, understandable, concise, complete, and accurate so the final design of an Element is easily determined;

(e) Ensure that all calculations are bound and numbered with a table of contents;

(f) Ensure that all calculations identify the code or standard utilized and indicate the specific section referenced in the right-hand column;

(g) Reference the computer programs and versions used in the calculations;

(h) Ensure that all manual calculations are printed, neatly and legibly; and

(i) Ensure that all calculations, manual or computer generated, are on 8½-inch by 11-inch or 11-inch by 17-inch standard paper. Minimum allowable font size is 12 point.

2.4.13.3 RFC Submittal Requirements

All RFC Documents shall meet the following requirements:

(a) All Work, including modifications to the DB Work, is designed under the authority of and signed by a Professional Engineer;

(b) The timing of submission of these documents is indicated in the Project Schedule;

(c) The limits of excavation have been identified for all excavation work;

(d) The limits of all stay-in-place Elements of temporary works have been identified;

(e) Include estimated quantities for all items that require inspection or testing in accordance with the Construction Quality Assurance Program (CQAP);

(f) Submit product cut sheet information, as required, to define the DB Work.

(g) All shop drawings, and other items necessary to construct the Work are submitted, or are identified for future receipt and review after the RFC Submittal is submitted and returned (i.e., shop or Working Drawings and product data sheets);

(h) All design NCRs noted in form NCR-D (Exhibit 2-2) have been addressed and closed out; and

(i) Include material strength, type, grade, and American Society of Testing and Materials (ASTM) or American Association of State Highway and Transportation Officials (AASHTO) designation for all materials.

2.4.13.4 Major Temporary Components

The Developer's Design Documents for Major Temporary Components shall be signed, sealed, and certified by a Professional Engineer. The Developer shall submit Major Temporary Components Design Documents to the LA DOTD For Information.

2.4.13.5 As-Built Plans

The Developer shall submit the As-Built Plans for each Design Unit. As-Built Plans shall reflect the actual conditions and location of Work as constructed and installed. As-Built Plans shall be produced in the same manner, scale, and size as the original drawings. The Developer shall modify electronically all drawings to record actual construction where it varies from the RFC Documents and shop drawings. As-Built Plans shall be signed and sealed by the Design Manager and produced in a format that is acceptable to the LA DOTD.

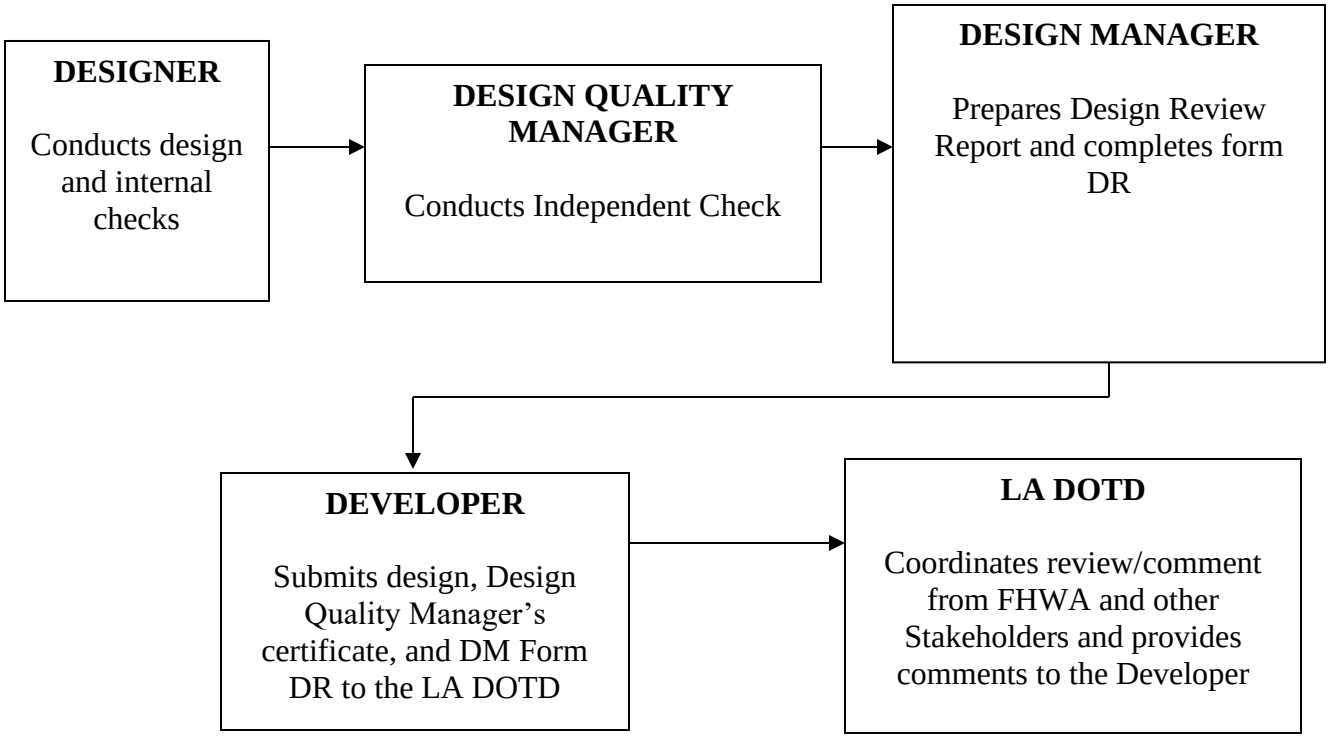
See Section 2.4.14.4for additional requirements relating to As-Built Plans and information.

2.4.14 Design Checks, Certifications, and Reviews

The Designer shall check all Design Documents (drawings, plans, specifications, calculations, and reports). The DQM shall certify that these documents have been checked as per the requirements of the Contract Documents and the QMP. The DQM's written certification shall provide the certification specified in the QMP.

The Developer and the LA DOTD will follow the process shown in Figure 2-1 for Design Reviews conducted by the DM (applies to all Design Reviews except As-Built Plan Design Reviews).

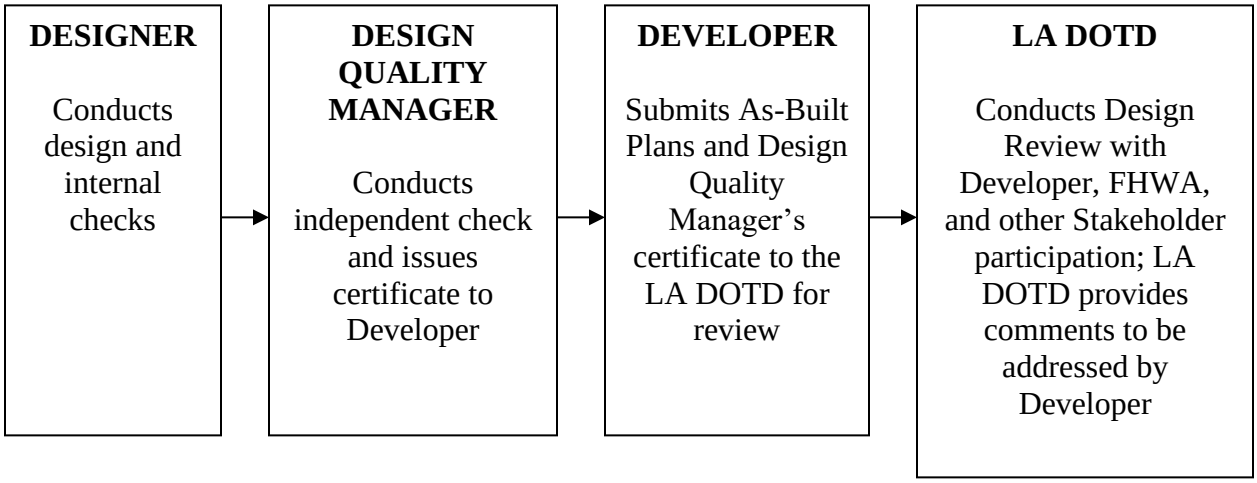
Figure 2-1 Design Review Flow Chart



The Developer and the LA DOTD will follow the process shown in Figure 2-2 for As-Built Plan Design Reviews.

Figure 2-2 As-Built Plan Design Review Flow Chart

(LA DOTD Conducts Design Reviews)



The Developer shall conduct and complete the design checks, certifications, and reviews for each Design Unit by the entity specified in Table 2-6. The LA DOTD will Review and Comment on the design prior to the Developer releasing designs for construction. These comments shall be resolved to the satisfaction of the LA DOTD prior to releasing the design(s) for construction. The LA DOTD may also issue design NCRs which shall be addressed and resolved to the satisfaction of the LA DOTD prior to releasing the design(s) for construction.

The Developer shall conduct its Design Review or submit its design for review in accordance with Table 2-6, supported by a written certification issued by the DQM, at the stages of design development shown in Table 2-6 for each Design Unit.

Table 2-6. Design Checks, Certifications, and Reviews

For Permanent and Temporary Components

STAGE OF DESIGN DEVELOPMENT	DESIGN CHECK AND CERTIFICATION TO DEVELOPER	DESIGN REVIEW
Definitive Design	Designer and DQM	DM
Interim Design	Designer and DQM	DM
Final Design	Designer and DQM	DM
RFC Documents	Designer and DQM	DM
As-Built Plans	Designer and DQM	LA DOTD
Major Temporary Components	Designer and DQM	DM
Temporary Components	Designer and DQM	Not applicable

2.4.14.1 Developer's Independent Checks

The Developer shall carry out Independent Checks of permanent components, Major Temporary Components, and effects of temporary components on the permanent components by senior engineers not involved in the production of the design being reviewed who have equal or greater qualifications and experience as the Responsible Engineer for the design being independently checked.

Independent Checks of the design shall comprise design assessment and analytical checks as specified in Sections 2.4.14.2 and 2.4.14.3, respectively. These Independent Checks shall be completed before any Design Review and will not be concurrent with the Design Review.

2.4.14.2 Design Assessment

Design assessment shall be the review of general compliance with the requirements of the Contract Documents, taking into consideration the proposed method of construction, and shall include the following areas:

(a) Loads;

(b) Codes and standards;

(c) Methods of analysis;

(d) Computer software and its validation;

(e) Interface requirements;

(f) Maintenance requirements;

(g) Materials and materials properties;

(h) Durability requirements;

(i) Fatigue performance;

(j) Hydrology;

(k) Design flows; and

(l) Operational requirements.

2.4.14.3 Analytical Check

The structural design Independent Check shall include an independent analytical check using separate calculations (and without reference to the Designer's calculations) to establish the structural adequacy and integrity of load carrying members. This analytical check shall include, but is not limited to, the following:

(a) The structural geometry and modeling;

(b) Materials properties;

(c) Member properties; and

(d) Loading intensities.

2.4.14.4 Design Reviews

The Developer's time and cost impacts of revisions arising from the LA DOTD, FHWA, and permitting agency participation in Design Reviews and/or caused by the Developer's non-compliance with the requirements of the Contract Documents, including the LA DOTD's time for reviewing revisions, shall be borne by the Developer.

(a) Design Reviews Conducted by the DM

After the Independent Checks have been completed, the Developer shall notify and invite the LA DOTD and FHWA to participate in all Design Reviews conducted by the DM. The LA DOTD will provide comments based on the LA DOTD and FHWA participation regarding these Design Reviews.

For Design Reviews conducted by the DM (see Figure 2-1), the DM shall provide a Design Review report for each Design Unit at the conclusion of each Design Review.

The Design Review reports shall identify any actions arising from the review and shall include the completed Form DR, showing final disposition and resolution of review comments. The Design Review report shall note items requiring corrective action on the design NCR-D Form. The DQM shall send the design NCR to the Designer and a copy to the LA DOTD. The Developer shall conduct Design Reviews in the offices of the Designer and/or Developer in the Project Vicinity. The DM, Responsible Engineer and any specialists with significant input to the design or review shall be present. The Developer shall provide to the LA DOTD all Design Documents pertinent to the Design Review.

(b) As-Built Review

As-Built Plans and Project Specifications shall incorporate complete information that defines the Work as constructed to meet the requirements of the Contract Documents.

The Developer shall submit As-Built Plans complete for each Design Unit for Review and Comment. The LA DOTD review will be one of the processes to verify the Project has been designed and constructed in accordance with the requirements of the Contract Documents.

The Developer shall make all corrections noted in the review of As-Built Plans and resubmit the corrected As-Built Plans for Review and Comment.

Design Acceptance by the LA DOTD will not occur until all the As-Built Plans are submitted, reviewed, and corrected to the satisfaction of the LA DOTD.

(c) Design Review of Major Temporary Components

The DM shall conduct a Design Review of Major Temporary Components that represent complex structures and that potentially can affect the safety, quality, and durability of the permanent components. The review shall include the effect of the Major Temporary Components on the permanent components.

(d) Additional Reviews

The LA DOTD (with FHWA participation) may conduct additional "over-the shoulder" reviews as considered necessary, in the sole determination of the LA DOTD, to ensure a continued and uniform consistency in the quality and effective incorporation of revisions to designs. The Developer may also conduct reviews necessary to facilitate early release of RFC Documents.

All review comments from LA DOTD and FHWA (if any) shall be resolved by the Developer to the satisfaction of the LA DOTD prior to any design being released for construction.

Any design NCRs issued by the DQM or the LA DOTD shall be addressed and resolved by the Developer to the satisfaction of the LA DOTD prior to any design being released for construction.

2.4.14.5 Comment Resolution

The LA DOTD's and Stakeholders' comments from Design Reviews will be recorded on Form DR and transmitted to the Developer. The Developer shall record its proposed disposition and response to each comment and meet with the LA DOTD to resolve outstanding comments and dispositions to the LA DOTD's satisfaction. Final disposition and resolution will be documented on Form DR and included in the revised submittal.

If the Design Review reveals non-conformance with requirements of the Contract Documents, the DQM shall document the non-conformance on Form NCR-D. When the non-conformance is corrected, the Developer shall complete and resubmit Form NCR-D to the LA DOTD. The LA DOTD reserves the right to identify and submit NCRs to the Developer.

All Design Reviews shall include a comment and NCR resolution process where unresolved comments and NCRs are discussed and a written action plan and schedule for resolution of unresolved comments and NCRs is developed. The DQM shall lead the process.

2.4.15 Design Deviations

For the purpose of delivering a compliant geometric design of the Project, the Developer's design shall be consistent with the Basic Project Configuration within the DB Limits and Reference Documents in all elements of its depicted horizontal and vertical geometry.

All Design Deviations from the Contract Documents or the Standards shall be identified on the LA DOTD Design Report for 2017 Minimum Guidelines as applicable and submitted for Approval. All requests for deviations shall be submitted with the appropriate justification report detailing the reasons to retain a non-standard or substandard feature or for providing an improvement that does not bring the feature up to standard. Requests for Design Deviations shall be submitted with the Definitive Design Plans submittal and Approved before the affected Design Units will be released for construction. If the LA DOTD does not approve a Design Deviation, it is the Developer's sole responsibility to provide design in accordance with the requirements of the Contract Documents.

Additionally, Table 2-7 identifies anticipated Design Deviations which the Developer can utilize for their design development. However, the Developer shall still prepare and submit Design Deviations listed in Table 2-7 that the Developer intends to use in its design development for Approval. Notwithstanding the above, the Developer's design shall meet the Technical Provisions.

Table 2-7. Anticipated Design Deviations

#	DESCRIPTION	VALUE
1	Below minimum horizontal curve length at mainline curves I10-4A and I10-9	13*V min.
2	Above maximum horizontal compound curve factor at WB I-10, STA 2366+80.72 to STA 2381+92.95 (R = 15,957) and STA 2381+92.95 to STA 2390+33.49 (R = 4,057)	3.93 max.
3	Below minimum available turn lane storage length at NB Sampson Street/WB I-10 ramp intersection	95 feet min.
4	Below minimum left turn lane taper at NB Sampson Street/WB I-10 ramp intersection	36 feet min.
5	Below minimum mainline inside shoulder width between east abutment Lakeshore Drive bridge and the end of Project	Match existing
6	Below minimum mainline outside shoulder width between east abutment Lakeshore Drive bridge and the end of Project	10 feet min.
7	Below preferred minimum length of speed change lane between Bilbo Street & Kirkman Street	700 feet min.

8	Below preferred minimum cross-slope between east abutment Lakeshore Drive bridge and the end of Project	Match existing
9	Below preferred minimum mainline superelevation on I-10 near Ryan Street	Match existing
10	Below preferred minimum vertical clearances at Bridges B-14 and B-15	Vertical clearance no less than existing
11	Below preferred minimum bridge width at Bridges B-14 and B-15	Travel lane widths and shoulder widths allowed in items 6 and 7
12	Below preferred shoulder cross-slope between east abutment Lakeshore Drive bridge and the end of Project	Match existing
13	Geometry associated with R-19 (vertical, horizontal, shoulder width, etc.)	Match existing
14	Allowable differential hydraulic head at Bayou Verdine Bridge B-4A	1.1 feet max.
15	Above maximum grade on Ramp R-14	7.62% max.
16	Below minimum grade elevations along service road SR-1A in the vicinity of Mike Hooks Rd.	7.0 ft NAVD 88 elevation.
17	Below minimum grade elevations along Ramp R-4	Existing elevation at US 90/UPRR undercrossing

2.4.16 Design Changes Before Construction

Design changes may occur prior to construction or may occur after Final Design and may be initiated by the Developer, through its Designer, or the LA DOTD.

For all design changes requiring calculations, the Designer and the DQM shall conduct a documented check of all calculations. All design changes requiring alteration of design

documents released for construction shall undergo all review procedures included for original design documents in the QMP and Section 2.4.15.

The Developer shall deal with any changes to design initiated by the Developer and already checked by the Designer and certified by the DQM as an entirely new design. The Developer shall not be entitled to a Compensation Event in such circumstances.

2.4.17 Design Support During Construction

The Designer and DQM shall verify during construction that the conditions encountered are consistent with the design and related Design Documents. The Designer shall prepare necessary adjustments in the Design Documents, and the Developer shall submit for Review and Comment or Approval as required by the requirements of the Contract Documents. The Developer shall be responsible for obtaining all Governmental Approvals, in accordance with Section 8.05(b) of the Agreement, or other permits as required. The Designer and DQM shall check any such changes in accordance with the QMP. The DQM shall certify the change in writing as meeting the requirements of the Contract Documents.

The Developer shall incorporate the adjustments in the As-Built Plans. The Developer shall retain copies of its DQM's written certifications and submit the certifications to the LA DOTD.

2.4.18 Quantity Estimates

To facilitate determining sampling and testing requirements, the Developer shall provide quantity estimates for the Work on its Plans. The quantity estimates must be in units that facilitate sampling and testing (i.e., the units must be consistent with the units used to determine frequency of sampling and testing). For example, if "X" numbers of compaction tests are specified to be taken for every "Y" cubic yards of embankment, the quantity estimate would need to be in cubic yards of embankment.

See also Section 2.4.21.4.

2.4.19 Design Documentation

2.4.19.1 Design Quality Records

The DQM shall prepare and submit monitoring reports to the LA DOTD of all design issues and review comments resulting from the scheduled and additional checks and reviews, including "over-the-shoulder" reviews.

The Developer shall also maintain an auditable record of all of its QMP procedures. An independent auditor shall be able to determine by reviewing documentation if all procedures included in the QMP have been followed.

The Developer shall submit reports of checks and reviews within seven days of the completion of the review.

The Developer shall develop, implement, and maintain a log of design NCRs and/or notices indicating dates issued, reasons, status, or resolution and date of resolution.

The Developer shall prepare and maintain daily records of design activities on forms acceptable to the LA DOTD.

2.4.20 Design Quality Manager Reports

2.4.20.1 Monthly Report to the Louisiana Department of Transportation and Development

The DQM shall submit a monthly report directly to the LA DOTD by the third day of the following month that includes the following:

(a) A summary of reviews conducted;

(b) Identification of Nonconforming Work and current status and/or disposition (based on design NCR logs); and

(c) A listing of Submittals from the Developer and status.

2.4.21 Final Design Report

Upon completion of the Final Design for each Design Unit, including all its components and Elements, the DQM shall notify the Developer, with a copy to the LA DOTD, of any outstanding monitoring report issues or unresolved review comments.

2.4.21.1 Plans

The Developer shall perform the Work in accordance with the details as shown on the Design Documents and RFC Documents. Participation in the review of the Design Documents and/or RFC Documents by the LA DOTD and FHWA (or other Stakeholders, if invited by the LA DOTD) will not relieve the Developer of the responsibility for the satisfactory completion of the Work.

The Designer shall review and approve the RFC Documents in writing before beginning Construction Work. The RFC Documents shall not thereafter be amended or altered without prior written approval of the Designer and Review and Comment, in accordance with Section 2.4.13.

All Design Documents, RFC Documents, and As-Built Plans shall be signed and stamped/sealed by the appropriate Responsible Engineer and shall include on the title sheet for the plans certification signatures of the DM and the DQM per Section 2.4.13.2.

2.4.21.2 Format and Organization

The Developer shall organize and format Design Documents, RFC Documents, and As-Built Plans in a logical and orderly fashion, and in accordance with generally accepted practices in the State of Louisiana. The As-Built Plans shall be submitted in both hard and electronic copy for signature by the LA DOTD Chief Engineer as per Louisiana Revised Statutes Sections 36:508 and 48:92. The final As-Built Plan set shall be organized in a single set of plans for the entire Project.

2.4.21.3 CADD Standards

The Developer shall be responsible for developing all design files and CADD plans. CADD formatting shall be consistent and logical for all plans created by the Developer and shall comply with the most recent version of the "LA DOTD Software and Deliverable Standards for Electronic Plans" found at:

http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Electronic_Plans_Delivery/Pages/default.aspx

The Developer shall install updates to appropriate software as instructed by the LA DOTD.

2.4.21.4 Project Specifications

The Developer shall prepare Project Specifications based on the requirements of the Contract Documents. The Developer shall submit Project Specifications for Review and Comment. At a minimum, the Developer shall perform the following activities:

(a) Use the LSSRB, Supplemental Specifications, and Special Provisions modified as needed by the Developer; and/or

(b) Prepare new specifications to cover the Work.

Project Specifications, including the LSSRB, if used, will be reviewed by the Developer and the LA DOTD during Design Reviews to verify that the Project Specifications provide a level of quality that meets or exceeds the requirements of the Contract Documents and are suitable and appropriate to control the Work.

The Developer shall be responsible for demonstrating that the Project Specifications meet or exceed the standard of quality established by the LSSRB. Any deviation that results in a lesser standard of quality will require Approval. The LA DOTD will determine, if the Project Specifications meet the requirements of the Contract Documents.

Section 2.5 Construction Management

2.5.1 Construction Management Plan

As part of the PMP, the Developer shall prepare a Construction Management Plan for Review and Comment. The plan shall take into account the maintenance of traffic and coordination with other construction projects in the Project area. The Developer shall discuss phasing and sequencing approaches to the Project in the plan. The plan at a minimum shall include the Developer's construction organizational structure; identify Key Personnel; describe the relationships with the Developer's design, maintenance, and quality personnel; and define the RFI process.

The Developer shall develop and implement a construction management approach that:

(a) Promotes quality in the Work product;

(b) Ensures compliance with the QMP described in Section 2.11;

(c) Coordinates the design with the construction and promotes communication between Key Personnel and the LA DOTD throughout the process.

(d) Ensures that changes during construction to RFC Documents are reviewed, signed, and sealed by the applicable Responsible Engineer and are submitted to the LA DOTD for Review and Comment.

(e) Ensures that all Work is appropriately inspected and/or tested in accordance with requirements of the CQAP.

The LA DOTD will provide construction engineering, testing, and inspection to the extent that the LA DOTD, in its sole discretion, determines necessary for the PPP delivery method.

2.5.2 Construction Coordination

Within the Construction Management Plan, Developer shall provide details on how the Construction Work will be coordinated with the following:

(a) Other LA DOTD contracts affecting the Project or within the DB Limits; and

(b) Other contracts held by Governmental Entities affecting the Project during the Construction Work.

2.5.3 Baseline Element Condition Report

No later than 14 days after approval of the Safety Plan, the Developer shall perform Baseline Inspections and make a video recording of the entire DB Limits, detour routes, and surrounding areas to record the conditions. Video recording of the Project shall be in high resolution and high definition, 12 or greater mega pixels, including all Existing Facilities, structures, and environmentally sensitive areas that can readily depict the exact conditions of the existing Elements of the Work. Video recording shall be performed prior to the beginning of construction of any existing underground storm or sanitary sewer system within the Project or to the nearest structure, whichever is greater. Video recording shall be recorded in a manner that ensures playback clarity of the subject matter being recorded. The Developer shall prepare a Baseline Element Condition Report (BECR) and provide a copy of the recording and the BECR for Approval. The BECR shall establish the planned Maintenance Work to maintain the Project in a State of Good Repair throughout the DB Period.

2.5.4 Working Drawing Documents

The Developer shall generate Working Drawings, and material and equipment documentation as necessary to clearly define, control, construct, and inspect the Work.

All such drawings shall be reviewed by the Designer and revised accordingly until the Designer takes no exceptions to the content and the drawings and/or documents are stamped "Approved for Construction" by the Developer if the drawings meet the requirements of the design. After the Designer completes review of a shop or Working Drawing, submit the drawings

to the LA DOTD for Information. Shop or Working Drawings requiring signing and sealing are signed and sealed by a Professional Engineer, prior to being issued for construction.

The Developer shall include Working Drawings for items such as, but not limited to, structural fabrication plans, anchor bolt layouts, shop details, equipment lists, material identification and description, and any other information specifically required by the Contract Documents or other Governmental Entities.

The Developer shall prepare shop and Working Drawings and calculations for excavation shoring, cribs, cofferdams, falsework, overhead signs, temporary support systems, formwork, and other temporary Project Elements. The Developer shall describe the methods of construction proposed to be used for the Project on the shop and Working Drawings and calculations.

The Developer shall make no changes to any shop or Working Drawing after the Designer has approved them. Any deviations from approved shop or Working Drawings require the fabricator to submit revised drawings to the Designer for approval, and in accordance with the process outlined above for the original Submittals.

2.5.5 Product Data

The Developer shall submit to the LA DOTD manufacturers' warranties, guarantees, instruction sheets, parts lists, and other product data within 20 days of installation of the items to which they relate, and in any event prior to Final Acceptance.

The Developer shall ensure that the product data cited in this section is organized and indexed in a manner that allows easy review and retrieval of information.

2.5.6 Utility Tracking Report

The Developer shall submit a Utility Tracking Report for Review and Comment every 30 days.

Article 5 contains more information concerning the Utility Tracking Report and the requirement for the Developer to conduct a supplemental utility investigation after NTP.

2.5.7 Geotechnical

The Developer shall submit for Review and Comments the Geotechnical Instrumentation and Monitoring Plan.

The Developer shall submit for Review and Comment the Settlement Monitoring Plan if the Geotechnical Instrumentation and Monitoring Plan requires settlement instrumentation.

See Article 7 for more information.

2.5.8 Sewer Video Inspections

The Developer shall submit for Review and Comment all videos of existing and proposed sewers. The Developer shall submit the existing sewer videos prior to Construction

Work being performed in the vicinity of the sewer. The Developer shall submit the sewer videos prior to Construction Work being performed above the sewer.

2.5.9 Demolition and Removal Work Plan

The Developer shall submit a Demolition and Removal Work Plan for Review and Comment. The plan shall be in accordance with Article 9.

2.5.10 Survey Records and Reports

The Developer shall document the surveying work as outlined in Article 8. The Developer shall submit the survey records and reports during construction and prior to Final Acceptance as required by Article 8.

Section 2.6 Maintenance Management Plan

As part of the PMP, the Developer shall prepare a MMP and submit for Approval. The MMP shall have two parts. The DB Period MMP shall describe the Developer's responsibilities during the DB Period for Routine Maintenance and non-Routine Maintenance.

The Operating Period MMP shall describe the maintenance required during the Operating Period of the Agreement. Refer to Article 22 for components of the MMP.

Section 2.7 Occupational and Public Safety Plan

The Developer shall be responsible for the safety of its personnel and of the general public affected by the Project. As part of the PMP, the Developer shall submit a comprehensive Occupational and Public Safety Plan (Safety Plan). The Developer shall submit the plan for Approval no later than 30 days following NTP.

The Safety Plan shall fully describe the Developer's policies, plans, training programs, Project site controls, and incident response plans to ensure the health and safety of personnel involved in the Project and the general public affected by the Project during the Term. The Safety Plan shall address both the DB Work and the O&M Work.

The Safety Plan shall include procedures for notifying the LA DOTD of Incidents arising out of or in connection with the performance of the Work. The Safety Plan shall also include procedures for hurricanes and severe weather events, titled the Hurricane/Severe Weather Response Plan. The Safety Plan shall also include a Hazardous Materials and Wastes Management Plan (HM/WMP) as described in Section 2.7.7.

2.7.1 Occupational Aspects

The occupational aspects of the Safety Plan shall be specific to the Project, and shall describe the measures the Developer will follow to provide a safe Project site for all persons within the Project site (e.g., trades, supervisory and delivery personnel, visitors), including:

(a) A statement from the Developer emphasizing a commitment to the principles of construction safety;

(b) Processes ensuring that all team members, Subcontractors, delivery personnel, and visitors to the Project site meet a common set of safety requirements, regardless of their employer;

(c) Safety policies that meet or exceed all Occupational Safety and Health Administration (OSHA) requirements and guidelines;

(d) Initial and ongoing safety training plans for all persons within the Project site, including any necessary Project-specific training and training associated with hazardous materials and contamination;

(e) Approaches for dealing with anticipated hazards on the Project;

(f) Safety monitoring, inspections, and record keeping;

(g) Processes for accident and incident reporting and response, including procedure for responding to occupational health and safety issues identified by the LA DOTD; and

(h) The organizational chart that identifies all safety management personnel, their roles, authorities and line reporting relationships, with resumes of key safety management personnel.

2.7.2 Public Aspects

The public aspects of the Safety Plan shall be specific to the Project and describe the measures the Developer will follow to provide safety at all interfaces with the general public. The Safety Plan shall:

(a) Identify locations/conditions where the public might interface with the Work;

(b) Identify preventative measures for managing those interface locations/conditions; and

(C) Prescribe processes for implementing those measures.

2.7.3 Safety Manager

The SM's role is to manage all Developer construction safety matters and enforce compliance with the Safety Plan, all OSHA requirements, and the Safety Orientation Program. The SM's sole responsibility is the management of all the Developer's construction safety matters. The SM has the minimum qualifications as listed in Section 2.3.5, Key Personnel.

The SM shall maintain a master safety log for all Project safety matters. All safety-related activities, including safety deficiencies and corrective actions taken at each Project site, shall be included in the log.

The SM or designee shall sign all Project safety logs daily. The daily logs shall be maintained on-site and are available for the LA DOTD's use and inspection. The SM maintains the master safety log, which is available for the LA DOTD's use and inspection.

In the event of an unsafe condition, the SM shall order the Work to be stopped and the unsafe condition immediately corrected.

The Developer shall provide continuous safety coverage during the performance of the Work by the SM or designated representative. The SM or designated representative shall be easily identified on the Site by hardhat markings or other means.

2.7.4 Safety Orientation Program

The Safety Orientation Program is the Developer's written detailed plan and training program for the safety orientation of employees and all Contractors and Subcontractors working on the Project. The Safety Orientation Program shall apply to all and include, at a minimum:

(a) Developer Safety Plan;

(b) Applicable safety rules and regulations; and

(c) Responsibility of each employee to formally acknowledge receipt of safety rules, safety orientation, and training prior to performing or being assigned duties on the Project.

The Safety Orientation Program shall cover the applicable construction hazards addressed by OSHA safety regulations and training described in 29 CFR Part 1910, Occupational Safety and Health Standards, and 29 CFR Part 1926, Safety and Health Regulations for Construction.

Topics for the Safety Orientation Program include, at a minimum:

(a) Emergency Preparedness and response plan and drill:

(b) Specific Project site hazards and safe working methods;

(c) Review of Hazardous Materials and Wastes Management Plan;

(d) Personal protective equipment and safety procedures;

(e) Fire prevention;

(f) Location of first aid and medical facilities; and

(g) Specific safety requirements for work in waterway

2.7.5 Management of Safety Documents

The Developer shall maintain compliance records including, at a minimum:

(a) Minutes of safety meetings, inclusive of attendee sign-in sheets;

(b) Training records, including schedule for refresher training and plans for safety briefing subject matter;

(c) Safety engineer's and safety supervisor's daily logs; and

(d) Accident records, including OSHA Form 300, Log of Work-Related Injuries and Illnesses, and accident investigation reports for the Developer.

The Developer shall keep all compliance records and logs available in the Project Office for the LA DOTD's use and inspection. Copies of compliance records shall be provided to the LA DOTD upon request.

2.7.6 Daily Safety Audit Checklist

The Developer shall prepare a Daily Safety Audit Checklist including, at a minimum:

(a) A header stating the title of contract and contract number, date, time of shift, Project area(s) inspected, and weather conditions;

(b) Entry for each safety deficiency that includes location, severity, and nature of deficiency; time noted; names of persons and firms that were notified of deficiency, including time notified; and time and nature of corrective action(s);

(c) Notification includes, at a minimum, the parties exposed to the safety hazard;

(d) Entry for each deficiency not corrected on the prior shift's daily safety report (until the deficiency is corrected);

(e) Notation of each accident, incident, or injury reported including name of injured party or affected property owner; time of accident, incident or injury, and description of accident, incident, or injury; and

(f) Printed name and signature of person completing the report.

2.7.7 Hazardous Materials and Wastes Management Plan

As a component of the Safety Plan, the Developer shall develop a Hazardous Materials and Wastes Management Plan in accordance with OSHA. The HM/WMP shall include, at a minimum:

(a) Identification of potential environmental accidents and emergencies associated with site-specific construction activities;

(b) Response procedures to construction site environmental accidents and emergencies and for the prevention and mitigation of the environmental impacts that may be associated with them; and

(c) Annual reviews and revisions of the Emergency Preparedness and Response Plan, particularly after occurrences of environmental accidents and emergencies.

The HM/WMP shall cover the following:

(d) A Materials Management Plan that describes processes and procedures for management of hazardous and non-hazardous solid waste in accordance with current applicable laws and regulations;

(e) Provide a health and safety plan for protection of the health and safety of workers potentially exposed to hazardous and non-hazardous solid waste in accordance with current applicable laws and regulations; and

(f) The HM/WMP shall cover both the DB Period and Operating Period.

2.7.8 Emergency Action Plan

The Developer shall create an Emergency Action Plan in accordance with OHSA requirements that addresses, at a minimum:

(a) Fire, excavation collapse, and flooding;

(b) Weather events;

(c) Utility damage; and

(d) Equipment movement accidents.

2.7.9 Accident Reporting and Investigation

The Developer shall develop an incident investigation plan to address procedures for accident, incident and near misses investigation during the DB Period. The plan shall include an incident investigation decision chart for identifying root causes to prevent recurrences.

The Developer shall review, and if necessary, revise the Safety Plan based on the occurrence of serious accidents, incidents or near misses and upon any changes in Work conditions, or as required by the LA DOTD.

The Developer shall submit incident investigation reports to the LA DOTD For Information according to the following schedule:

(a) Provide verbal notification immediately for all accidents involving personal injury and damage to property;

(b) Submit the incident investigation report no later than 24 hours following each accident; and

(c) Provide verbal notification only of near misses and any corrective action being taken.

In the event of a serious accident as defined in the Safety Plan, the Developer shall convene an investigative meeting for the purpose of determining the cause of the accident and actions to be taken by the Developer to prevent a recurrence of such accidents. The Developer shall notify the LA DOTD of the investigative meeting in sufficient time to allow the LA DOTD to notify its safety group and others who may attend the meeting.

2.7.10 Construction Safety Report

The Developer shall submit a Construction Safety Report in accordance with the format of Form SAF, (see Exhibit 2-7), on a monthly basis. The Construction Safety Report shall contain summary data for the previous month and Project total data including, at a minimum:

(a) Number of recordable causes;

(b) Number of lost time cases;

(c) Number of days lost; and

(d) Total person-hours worked.

2.7.11 Unsafe Conditions

An unsafe condition is a condition that gives rise to the imminent possibility of serious injury to workers or the public or of serious damage to property or the environment. When an unsafe condition exists at the Project site, The Developer shall stop the Work in the affected area until the condition is corrected.

If the Developer does not take corrective action immediately or within the time period specified by the LA DOTD, the LA DOTD reserves the right to take whatever action is required to correct the unsafe condition, in accordance with Section 10.07 of the Agreement.

Actions perceived by the LA DOTD to be in flagrant disregard of and failure to comply with accepted processes in the approved Safety Plan and OSHA standards are cause for such actions to be taken, including at a minimum:

(a) No approved SM or designated SM on-site;

(b) No approved Safety Plan; and

(c) No safety measures when working around power feeds.

In addition to the assessment of Noncompliance Points, the LA DOTD may institute a safety stand-down involving all the Developer's personnel under the circumstances including:

(a) Recurring deficiencies revealed via trend analysis;

(b) Two or more accidents or near misses; and

(c) Flagrant disregard to comply with prescribed safety management procedures.

2.7.12 Fitness for Duty

The Developer shall ensure fitness for duty of all personnel when they report for Work and throughout the day. Should a worker be found to demonstrate incapacity because of drugs or the use of alcohol, the Developer shall immediately and permanently remove the worker from the Project.

Section 2.8 Transportation Management Plan

The Developer shall develop a TMP per the requirements outlined in Article 18. The TMP shall document how the Developer manages public traffic and traffic generated by its Project activities.

Section 2.9 Public Information and Communications Plan

The LA DOTD and the Developer are responsible for maintaining an open dialogue with the traveling public, businesses, community groups and organizations, emergency responders, affected third parties and Utilities surrounding the Project during the DB Period, with the objective of building a long-term relationship between the Developer and Stakeholders based on trust and respect. The Developer shall submit a Public Information and Communications Plan (PICP) for Approval.

Refer to Article 22 for public information and communication requirements during the Operating Period.

The PICP describes the Developer's approach to support and coordinate with the LA DOTD in communicating with Project Stakeholders. The Developer shall be responsible for the dissemination of all information related to the Project. All publicly disseminated information shall be in accordance with the PICP. The LA DOTD may provide additional guidance and consultation before the dissemination of information to the public at any time. The PICP shall include, at a minimum, the following:

(a) Describe the communication protocols between the Developer and the LA DOTD to facilitate a strong and enduring relationship with the public, including local community groups and businesses, third parties, and others within the Project. Discuss the role each plays in the various aspects of public information and communication throughout the Term;

(b) Identify at least one dedicated full-time staff member for the Project who also serves as the community relations representative for the Developer's public information and communication tasks, this may or may not be the same individual serving as the PIM;

(c) Provide a framework for communication with the public;

(d) Utilize social media and networking;

(e) Outline efforts to engage the community and local Stakeholders during the DB Period. Hold regular community meetings throughout the DB Period;

(f) Maximize public awareness of the benefits of the Project;

(g) Educate the traveling public on the use of the Project;

(h) Account for the Developer's planned Work;

(i) Address the change in the Developer's and the LA DOTD's responsibilities for dissemination of public information and communication when the Project enters the Operating Period;

(j) All public information and communication materials shall meet ADA requirements; and

(k) Describe approach and techniques for communicating with the different audiences affected by the DB Work including:

  (i) The general public, regarding traffic detours and changes in traffic patterns in the street network surrounding the Project;

  (ii) Local businesses, regarding programs that inform them about DB Work progress and any efforts the Developer is taking to provide assistance during the DB Period;

  (iii) Local residents and property owners, regarding construction activities and schedule; and

(iv) Emergency notification procedures and processes.

The Developer shall follow the communications protocol coordinated and Approved for communication with the public. The Developer shall act as the lead in disseminating any information to the public, in consultation with the LA DOTD.

The Developer shall inform the LA DOTD of all mitigation efforts to minimize conflicts for public events at least 10 days prior to the public event for Review and Comment.

Section 2.10 Environmental Compliance and Mitigation Plan

The Developer shall prepare, implement, manage, and, as required, update an ECMP in accordance with this section, Article 3, and Article 24. The ECMP shall establish appropriate controls in its management, design, construction/installation, and documentation procedures to ensure that requirements of the ROD, other Environmental Approvals, and Environmental Laws are met and documented, and coordinated with the NEPA Documents. The ECMP establishes and/or documents schedules, protocols, and methods to be used in accomplishing the Work, with an emphasis on monitoring, reporting, corrective actions, and adaptive management through the Term. The ECMP shall include, at a minimum, the following:

(a) Procedures for full compliance with the Project commitments, considerations, conditions of Environmental Approvals, Environmental Laws, and Review and Comment and, as applicable, Approval requirements for DB Work;

(b) Mitigation required by Environmental Approvals and the Developer's approach to satisfying any environmental commitments and mitigation requirements, including mitigation requirements identified after completion of the ECP;

(c) Procedure to further avoid and minimize impacts to woodlands, 4(f) resources, parklands, historical properties, Threatened or Endangered Species, and wetlands;

(d) The Developer's process, structure, organization location and methods proposed for documentation, communication, and QA/QC with respect to environmental compliance;

(e) The Developer's plan to take corrective actions to keep the Project in compliance with Environmental Approvals, Environmental Laws, and Project commitments at all times;

(f) A listing of applicable Governmental Approvals and environmental commitments that the Developer tracks and updates throughout the Term;

(g) Stormwater impacts and requirements; and

(h) Standard operating procedures for dust control and vibration mitigation during construction.

Section 2.11 Quality Management Plan

The Developer shall be responsible for all QA/QC activities necessary to manage the Work throughout the Term.

The Developer shall provide a QMP conforming to the requirements set forth by ISO 9001 Quality Management Principles and Section 10.01 of the Agreement.

2.11.1 Components of the Quality Management Plan

The QMP shall include components for a DQMP, a Construction Quality Management Plan (CQMP), and a Maintenance QMP and describe the quality system to be implemented at all levels of the Developer's organization, including Subcontractors and Suppliers at all tiers.

The QMP shall describe the QC procedures to be utilized to verify, check, and review all design, drawings, specifications, materials, construction checking, O&M monitoring activities, and other documentation and records prepared as a part of the Project. In addition, the QMP shall include a quality assurance program to confirm that the QC procedures are being followed and shall describe how the checking and review processes are to be documented and by whom to verify that the required procedures are followed.

Each component of the QMP shall include a detailed description of the inspection and test plans, including the timing and frequency of testing, that the Developer uses to meet QA/QC requirements of the Project. In addition to requirements listed above the QMP shall include the following:

(a) Document control procedures including control of quality records;

(b) Management roles and responsibilities;

(c) Resource management, training and certification;

(d) Design review, verification and certification;

(e) Construction inspection, verification, checking, control and testing;

(f) Materials inspection, verification, checking, control and testing;

(g) Design development review, control, checking and certification;

(h) Communication and interface protocols;

(i) Reporting protocols;

(j) Internal and external audit schedules;

(k) Any investigations and surveys undertaken by Developer as part of the preparation and design for the Project;

(l) Training, education and other measures to be taken to ensure compliance with relevant management plans;

(m) The Developer's quality policy and quality control regime for design quality management, construction quality management, and maintenance quality management, as well as their respective integration;

(n) Processes for noncompliance review and disposition, including the development of a Noncompliance Event tracking system, its required components, its tracking and

reporting processes and corrective and preventative action response strategies for Noncompliance Events;

(o) All Work performed by the Developer and the Developer's Subcontractors at any tier and;

(p) Quality assurance system and O&M Work-specific requirements.

2.11.2 Quality Processes and Procedures

The Developer shall make all quality records readily available and provide the LA DOTD with a copy of any and/or all quality records when requested. The Developer's quality program shall include all QA/QC procedures for the Developer to report and for the LA DOTD to monitor the status of, and close out, all Nonconforming Work reports, including Form NCR-D (Exhibit 2-2) and Form NCR-C (Exhibit 2-3), and Noncompliance Events throughout the Term. The Developer's personnel assigned to perform inspection, testing or monitoring are not those personnel performing or directly supervising the Work being inspected, tested or monitored.

QA includes all actions reasonably necessary to provide confidence in the quality of the Work. This includes the activities of the Developer, Subcontractors and other Developer-related entities, and the LA DOTD. The QA oversight, inspection, sampling and testing ("QA Inspection") includes the following:

The Developer shall oversee all QC, whether performed by the manufacturer during the production of materials or by the Developer during the placement of the material; and

The Developer shall perform QC testing in accordance with the CQAP.

2.11.3 Quality Team

The Developer's CQCM and quality assurance staff shall have no responsibilities for the production or direction of the Project. The roles and responsibilities of the CQCM are as listed in Section 2.3.5, and the quality system team reports directly to the DQM or the CQCM.

The CQCM and quality assurance staff shall prepare a monthly report (Quality Report) of the quality reviews, inspections, and tests performed; results of such reviews, inspections, and tests; and occurrences and resolution of Nonconforming Work Reports.

Beginning with the first full month after Commencement of Construction, the Developer shall submit Quality Reports to the LA DOTD for Review and Comment within seven days of the end of the month.

2.11.3.1 Quality Management Plan Reviews and Updates

The Developer shall conduct management reviews of its quality program as specified herein. As Work progresses, the Developer shall update the QMP to reflect current conditions. The Developer and, as applicable, the LA DOTD may identify the need for revisions to the QMP. The Developer shall submit updates to its QMP in accordance with the PMP requirements set forth in the requirements of the Contract Documents, and such updates will be subject to the Approval rights in accordance with the Contract Documents. The Developer shall submit to the LA DOTD a conformed copy of the updated QMP with revisions highlighted.

2.11.3.2 Materials and Equipment

The Developer shall provide all necessary inspections to ensure effective QC of the operations related to materials and equipment testing and acceptance. The Developer and its Subcontractors shall maintain a record of all inspections, including but not limited to, date of inspection, sampling and testing undertaken, and the results of such sampling and testing. The QC program shall set out the Developer's and its Subcontractors' procedures for inspection, sampling, testing and recording to be performed by or for the Developer.

The LA DOTD may inspect materials or equipment at the source of supply, manufacture, and/or fabrication. The Developer shall provide the LA DOTD with unrestricted entry at all times to such parts of the facilities that concern the manufacture, fabrication, production, or testing upon reasonable notice from the LA DOTD. The Developer shall detail the arrangements for the LA DOTD access to such facilities in the QC program contained in the QMP. Such inspection by the LA DOTD does not relieve the Developer of the Developer's responsibility for QA/QC, including inspection and testing.

2.11.3.3 Internal Quality Audit

The Developer shall establish and maintain documented procedures for planning and implementing internal quality audits to verify whether quality activities and related results comply with planned arrangements, and to determine the effectiveness of the quality system.

The Developer shall conduct internal quality audits in accordance with sound auditing principles. The frequency of the audits shall be appropriate to the importance and complexity of the Project, and at least on a quarterly basis. Audits shall be initiated early enough in the life of the Project to ensure effective QC during all phases. The audits shall include Project management as well as technical Work activities.

The Developer shall ensure that internal quality audits are carried out by personnel independent of those having direct responsibility for the activity being audited.

The internal quality audit program shall provide verification that the quality system is operating and being implemented as planned. Audits shall be conducted on a planned and scheduled basis, consistent with the importance of the activities being performed.

The Developer shall ensure that the results of the audits are recorded and brought to the attention of the personnel having responsibility in the area audited. The management personnel responsible for the area shall take timely corrective action on deficiencies found during the audit.

The Developer shall ensure that follow-up audit activities verify and record the implementation and effectiveness of the corrective action taken.

The results of internal quality audits shall be reviewed in management review meetings. In accomplishing management review, the results of internal audits and their attendant corrective action status shall be reviewed for adequacy and effectiveness.

The Developer shall establish and document auditor qualifications. Staff assigned auditing tasks shall be qualified accordingly, with qualification records maintained as quality

records. Auditing need not be a full-time assignment, but staff assigned auditing tasks shall have no direct responsibilities for the function or Work they audit.

The Developer shall ensure that audits are carefully planned and executed to avoid or minimize disruption of the audited activity. Results shall be provided promptly to personnel responsible for the audited activity and their management. The Developer shall develop corrective action to identify the root causes and to institute measures to prevent the types of deficiencies identified in the audit. Corrective actions shall be monitored through a review of documents, surveillance, or follow-up audits. These actions shall be conducted in a timely manner to determine the effectiveness of corrective action that is implemented. Records of corrective actions shall be kept together with the respective audit records.

The Developer shall maintain records of internal audits and make them available to the LA DOTD for inspection upon request.

2.11.3.4 External Audit

The Developer's quality process shall incorporate planned and systematic activities undertaken by an independent party from a separate company, specifying the frequency of such activities, method of correlating such activities, and how such activities are used to improve internal processes and procedures.

Section 2.12 Disadvantaged Business Enterprise Outreach and Participation Plan

The Developer shall prepare, implement, manage, and periodically update a DBE Plan. The Developer shall submit the DBE Plan for Approval in accordance with the requirements of the Contract Documents. The DBE Plan establishes appropriate controls in its management, design, construction, installation, and documentation procedures to ensure all DBE Plan requirements and related provisions, programs, laws, policies, and procedures are met and documented and coordinated with the LA DOTD commitments as governed by the requirements of the Contract Documents.

The DBE Plan shall establish and document schedules, protocols, and methods to be used in accomplishing the Work during both the DB Period and Operating Period, with an emphasis on ensuring DBE utilization as well as monitoring, reporting, corrective actions, and adaptive management. The DBE Plan shall include, at a minimum, the following:

(a) Procedures for full compliance with LA DOTD DBE commitments, considerations, and conditions of DBE approvals, applicable Law, LA DOTD DBE Program Plan, and the LA DOTD Approval requirements for all Elements of the Work throughout the Term;

(b) Procedures to enhance, to the extent possible, DBE participation;

(c) The Developer's process, structure, organization location, and methods proposed for documentation, utilization monitoring, communication and QA/QC with respect to DBE Plan compliance;

(d) The Developer's plan to take actions to keep the Project in compliance with DBE approvals, applicable Law, and the LA DOTD commitments at all times;

(e) A listing of DBE commitments, which the Developer tracks and updates in accordance with Section 24.04 of the Agreement through the Term;

(f) The Developer's outreach, mentoring, and assistance plan to encourage and support DBE utilization; and

(g) The Developer's approach to maximizing DBE participation during the Operating Period.

Section 2.13 Handback Work Plan

The Developer shall prepare and submit a Handback Work Plan that contains the methodologies and activities that will be undertaken or employed to ensure that the Handback Requirements in the Contract Documents are achieved at the end of the Term. Refer to Article 23 for plan requirements.

Section 2.14 Workforce Development Plan

The Developer shall prepare, implement, manage, and periodically update a Workforce Development Plan. The Developer shall submit the Workforce Development Plan for Approval in accordance with the requirements of the Contract Documents. The Workforce Development Plan establishes appropriate controls in its management, implementation, and documentation procedures to ensure all related provisions, programs, laws, policies, and procedures are met and documented and coordinated with the LA DOTD as governed by the requirements of the Contract Documents.

The Workforce Development Plan shall affirm the Developer's commitment to maximize opportunities for socially and economically disadvantaged individuals in the Project vicinity, particularly in surrounding underserved communities. The Workforce Development Plan shall include, at a minimum:

(a) The name of the team member(s) responsible for implementing the Workforce Development Plan, including description of their workforce development experience and a description of their roles and responsibilities on this Project;

(b) A description of how the Developer and all subcontractors will recruit their workforce including planned outreach events involving the local community. The Developer shall describe how it will work with schools, community organizations and Stakeholders to raise awareness about the workforce development program;

(c) A description of how the Developer shall provide training, registered apprenticeship opportunities, and other assistance to prospective and actual local employees to alleviate barriers to employment and to promote retention.

The Workforce Development Plan shall be updated or revised as necessary during the DB Period and the Operating Period, including as requested by the LA DOTD.

Section 2.15 Submittals

See Article 24 for list of submittals.

Exhibit 2-1 Design Review Comment Form

FORM DR

DESIGN REVIEW COMMENTS

Design Unit:			**Discipline:**		**Date:**
Type of Review (Check One)	☐ **Definitive**	☐ **Interim**	☐ **Final**	☐ **Release For Construction (RFC)**	☐ **Other**
Document Being Checked/Submittal:					
Revision Number / Date:					
Reviewer / Checker:				**Date:**	

No	Ref	Comment	Initial Disposition	Response	Final Disposition	Verifi-cation

Dispositions: A = Will incorporate; B = Will evaluate; C = Delete comment; D = Will incorporate in next submittal

Project QA File: _____

Exhibit 2-2 Design Non-Conformance Report

FORM NCR-D
DESIGN NON-CONFORMANCE REPORT

From: _____ Date: _____
(Design Quality Manager or LA DOTD's Project Manager or designee)

To: _____
(Developer's Project Manager)

Project Name: I-10 Calcasieu River Bridge SP No. H.003931/FAP No. 010121

Design Unit ID: _____

Transmittal/File No. _____ Applicable Contract Requirement: _____
(Part and Section Number)

The design Work on the referenced Design Unit is not in conformance with the noted Contract requirement for the reasons stated below (attach additional sheets as necessary):

RESOLUTION:

From: _____ Date: _____
(Signature of Developer's Project Manager)
and

From: _____ Date: _____
(Signature of Design Manager)
and

From: _____ Date: _____
(Signature of Responsible Engineer)

To: Design Quality Manager and LA DOTD's Project Manager or designee

The above noted design non-conformance has been corrected and/or resolved as indicated below (attach additional sheets as necessary):

Design Quality Manager_____
(Signature of Design Quality Manager)

Acknowledgement of Receipt: _____ Date: _____
(LA DOTD's Project Manager or Designee)
Comments by the LA DOTD's Project Manager or designee, if any, see attached.

Send copy of completed form to the Developer's Project Manager

Exhibit 2-3 Construction Non-Conformance Report

FORM NCR-C
CONSTRUCTION NON-CONFORMANCE REPORT

From: _____ Date: _____
(Construction QC Manager or LA DOTD's Project Manager or designee)

To: _____
(Developer's Project Manager)

Project Name: I-10 Calcasieu River Bridge SP No. H.003931/FAP No. 010121

Transmittal/File No.:_____ Applicable Contract Requirement: _____
(Part and Section Number)

The Work is not in conformance with the noted Contract requirement for the reasons stated below (attach additional sheets as necessary):

RESOLUTION:

From: _____ Date: _____
(Signature of Developer's Project Manager)
and

From: _____ Date: _____
(Signature of Design-Build Contractor's Project Manager)
and

From: _____ Date: _____
(Signature of Construction Manager)

To: Construction QC Manager and LA DOTD's Project Manager or designee

The above noted construction non-conformance has been corrected and/or resolved as indicated below (attach additional sheets as necessary):

Construction Quality Control Manager_____
(Signature of Construction Quality Control Manager)

Acknowledgement of Receipt: _____ Date: _____
(LA DOTD's Project Manager or designee)
Comments by the LA DOTD's Project Manager or designee, if any, see attached.

Send copy of completed form to the Developer's Project Manager

Exhibit 2-4 Design Unit Schedule

FORM DUS

DESIGN UNIT SCHEDULE

Design Unit Designation/ Code	Design Unit Description	Planned Review Stages [1]	Information/Components to be Reviewed	Planned Review Dates (Month After NTP)	Percent Complete Represented by Review
		Definitive			
		Final			100%
		Definitive			
		Final			100%
		Definitive			
		Final			100%

[1] Provide information as necessary to reflect additional interim and/or readiness for construction reviews planned between Definitive Design and Final Design Reviews.

Exhibit 2-5 DB Period Key Personnel

Key Personnel	Availability Requirements							
	Location				Time Commitment Requirements			
	Full Time	On-Site	On-Site Weekly Meetings	On-Site Within X Hours	During Design Activities	NTP Through CoC	CoC Through Final Acceptance	Contact 24/7
Principal-in-Charge								
Developer's Project Manager	X	X				X	X	X
Developer's Deputy Project Manager	X	X				X	X	X
Design-Build Contractor's Project Manager	X	X				X	X	X
Construction Manager	X	X					X	X
Operations and Maintenance Manager			X	X (6 hours)				X
Toll Collection System Manager			X		X		X (As needed)	X
Tolling Operations Manager			X (As Needed)		X		X (As Needed)	X
Design Manager	X	X			X			X
Quality Manager	X	X				X	X	X
Design Quality Manager			X	X (24 hours)	X			X
Construction Quality Control Manager	X	X					X	X
Maintenance Quality Manager				X (6 hours)				X
Environmental Compliance Manager	X	X					X	X

Key Personnel	Availability Requirements							
	Location				Time Commitment Requirements			
	Full Time	On-Site	On-Site Weekly Meetings	On-Site Within X Hours	During Design Activities	NTP Through CoC	CoC Through Final Acceptance	Contact 24/7
Hazardous Material Manager	X	X					X	X
Safety Manager	X	X			X (As needed)		X	X
Public Information Manager			X	X (24 hours)		X (As needed)	X (As needed)	X
Lead Bridge Design Engineer			X	X (24 hours)		X	X	X
Lead Project Scheduler			X			X	X	X
Lead Roadway Engineer			X	X (24 hours)		X	X	X
Lead Traffic Engineer			X	X (24 hours)		X	X	X
Lead Geotechnical Engineer			X	X (24 hours)		X	X	X
Utility Coordinator			X	X (6 hours)				X
Demolitions Manager			X	X (24 hours)			X	X
ROW Acquisition Manager			X		X			X

Exhibit 2-6 Operating Period Key Personnel

Key Personnel	Availability Requirements					
	Location				Time Commitment Requirements	
	Full Time	On-Site	On-Site Monthly Meetings	On-Site Within X Hours	3 Years During Operating Period	Contact 24/7
Principal-in-Charge						
Developer's Project Manager			X	X (24 hours)	X	X
Operations and Maintenance Manager	X	X			X	X
Toll Collection System Manager			X			X
Tolling Operations Manager	X	X			X	X
Maintenance Quality Manager			X	X (6 hours)	X	X
Environmental Compliance Manager			X	X (6 hours)		X
Safety Manager			X	X (6 hours)		X
Public Information Manager			X	X (24 hours)		X

Exhibit 2-7 Monthly Safety Report Format

FORM SAF
Monthly Safety Report Format

Developer:
_____

Period Covered (Month and Year):
_____

Name of Developer's Safety Manager:
_____

Item	Contract Total This Period	**Contract Cumulative Total**
Number of Man-Hours Worked (construction)		
Number of Lost Workday Cases (entire shift lost)		
Number of Restricted Workday Cases (partial shift lost or reassigned to "light" duty)		
Number of Cases Requiring Medical Attention		
Number of Fatalities		
Number of On-Site Safety Meetings		
Number of On-Site Equipment Accidents		
Number of Vehicle Accidents, including off-site accidents by vehicles working on the Contract		
Number of New Workers on the Site During Period		
Number of New Worker Safety Orientations		
Number of Supervisor/Foreman Safety Sessions		
Number of Site Safety Inspections		

1. Describe circumstances surrounding each lost workday and each fatality case.

2. Describe actions taken and/or planned to prevent reoccurrence.

Signed for the Developer:

_____

(Signature) Developer Representative

_____

(Printed name) LA DOTD Representative (Date)

_____

(Date)

ARTICLE 3.

ENVIRONMENTAL

Section 3.1 General Requirements

The Developer shall plan, design, construct, and implement the Project in accordance with the NEPA Documents and all Environmental Laws. The Developer shall comply with the Environmental Standards which include Environmental Approvals and Environmental Commitments, and as defined in the requirements of the Contract Documents.

The Developer shall prepare its design and conduct its construction activities such that no action or inaction on the part of the Developer shall result in non-compliance with Environmental Standards, including, but not limited to, the Clean Water Act (CWA), Sections 401, 402, and 404, as amended; the Clean Air Act, as amended; the Endangered Species Act (ESA), as amended; Section 106 of the National Historic Preservation Act (NHPA), as amended; Title VI of the Civil Rights Act, as amended; Louisiana Administrative Code (LAC) Title 33 Part V (Hazardous Waste and Hazardous Materials Management) and Part VII (Solid Waste Management); and the Rivers and Harbors Act of 1899 as amended, specifically Section 10 relating to obstructions to navigation, Section 9 relating to the location and plans of bridges and causeways across the navigable Waters of the United States, and Section 14, codified at 33 United States Code (USC) 408 and referred to as "Section 408," regarding modifications to federal projects.

This Article was prepared based on the Project description, including avoidance and mitigation measures, as described in the NEPA Documents and as modeled/assessed in supporting studies. The LA DOTD must Approve any proposed changes to the Project description and/or avoidance/mitigation measures prior to implementation. Note that changes to the Project description may cause significant schedule impacts, depending on the nature and/or extent of the proposed changes.

The Developer shall develop, execute, and maintain a Comprehensive Environmental Protection Program (CEPP) for the Work to ensure environmental compliance with all applicable Environmental Standards and this Technical Provision. The CEPP shall obligate the Developer to protect the environment and document the measures taken during the performance of the Work to avoid, minimize, and mitigate impacts on the environment from the DB Work. The CEPP shall effectively demonstrate in detail the Developer's knowledge of all applicable Project-specific Environmental Standards.

It shall also describe the processes that will be followed during the Work to comply with those Environmental Standards and the documentation required to demonstrate compliance. All monitoring and reporting activities shall be concise and consistent throughout the Term as applicable to the activities being performed and shall be in accordance with the requirements set forth in the Environmental Standards.

The CEPP shall also effectively describe the quality control and assurance measures that the Developer will implement to verify compliance of the CEPP with all applicable Environmental Standards. The CEPP shall establish a goal of zero environmental violations during the performance of all Work activities while meeting each regulatory agency's permitting and other regulatory requirements. However, should violations occur, the CEPP shall set forth detailed processes for rectifying such violations in an appropriate and timely manner. All required responses to regulatory agency enforcement actions and penalties associated with such violations are the sole responsibility of the Developer.

The Developer shall ensure Work complies with Environmental Standards throughout the Term. The Developer shall monitor and document Work activities so that documents providing evidence for compliance are available to FHWA and the LA DOTD for inspection at any time. Evidence of compliance activities may include written and photo documentation and other appropriate methods. The Developer shall report CEPP activities to the FHWA and the LA DOTD for inclusion in the Project Management Plan (PMP). The Developer shall execute the Environmental Compliance and Mitigation Plan (ECMP), as discussed in Section 3.3.2 of this Technical Provision, which lists responsible parties for Environmental Commitments detailed in the NEPA Documents as agreed to by FHWA and the LA DOTD. The Environmental Commitments table and the CEPP shall be used to track Environmental Commitments and shall be updated throughout the Project.

The Developer shall commit to using (when and where possible) environmentally sustainable practices and/or materials in the development of the Project.

The Developer shall commit to proper management of solid and hazardous waste generated in the development of the Project with a goal of maximizing reuse and recycling where possible.

Section 3.2 Project Standards and References

3.2.1 Standards

(a) The NEPA Documents (LA DOTD State Project No. H.003931, Federal Aid Project No. 0.010121);

(b) The Environmental and Governmental Approvals listed in this Technical Provision, including but not limited to:

(i) United States Army Corps of Engineers (USACE) Section 10 River and Harbors (RHA) Permit;

(ii) USACE Section 404 CWA Permit;

(iii) USACE Section 408 Permission;

(iv) U.S. Coast Guard Section 9 RHA Permit;

(v) Louisiana Department of Environmental Quality (LDEQ) Section 401 CWA Water Quality Certification (WQC);

(vi) LDEQ Louisiana Pollutant Discharge Elimination System (LPDES) Construction General Permit for Storm Water (LAR600000);

(vii) Consultation with agencies for the ESA, Fish and Wildlife Coordination Act (FWCA), Migratory Bird Treaty Act (MBTA), and Bald and Golden Eagle Protection Act (BGEPA); and

(viii) Consultation with the USFWS and NMFS for species protected under the ESA and the FWCA, Endangered Species Act and Wildlife Coordination Act.

(c) LSSRB, Supplemental Specifications and Special Provisions;

(d) LDEQ RECAP Document; 2003 or latest edition;

(e) LDEQ/LA DOTD Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook; December 2000 Edition;

(f) LAC Title 33 Environmental Quality;

(g) Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120 (Hazardous Waste Operations and Emergency Response [HAZWOPER] Training);

(h) 40 CFR Protection of Environment, as applicable;

(i) 23 CFR 772 Procedures for Abatement of Highway Traffic Noise and Construction Noise;

(j) Native American Graves Protection and Repatriation Act (NAGPRA);

(k) National Historic Preservation Act (NHPA)

(l) The LA DOTD Highway Traffic Noise Policy, July 2011; and

(m) Materials Management Plan.

3.2.2 References

(a) USACE Jurisdictional Determination; and

(b) Programmatic agreement among the Federal Highway Administration, The Louisiana Department of Transportation, the Advisory Council on Historic Preservation, and the Louisiana State Historic Preservation Officer Regarding Management of Historic Bridges in Louisiana, 2015.

Section 3.3 Comprehensive Environmental Protection Program

As part of the PMP, the Developer shall develop and implement a CEPP, applicable throughout the Term to establish the approach, requirements, and procedures to be employed to protect the environment. All component parts of the CEPP shall reflect in order of priority: impact avoidance, impact minimization, and compensatory mitigation. The CEPP shall satisfy the requirements of the applicable FHWA, LA DOTD, and Governmental Entities having

jurisdiction for the Project, including those detailed as Environmental Commitments in the Environmental Approvals and the NEPA Documents.

At a minimum, the CEPP shall include the following component parts:

(a) Environmental Management System (EMS);

(b) Environmental Compliance and Mitigation Plan (ECMP);

(i) Environmental Protection Training Plan (EPTP); and

(ii) Construction Monitoring Plan (CMP).

Amendments and updates to the CEPP as necessary to address changing conditions and environmental requirements shall be in accordance with the procedures for amendments to the PMP.

3.3.1 Environmental Management System

The EMS shall be the overarching system by which the Developer shall ensure that Environmental Standards are carried forward and reflected, as appropriate, in the design and are implemented throughout the Work. The Developer shall use the EMS to track ongoing issues, identify environmental compliances and non-compliances, and identify actions required/taken to correct any such non-compliance. The EMS shall establish a schedule for periodic CEPP review that is to be updated no less than quarterly throughout the construction period to identify changing on-site conditions. The EMS shall provide a means to track the reviews and results. At a minimum, the EMS shall require documents in the following list to be maintained on-site and available at any time for LA DOTD Review:

(a) CEPP component parts;

(b) Weekly Environmental Monitoring Reports;

(c) Investigative Work Plans (IWPs), Site Investigative Reports (SIRs), and Remedial Action Plans as necessary for Hazardous Material discovery/remediation/reporting;

(d) Mitigation or resource monitoring reports, as required by resource-specific mitigation plans;

(e) Designs for stream, wetland, and floodplain restoration and/or mitigation;

(f) Completed permit applications and permits as issued;

(g) Storm Water Pollution Prevention Plan (SWPPP) to comply with LPDES Construction General Permit for Storm Water;

(h) LPDES Monitoring Reports;

(i) Pre-Construction Inspection Report;

(j) Training documentation;

(k) Weekly Worker Health and Safety Monitoring Reports;

(l) Environmental Justice (EJ) commitments, as applicable; and

(m) Environmental Commitments Table, including permits, special provisions, conditions, and responsible parties for pre-construction and during construction.

3.3.2 Environmental Compliance and Mitigation Plan

The ECMP shall document and fully detail compliance strategies and procedures to be employed to ensure Work performance is in accordance with requirements of applicable Environmental Standards, including any changes to environmental laws, policies, and regulations throughout the Term. This Plan shall establish and/or document schedules, protocols for submission of any documentation to the LA DOTD or Governmental Entities, and methodologies to be used in accomplishing Work, with an emphasis on monitoring, reporting, Corrective Actions, and adaptive management.

The ECMP shall include a Compliance Action Plan (CAP). The CAP shall consist of a decision-making matrix that will define the triggers for initiating or re-initiating environmental compliance actions for construction, hazardous and non-hazardous waste management, transportation and disposal, and maintenance activities.

For each trigger, the CAP will identify the appropriate type or level of environmental study or other compliance action necessary to ensure the ongoing validity of and compliance with the Environmental Standards. In addition, the ECMP shall detail any mitigation required by Environmental Standards and the Developer's approach to satisfying mitigation requirements, including mitigation requirements identified after completion of the ECMP.

3.3.3 Environmental Training

The Developer shall develop and implement an EPTP that shall meet the minimum requirements set forth herein. The EPTP shall include methods and procedures to:

(a) Educate every worker to:

(i) Recognize the overall importance of environmental issues as they relate to the Project and its successful completion; and

(ii) Appreciate the various environmental sensitivities of the Project;

(b) Train appropriate staff to:

(i) Recognize environmentally sensitive resources that may be encountered during the Work;

(ii) Avoid or take appropriate action to minimize environmental impacts from the Work; and

(iii) Know the required actions, practices, and procedures regarding regulated resources;

(c) Foster the Developer's management and supervisory personnel's attitude of commitment to the Project's environmental quality;

(d) Convey to all workers, the Developer's management commitment to the Project's environmental quality; and

(e) Convey to all workers, the LA DOTD's and the Developer's commitment to zero tolerance for violations.

3.3.3.1 EPTP Scope and Content

The EPTP will educate Project personnel about the following:

(a) Overall importance of environmental protection to the Project;

(b) Compliance responsibility and Governmental Entity authority, including background and environmental issues regulatory overview;

(c) Overview of the Developer's Environmental Standards at the Project level;

(d) Worker responsibilities;

(e) Required mitigation measures; and

(f) Penalties and/or fines for violations of and nonconformance with Environmental Standards, including termination of employment.

3.3.3.2 EPTP Participation

The Developer shall require all employees involved with the environmental aspects of the Project to participate in the EPTP and shall keep accurate records documenting attendance, as well as materials presented. The Developer shall invite the attendance of all LA DOTD staff, consultants, and any individual or firm associated with the Project.

3.3.3.3 EPTP Schedule

The Developer shall submit to the LA DOTD for Review and Acceptance, course outlines containing learning objectives designed to educate personnel on the content listed above and suggested staff attendance for all anticipated training requirements throughout the Term.

The Developer shall include activities for implementation of the EPTP in the Project Baseline Schedule (PBS) per Article 2. The length of training sessions and their frequency shall be sufficient to achieve the goals set forth above. Periodic training sessions at key times (e.g., prior to construction or major maintenance in sensitive areas or construction timing restrictions to protect threatened and endangered [T&E] species) shall be used to update workers on specific restrictions, conditions, concerns, and/or requirements.

3.3.4 Construction Monitoring Plan

The CMP shall identify times, locations, and other conditions where monitoring of construction activities is to be performed to maintain and ensure compliance with Environmental Standards and the requirements of the Contract Documents. The CMP shall establish and/or document schedules, protocols, and methodologies to be used for monitoring Work with an emphasis on timely reporting, Corrective Actions, and adaptive management. The CMP shall establish reporting procedures, identify reporting requirements, and establish controls for report distribution and records retention. All Environmental Monitoring Reports shall be made available for review by FHWA, the LA DOTD, and other agencies at the LA DOTD's request. The CMP shall include procedures to ensure immediate notification to the LA DOTD should any non-compliance or violation be observed that represents an imminent danger to human health or the environment.

Prior to construction, the Developer shall inspect and validate Existing Facilities, structures, and environmentally sensitive areas identified in the NEPA Documents.

The inspection shall document the pre-construction condition of vegetation, streets, sidewalks, landscaping, residential and commercial property, historic sites and features, streams, storm drainage, parks, and infrastructure that may be affected by the Project. The purpose of the inspection is to provide a point of reference to ensure any area affected by the Work is restored to its pre-construction condition.

The Developer shall document the inspection with a Pre-Construction Inspection Report that shall include photographs, sketches, maps, and narratives clearly depicting the pre-construction conditions.

3.3.5 Personnel

The Developer, acting through the Environmental Compliance Manager (ECM), shall have available an Environmental Team (ET), as detailed in this section, to prevent, minimize, and/or correct any violation of or nonconformance with Environmental Standards. The ET may include, but not limited to the following persons: Environmental Training Staff, Environmental Compliance Inspectors (ECIs), NEPA Specialist, Archaeologist, Historian, Natural Resource Biologist or Wildlife Specialist, Water Quality Specialist (including Certified Storm Water Inspectors), Air Quality Specialist, Noise and Vibration Specialist, Hazardous and Non-Hazardous Materials and Wastes Manager, Underground Storage Tank (UST) Certified Worker, Asbestos/Lead Inspection and Abatement Worker/Supervisor, and Worksite Erosion Control Supervisor.

The ECM will determine the need for ET members based on the Work being performed, site conditions within the DB Limits and O&M Limits, and the seasonal timing of said Work.

In the CEPP, the Developer shall set forth procedures and methods for:

(a) Availability of ECM and members of the ET;

(b) Procedures for adding and removing necessary ET personnel; and

(c) ET staff response times during the Work.

Section 3.4 Performance Requirements

3.4.1 Erosion and Sediment Control

The Developer shall prepare the Erosion and Sediment Control Plan, including devices and designs for structural controls that conform to applicable LDEQ and LA DOTD regulations regarding the selection and implementation of best management practices (BMP). Developer shall submit the Erosion and Sediment Control Plan to the LA DOTD.

The Developer must inspect erosion and sediment control elements and report, as required by LDEQ, if they are properly installed and in a condition that allows the element to perform its intended function.

3.4.2 Hazardous and Non-Hazardous Solid Waste and Materials

Environmental Commitments for management of hazardous and non-hazardous materials are in the NEPA Documents.

Given the substantial number and nature of the findings of the Phase I environmental site assessment, the Developer should anticipate that during the course of the construction, Project soil and groundwater contaminated with hazardous substances, hazardous constituents, and hazardous waste may be encountered at any location within the Project area. The Developer shall prepare a Materials Management Plan in accordance with Section 2.7.7 for proper management of hazardous and non-hazardous waste and comply with the LAC Title 33, Parts V and VII and Louisiana RECAP in the investigation and remediation of contaminated soil and groundwater. In addition, the Developer shall perform a Phase II environmental site assessment in areas where soil will be disturbed to guide its efforts regarding proper, cost-effective management of contaminated soils and materials. The Phase II environmental site assessment shall include delineation of limits and concentration of each particular Hazardous Material contamination.

Except as otherwise set forth in the Contract Documents, the Developer may re-use and recycle solid waste to the extent feasible and practical to reduce the amount of solid waste that must be transported off-site for disposal. The Developer shall segregate and minimize industrial non-hazardous solid waste and hazardous solid waste to reduce the volume of these materials that must be transported off-site for disposal.

The Developer will be responsible for conducting air monitoring to detect volatile organic compounds (VOC) during ground-disturbing activities. The Developer will provide appropriate personal protective equipment (PPE) for workers.

The Developer shall also prepare a Project-specific health and safety plan consistent with OSHA 1910.120 and in accordance with the Safety Plan in Article 2 to protect workers from exposure to contamination along with appropriate training, monitoring, and record keeping during the construction activities.

The Developer shall ensure that Environmental Commitments generated by additional studies or consultation associated with ongoing field surveys and/or by public and/or agency comments on the NEPA Documents are incorporated into the EMS. These studies/consultations may include ethylene di-chloride (EDC), vinyl chloride, or other contaminants present in soil, sediment, surface water and/or groundwater. The Developer should note that the extent of EDC in soil and groundwater is based on available data and the delineated areas, EDC Area 1 and EDC Area 2, as shown on the DB Limits Drawing.

The delineated areas, EDC Area 1 and EDC Area 2 do not imply that hazardous constituents of concern (COC) will not be encountered in other areas of the Project corridor. Given the numerous Recognized Environmental Conditions identified in the Phase I environmental site assessment Report and the long history of petrochemical operations north and south of the I-10 corridor, the potential exists that other hazardous COC may be encountered in both soil, sediment, surface water, and/or groundwater outside of the areas delineated as EDC Area 1 and EDC Area 2.

3.4.3 Noise

Noise barrier systems were evaluated to abate noise impacts, but no noise barrier systems are anticipated within the DB Limits. However, noise barrier systems may be required if the Developer's design solution and subsequent noise analysis necessitates the installation of noise barriers.

The Developer shall comply with all State and local sound-control and noise-level rules, regulations, and ordinances during construction. The Developer shall be responsible for and obtain any variances, special permits, or approvals from any Governmental Entities that may be required, including public notification and involvement.

The Developer shall be responsible for implementing mitigation/abatement measures for operation of heavy equipment and pile driving during construction. The Developer shall address traffic noise mitigation as described in the NEPA Documents and follow the LA DOTD Highway Traffic Noise Policy (July 2011). The Developer shall also meet the requirements of 23 CFR 772 and the FHWA guidelines for the assessment of highway traffic-generated noise.

3.4.4 Vibration

The LADOTD will make a vibration complaint form available to adjacent landowners upon request. The Developer shall make appropriate adjustments to construction methodology to mitigate vibration impacts. See Section 7.4.

3.4.5 Air Quality

The Developer will be responsible for implementing dust control measures and ensuring that all construction equipment complies with Clean Air Act emissions standards and testing requirements.

3.4.6 Lighting

The Developer shall shield residential areas from construction site lighting if nighttime work is required.

3.4.7 Recreational Properties

Environmental Commitments are included in the Section 4(f) Evaluation and the NEPA Documents.

3.4.8 Historic and Archaeological Resources

Environmental Commitments are included in the MOA, Programmatic Agreement Regarding Management of Historic Bridges, Section 4(f) Evaluation, and the NEPA Documents.

The LA DOTD has fulfilled its responsibilities related to Section 106 of the NHPA for the historic Calcasieu River Bridge and the US-90 Bridge through the Programmatic Agreement Regarding Management of Historic Bridges. The Programmatic Agreement includes the potential sale and relocation of these structures. The Developer will be responsible for verifying and incorporating these relocation activities in the Project Schedule.

The Norris Point site, as shown on the DB Limits and O&M Limits, is present in the proposed Project's ROW. The Developer shall comply with the requirements outlined in the MOA.

If evidence of an unanticipated cultural resource property is encountered during the Work, the Developer shall immediately cease Work and contact the LA DOTD to initiate post-review discoveries. The Developer shall undertake appropriate measures to protect the site from further intrusion until an appropriate evaluation of the site can be made. Work shall not resume in the area until the Developer receives Approval.

If unmarked burial sites or undocumented potential human remains are found during construction, the Developer shall immediately cease Work and notify the law enforcement agency with jurisdiction over the site, the LA DOTD, and the State Archaeologist not more than 24 hours after the discovery. The Developer shall comply with the requirements of the Louisiana Unmarked Human Burial Sites Preservation Act (LRS 8:680-681).

The Developer shall follow the instructions of the coroner or, if the site is over 50 years old, the instructions of the Secretary of the Department of Culture, Recreation, and Tourism, through the Division of Archaeology; State Archaeologist; or designated cultural resource specialist, regarding disposition of the human remains, burial artifacts, and the site. The Developer will assist the LA DOTD with the required Section 106 documentation, as well as any other required documentation of the site.

3.4.9 Environmental Justice Communities

In addition to the Environmental Commitments for EJ communities listed in the NEPA Documents, the Developer shall ensure that Environmental Commitments generated by additional studies or consultation prompted by public and/or agency comments on the NEPA Documents are incorporated into the EMS.

3.4.10 Migratory Birds

Tree clearing, if any, will be performed outside the nesting season. The existing bridges will be inspected for active nests prior to any construction/demolition. If active nests are observed on the bridge, bridge construction and demolition activities will be stopped until the nests are inactive. If the survey is done in advance of the nesting season, steps could be taken to discourage the birds from returning prior to the nesting season.

3.4.11 Environmental Wells

The LA DOTD will develop a groundwater monitoring plan and perform groundwater monitoring in the vicinity of the EDC plume in accordance with the NEPA Documents. The Developer shall identify all existing monitoring wells, piezometers, and recovery wells within the DB Limits and specify those that conflict with the proposed infrastructure. The Developer's design and construction solution shall accommodate the existing location of all recovery wells within the DB Limits, which shall remain operational and in place for the duration of the Work. The Developer shall identify the location of the wells that are in conflict with the proposed infrastructure in the Definitive Design submittal (See Section 2.4.10). The Developer shall identify the schedule for abandonment for wells in conflict with the

proposed infrastructure in the Definitive Design and shall coordinate with the LA DOTD on the work in accordance with Section 9.4.7.

The Developer shall coordinate with the LA DOTD on the location of additional monitoring wells that may be required by the groundwater monitoring plan. The Developer shall afford LA DOTD or LA DOTD's contractor(s) adequate opportunity for delivery of their materials, well installation, and monitoring and sampling, and shall properly integrate, incorporate and/or coordinate its Work with theirs. The Developer shall take due account of all such work and shall arrange its methods of operation and storage of materials and equipment to avoid interference with the work to be performed.

The Developer should assume that all environmental wells that are not impacted by the proposed infrastructure shall remain operational and in place for the duration of the Work. The Developer shall take all necessary precaution to protect all wells from damage due to the Work.

Section 3.5 Environmental Approvals

3.5.1 Responsibilities Regarding Environmental Studies

The environmental studies conducted in support of the Environmental Standards were conducted based on the Project description, including avoidance and mitigation measures, as described in the NEPA Documents

Any proposed changes to the Project description, including avoidance/mitigation measures, must receive Approval prior to implementation. Note that changes to the Project description may cause significant schedule impacts, depending on the nature and/or extent of the proposed changes. See Section 8.05(b) of the Agreement.

3.5.2 New Environmental Approvals

The LA DOTD will be responsible for conducting all NEPA documentation prior to the ROD. If additional Environmental Approvals are required after the ROD, the Developer shall be responsible for providing design information and additional environmental studies on behalf of the LA DOTD. The Developer shall follow the LA DOTD policies and procedures when conducting these activities for the Project.

In addition, the Developer shall be responsible for providing design information and responding to comments from Governmental Authorities having jurisdiction over the Project with regard to the new Environmental Approvals. These comments may include comments submitted to the Governmental Authorities from the public.

3.5.3 Environmental Permits

For this Project, the Developer shall obtain all Environmental Approvals including:

(a) USACE Section 404 CWA Permit;

(b) LDEQ Section 401 CWA WQC;

(c) USACE Section 10 RHA Permit;

(d) USACE Section 408 Permission;

(e) U.S. Coast Guard Section 9 RHA Permit;

(f) U.S. Coast Guard Navigational Lighting Approval; and

(g) LDEQ LPDES Construction General Permit for Storm Water.

Any studies or information required for the permit application process in addition to the studies provided by LA DOTD shall be the responsibility of the Developer.

For any construction subject to permits, the Developer shall provide copies of all permits to the LA DOTD prior to beginning construction.

Replacements for existing permits on account of ATCs shall be borne by the Developer and the Work shall be designed and constructed to provide service at least equal to that offered by the existing permits.

Section 3.6 Submittals

See Article 24 for list of submittals.

ARTICLE 4.

ROW ACQUISITION SERVICES

Section 4.1 General Requirements

The Developer shall provide all Project ROW Acquisition Work for the Project, including appraisals, appraisal reviews, specialty valuations, and acquisition and relocation services necessary for the Project, except for any responsibilities explicitly retained by the LA DOTD. The Developer shall identify the parcels to be acquired as soon as possible and shall be responsible for performing all activities needed to secure the required ROW. The LA DOTD shall retain final authority for Approval of appraisals, appraisal reviews, and specialty valuation reports; Approval of just compensation; Approval of relocation benefits; and Approval of administrative settlements. The LA DOTD shall retain responsibility for instituting expropriation proceedings, payment of just compensation and relocation benefits, and the acquisition of any ROW required for the Railroad Relocations and mitigation for the navigation interest impacted by the reduction in vertical clearance of the I-10 Calcasieu River Bridge included in the NEPA Documents.

Section 4.2 Project Standards and References

4.2.1 Standards

(a) Title 23 USC Part 710;

(b) Title 49 USC Part 24;

(c) Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended;

(d) Title 9, Title 19, Title 38, and Title 48 of the Louisiana Revised Statues;

(e) Louisiana Constitution Article I, Section 4;

(f) Louisiana Constitution Article VI, Section 21;

(g) Louisiana Constitution Article VII, Section 14;

(h) Louisiana Administrative Code, Title 70, Part XVII – Real Estate;

(i) LA DOTD Real Estate Operations Manual;

(j) LA DOTD Title Research Manual; and

(k) LA DOTD Location and Survey Manual, Addendum A.

4.2.2 References

(a) LA DOTD Acquisition Forms and Letters Templates: http://www.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Real_Estate/Pages/Acquisition_Forms_Letters.aspx;

(b) LA DOTD Relocation Forms and Letters Templates: http://www.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Real_Estate/Pages/Relocation.aspx

Section 4.3 Performance Requirements

The following performance measures shall be used to evaluate success of the Project approach and implementation:

(a) A design that fulfills project goals while minimizing the acquisition of additional ROW;

(b) Timeliness of acquisitions relative to the Project's critical path;

(c) Amicable acquisitions that avoid expropriation;

(d) Appropriate documentation of all Project ROW Acquisition Work; and

(e) Interaction with property owners in a positive, professional manner.

Section 4.4 Developer Requirements

No later than 60 days after NTP, the Developer shall prepare and submit a preliminary ROW cost estimate, a ROW Acquisition Services Plan and a Conceptual Stage Relocation Plan for Approval prior to commencing ROW activities. The ROW Acquisition Services Plan will be in accordance with Title 23 CFR Part 710.309, which includes, in part, a prioritized appraisal, acquisition, and relocation strategy, as well as check points for Approval; a detailed appraisal plan identifying all consultant services to be performed for each parcel; a detailed organizational chart identifying the Persons who will perform the Project ROW Acquisition Work; a written description of the Developer's approach to acquiring the necessary ROW for the Project; a flow chart of the necessary step-wise activities/processes; a schedule showing the anticipated start/duration/finish for individual Project ROW Acquisition Work activities that incorporates reasonable timeframes for the orderly relocation of residences and businesses; and any other information the Developer deems necessary to adequately describe the Project ROW Acquisition Work. The Developer shall provide assurance to the LA DOTD that the necessary ROW has been acquired prior to beginning physical construction on the acquired parcels. The Developer shall use LA DOTD's project tracking and quality control system, showing appraisal, acquisition, and relocation status of all parcels. All Subcontractors retained to perform Project ROW Acquisition Work shall meet the minimum requirements stated in the LA DOTD Right-of-Way Contract Services – Minimum Requirements document.

4.4.1 Title Research Reports

The Developer shall select an abstractor that meets the LA DOTD's minimum qualifications for title research consultants. Title work shall consist of obtaining the necessary title research reports in accordance with the LA DOTD Title Research Manual.

The term "Title Research Report" is defined as a report of the ownership of the required property with addresses, acquisition data, assessment and tax information, description of the property, conveyances of full ownership, conveyances of other rights (e.g., servitudes, (easements), leases, restrictions, etc.), existing ROW, recorded plats, and a copy of the last

acquisition in the chain of title. One title research report shall be obtained for each ownership interest.

The original and one electronic copy of each Title Research Reports shall be furnished to the LA DOTD's Real Estate Section concurrently with the Final ROW Map Submittal.

4.4.2 Property Survey

The property survey shall consist of all investigations, studies, and survey data required for the preparation of a Base ROW Map and shall be based on the same survey control as the topographic survey. The property survey shall show all surveyed property lines and existing ROW with ties to the Project centerline. Upon completion of the property survey, the Developer shall notify the LA DOTD, in writing, and provide the following:

(a) ASCII file listing coordinates and descriptions of all found monuments;

(b) PDF copy of all documents (plats, maps, etc.) used to determine property line locations;

(c) PDF copy of title take-offs or Title Research Reports used to determine property line locations;

(d) MicroStation DGN file of the property survey plat; and

(e) PDF file of the property survey plat.

4.4.3 Title Updates

Title updates shall be performed for Title Research Reports that are more than six months old. These updates shall be used in the preparation of the Final ROW Maps and by the Developer in acquiring title to the ROW required for the Project.

4.4.4 ROW Maps

ROW map Works shall consist of all services required to complete the Base and Final ROW Maps, including the following:

4.4.4.1 Base ROW Map

The Base ROW Map shall show the Project centerline, all existing ROW, limits of construction, appropriate topography (residences, commercial buildings, structures, etc.), parcel line locations and ownerships, and required taking lines (with ties to the Project centerline). Individual parcel metes and bounds descriptions and precise area calculations are not required for the Base ROW Map; however, the approximate area of each required parcel and remainder area shall be determined and shown on the Base ROW Map. These maps shall be in the same standard format and shall form the basis for the Final ROW Map.

All Work to develop the Base ROW Map shall be performed in accordance with the standards provided in LA DOTD's Location and Survey Manual, Addendum A. Surveying standards and methods deviating from those provided in LA DOTD's Location and Survey Manual, Addendum A may be used if Approved. The Base ROW Map and one copy of each

Title Research Report used to prepare the Base ROW Map shall be submitted at approximately 60% design completion for Review and Comment. Base ROW Map deliverables shall be:

(a) Two full-size paper copies of the Base ROW Map; and

(b) PDF copy of the Base ROW Map, designated as "H.003931 60% Base Map yymmdd.PDF"

4.4.4.2 Final ROW Map

The Final ROW Map shall be the Base ROW, updated to include revisions, including revisions resulting from LA DOTD's Review and Comment, parcel descriptions by metes and bounds, parcel acquisition blocks, parcel areas, remainder areas, and Lambert coordinates on Project centerline at both ends of every map sheet, points of curvature, points of intersection, and points of tangent of Project centerline curves. Final ROW Map deliverables shall be:

(a) The original matte films;

(b) MicroStation DGN file of the Final ROW Map;

(c) PDF copy of the Final ROW Map named "H.003931_FINAL ROW Map_yymmdd.PDF";

(d) PDF copy of each Title Research Report with the subject parcel number(s) listed in the upper right-hand corner and named "H.003931_Parcel X.PDF"; and

(e) ASCII file named "H.003931.IN," containing the LA DOTD Coordinate Geometry (COGO) program input commands for creating parcel descriptions suitable for use by the LA DOTD's Real Estate Section.

4.4.5 Title Take-Off

If full title research reports are not available at the time of property survey field work, the Developer shall submit a report of the deed of ownership for each current property owner, and all survey documents, (plats, maps, etc.) associated with the current ownership deed for each parcel of required ROW. A title take-off may be obtained for an individual Design Unit, if necessary, to expedite commencement of field work. The title take-off is not considered a part of the Title Research Report and may be performed by the surveyor.

4.4.6 Appraisals

The Developer shall retain Appraisers that meet LA DOTD minimum qualifications to perform appraisal services Work. The Developer shall provide two independent appraisals of each parcel that is valued over $30,000 and one independent appraisal for properties valued less than $30,000 and where clear title of property cannot be amicably acquired solely for reasons unrelated to the amount of just compensation to be paid, such as unopened successions, absentee defendants, or partial interests. The Appraisers retained by the Developer shall:

(a) Perform a field review of the Project ROW;

(b) Meet with the Review Appraiser and the Relocation Assistance Agent(s) and conduct an on-site inspection of each parcel to determine the items that are to be considered realty and the items that are to be considered personalty;

(c) Identify the appropriate appraisal format (i.e., Form A, Form B or Form C);

(d) Verify that Title Research Reports and ROW maps agree in detail;

(e) Mail a property owner notification letter to each property owner;

(f) For each parcel, schedule an on-site meeting with the owner(s) and any other Persons having a financial interest in the property;

(g) Document all meetings;

(h) Define the appraisal problem for each parcel by identifying:

(i) Fixtures to be valued;

(ii) Property rights to be acquired;

(iii) Objective of the appraisal;

(iv) Definition of value;

(v) Date of value; and

(vi) Any limiting conditions.

(i) Develop a preliminary survey and appraisal plan that identifies:

(i) The data required;

(ii) Sources of available data; and

(iii) Time constraints for each parcel.

(j) Collect general economic data including:

(i) Market data;

(ii) Financial and economic trends; and

(iii) Location data, including regional, community, and neighborhood to be analyzed in determining the before value for the subject property.

(k) Collect specific appraisal property data for each parcel including:

(i) Title;

(ii) Zoning;

(iii) Physical characteristics of the site;

(iv) Improvements data;

(v) Sales data;

(vi) Listings;

(vii) Costs; and

(viii) Rental data.

(l) Determine the highest and best use for subject property with supporting analyses and justification. If the highest and best use is determined to be different from the current use, promptly provide analyses and justification to the Review Appraiser (if applicable) and the LA DOTD supporting the determination;

(m) Determine value approaches that are relevant to the subject property;

(n) Appraise the subject property;

(o) Value the land in the area of acquisition;

(p) Value the improvements in the area of acquisition;

(q) Reconcile the approaches to value on improved properties;

(r) Analyze acquisition and its effect on the remainder;

(s) Estimate the loss in value to the remainder, if any, resulting from the acquisition of the parcel;

(t) Identify the cost of any cures that will eliminate or mitigate damages;

(u) Estimate additional compensation to which the owner is entitled;

(v) Compose an appraisal report in an Approved format (i.e., Form A, Form B, or Form C) that corresponds to the land use type of the property being appraised and to the complexity of the appraisal assignment;

(w) Sign and date the appraisal report;

(x) Submit the appraisal report to the Developer electronically;

(y) Compile and submit a master binder, which is to include:

(i) Inspected comparable sales;

(ii) Verified comparable sales; and

(iii) Photographs of comparable sales;

(z) Provide revisions and updates to appraisal reports as directed;

(aa) Request ROW staking services, as needed;

(bb) Testify in legal proceedings on behalf of the LA DOTD;

(cc) Provide information requested by the LA DOTD; and

(dd) Perform any other tasks or activities necessary to the performance of appraisal services Work as directed and/or Approved.

4.4.7 Appraisal Review

The Developer shall select a Review Appraiser to provide appraisal review services who meets the LA DOTD's minimum qualifications. Appraisal review shall consist of the following tasks:

(a) Review the Title Research Reports, construction plans, Final ROW Maps, and improvement data for correctness, completeness, and usability;

(b) Report any discrepancies to the ROW Acquisition Manager;

(c) Meet with the Appraiser(s) and Relocation Assistance Agent(s) to conduct an on-site inspection of each parcel and determine the items to be considered realty and the items which are to be considered personalty;

(d) Collaborate with the Appraiser(s) to determine the appropriate appraisal format;

(e) Collaborate with the Appraiser(s) in the determination of the need for specialty valuation experts;

(f) Submit an appraisal plan for Approval;

(g) Schedule an on-site meeting after Approval of the appraisal plan and the specialty valuation experts;

(h) Verify that reports completed by specialty or other valuation experts:

  (i) Comply with Law;

  (ii) Comply with the LA DOTD's policies and procedures;

  (iii) Meet the scope of work requirements;

  (iv) Contain verification of data, zoning, code requirements, and other items affecting compensation determination; and

  (v) Address all comments provided by the LA DOTD;

(i) Verify that reports completed by Appraisers:

  (i) Comply with Law;

  (ii) Comply with the LA DOTD's policies and procedures;

  (iii) Meet the scope of work requirements; and

  (iv) Contain verification of data, zoning, code requirements, and other items affecting compensation determination; and

  (v) Address all comments provided by the LA DOTD;

(j) Review Appraiser reports for consistency;

(k) Review the content of reports pertaining to damages or additional compensation to verify justification and underlying analyses;

(l) Consult with the Relocation Assistance Agent(s) to avoid any duplication of compensation or payments;

(m) Accept or reject reports submitted by specialty or other valuation experts;

(n) Accept or reject Appraiser reports;

(o) Prepare a written report (review sheet) that:

  (i) Identifies the appraisal reports reviewed;

  (ii) Documents findings and conclusions; and

  (iii) Memorializes the actions taken during the review process;

(p) Notify the ROW Acquisition Manager of any information that necessitates changes to the scope of valuation services required for the Project;

(q) Recommend just compensation;

(r) Electronically transmit appraisal reports and review sheets to the LA DOTD;

(s) Testify in legal proceedings on behalf of the LA DOTD;

(t) Make corrections and provide information as requested by the LA DOTD;

(u) Receive electronic requests for report revisions from the LA DOTD;

(v) Submit revised reports to LA DOTD in PDF format;

(w) Submit all Approved appraisal reports and Approved appraisal review reports to the LA DOTD in PDF format.

4.4.8 Specialty Valuation Services

The Developer shall retain Specialty Valuation Consultants that meet the LA DOTD's minimum qualifications to perform the specialty valuation Work. Specialty valuation services include: construction cost estimation services, Business Valuation services, forester services, petroleum engineer services, mineral valuation services, and agriculture valuation services. Any specialty valuation services required are Project-specific and shall be documented in the detailed appraisal plan, and shall be subject to the following requirements:

(a) All specialty valuation reports shall be submitted in pdf format;

(b) All specialty valuation reports, except for Business Valuation reports, shall be transmitted concurrently to the Review Appraiser and the LA DOTD for Review and Comment;

(c) The LA DOTD shall communicate directly to the Review Appraiser regarding edits to specialty valuation reports;

(d) Specialty valuation reports shall be Approved prior to inclusion in appraisal reports;

(e) Business Valuation consultants shall transmit Business Valuation reports in PDF format directly to the LA DOTD for Approval;

(f) The LA DOTD shall request revisions to specialty valuation reports, as necessary;

(g) Approved Business Valuation reports shall be transmitted directly to the Appraisers and Review Appraiser;

(h) Business Valuation reports, and other specialty valuation reports containing confidential or proprietary information, including copies thereof, shall not be retained by any Developer Party and must be immediately deleted or destroyed upon Approval of the associated appraisal report; and

(i) Approved specialty valuation reports shall be provided to Persons with a financial interest in the subject property, upon request.

4.4.9 Just Compensation

The Developer shall study and examine each appraisal and shall certify to the LA DOTD Office of ROW that the appraisals were prepared in accordance with the LA DOTD Office of ROW Operations Manual. The Developer shall submit the appraisals and appraisal reviews to the LA DOTD Appraisal Division for review and establishment of the recommended estimated just compensation amount. The LA DOTD Office of ROW will determine the estimated just compensation amount and will notify the Developer of the estimated just compensation amount to be used for negotiations.

4.4.10 Right of Way Acquisition

The Developer shall retain ROW Acquisition Agent Consultants that meet the LA DOTD's minimum qualifications. The ROW Acquisition Agent Consultants shall be responsible for the following Elements of Project ROW Acquisition Work:

4.4.10.1 Document Preparation

The Acquisition Agent Consultant shall prepare a negotiation packet for each affected ownership. Each negotiation packet shall include the LA DOTD informational brochure entitled "Acquisition of Right-of-Way and Relocation Assistance," an estimate of just compensation letter, a summary of just compensation, reduced copies of the Final ROW Map and construction plan sheets that affect the parcel, and a draft copy of the sale instrument. In the case of multiple ownership interests, individual packages will be prepared for each owner by the Acquisition Agent Consultant. The packages will be sent to the LA DOTD ROW Supervisor for Approval.

4.4.10.2 Negotiations

The Acquisition Agent Consultant will initiate negotiations in person with affected owners within ten days of receipt of the estimate of just compensation for a parcel. Each owner shall be provided a minimum of 30 days to review the offer. All owners shall receive an estimate of just compensation letter and summary of just compensation. All contacts made with landowners shall be fully documented in the Acquisition Agent Consultant's log in the LA DOTD tracking system. All requests made by landowners for meetings shall be accommodated by the Acquisition Agent Consultant. The Acquisition Agent Consultant shall submit all counteroffers made by landowners to the LA DOTD for Approval.

4.4.10.3 Mortgage Certificates, Property Taxes, and Fees

The Acquisition Agent Consultant shall order mortgage certificates covering the properties to be acquired in accordance with LA DOTD procedures. For those properties for which a mortgage certificate is required, all encumbrances shall be cleared. Property taxes shall be cleared for each ownership, ensuring that the LA DOTD will be vested with clear, unencumbered title to the property. The Developer shall be responsible for payment of all recording fees and mortgage cancellation fees. Any additional fees required by individual mortgage companies and financial institutions relative to clearances will be paid by the LA DOTD.

4.4.10.4 Recordation

The Acquisition Agent Consultant shall record all documents (i.e., Acts of Sale, Servitudes, etc.) in the office of the Clerk of Court.

4.4.10.5 Payment

The Acquisition Agent Consultant shall prepare the required documentation for payment to the property owner. Letters and check receipts will be prepared, and delivery of payments shall be made by the Acquisition Agent Consultant.

4.4.10.6 Expropriation

In those instances where amicable negotiations are unsuccessful, an expropriation file shall be prepared by the Acquisition Agent Consultant and include the ownership certificate, description of the parcel, correspondence, the Acquisition Agent Consultant's log, and a letter explaining the reasons for termination of negotiations.

4.4.10.7 Improvement Control

The Developer shall perform all improvement control activities specified in Improvement Control (Section 3) of the LA DOTD Real Estate Operations Manual.

4.4.11 Relocation and Advisory Services

The Developer shall submit a Conceptual Stage Relocation Plan based upon the Definitive Design and shall provide a ROW Stage Relocation Plan and other data necessary to begin negotiations and relocation assistance services with the affected relocatees. The Developer shall retain a Relocation Assistance Agent that meets LA DOTD's minimum qualifications to perform the relocation assistance services. The Relocation Assistance Agent shall prepare a relocation package for each relocatee. The package shall identify the needs of the relocatee for consideration in determining appropriate relocation assistance. The packages will be sent to the LA DOTD for Approval. All contacts with relocatees shall be fully documented in a Relocation Contact Log in the LA DOTD's tracking system. All appropriate documentation as detailed in Relocation Assistance (Section 4) of the LA DOTD Real Estate Operations Manual shall be included.

The Developer shall also be responsible for the following:

(a) Ensuring that utility service is made available to all occupied properties at all times until relocation is completed;

(b) Providing adequate access to all occupied properties to ensure emergency and personal vehicle access; and

(c) Ensuring that no open burning will occur within 1,000 feet of an occupied dwelling.

Section 4.5 LA DOTD's Real Estate Responsibilities

The Developer shall coordinate with the LA DOTD Real Estate Administrator, Charles McBride, or his designee for this Project. The LA DOTD shall attend monthly meetings with the Developer to review and discuss the ROW Acquisition Plan and the progress of ROW acquisition and make qualified personnel available to answer questions and give advice regarding ROW issues.

4.5.1 Review and Approval Times

Approval and Review and Comment of all Submittals shall be in accordance with the following review times:

Table 4-1. LA DOTD Submittal Review Times

LA DOTD Submittal Review Times		
LA DOTD Required Review	LA DOTD Review Time (Business Days)	Maximum Number of Submittals per Week*
Acquisition Services Plan Review	10	1
Title Research Report Review	10	10
Title Update Review	5	10
Relocation Plan Approval	10	1
Appraisal Plan Review	10	1
Review of Appraisal/Review Appraisal/Specialty Valuation Reports	15	10 (Reports)
Just Compensation Review	3	10
Counteroffer Review	3	10
Review/Approval of Payment	10	10
Property Survey (including Title Take-Off, if needed)	20	N/A
Base ROW Map	20	N/A
Final ROW Map	20	N/A
Negotiation Packet	10	10
Expropriation File	10	10

*Please note, the LA DOTD Review Times are based on the maximum number of Submittals per week. If the maximum number of Submittals per week is exceeded, the review time will be adjusted accordingly. Submittals include new and corrected appraisals, review appraisals, and specialty valuation reports. Once revised Submittals are received, the review time starts over.

4.5.2 Expropriation Proceedings

When acquisition negotiations fail for a parcel, the LA DOTD shall commence expropriation proceedings, provided that:

(a) the Developer promptly notifies the LA DOTD of its determination that eminent domain is necessary to acquire a particular parcel;

(b) the Developer has complied with all requirements of Law and the Contract Documents, including the Uniform Act, that are prerequisites to the exercise of the LA DOTD's eminent domain powers; and

(c) the Developer has delivered to the LA DOTD Approved expropriation packages.

For scheduling purposes, the Developer may estimate having access to the property in accordance with the timelines as described below in Table 4-2.

Table 4-2. Third-Party Timelines

Activity	Number of Days
Negotiation Period	90 Business Days from making of initial offer to acceptance
Expropriation (unoccupied property)	30 Business Days from filing of expropriation to Developer property access
Expropriation (residential or business)	180 Business Days from signing order of expropriation to Developer property access
Relocation (residential) (if not expropriated)	If not expropriated, 150 Business Days from acceptance of offer to Developer property access
Relocation (business) (if not expropriated)	150 Business Days from acceptance of offer to Developer property access

4.5.3 Payment of Just Compensation

Process documentation for payment of:

(a) the cost of land, improvements, damages, and administrative adjustments paid to landowners for the acquisition of parcels whether acquired by deed, settlement, or eminent domain; and

(b) relocation assistance to Persons eligible for such payments under Law, including moving expenses, supplemental housing payments, reestablishment payments, and fixed payments.

4.5.4 LA DOTD Retained ROW Acquisitions

LA DOTD will obtain the following parcels in accordance with Table 4-3. The Developer shall coordinate with LA DOTD to define the parcels in Table 4-3.

Table 4-3. LA DOTD Retained ROW Acquisitions

ID	Owners Name	Tax ID
1	Kansas City Southern Railway Company	00748307
2	Kansas City Southern Railway Company	00748544

3	Kansas City Southern Railway Company	N/A
4	Union Pacific Railroad Company	N/A
5	Mayo Realty Co LLC	00386006
6	Unknown (former Hilma city street)	N/A
7	Unknown (former Goos city street)	N/A
8	Unknown (former Magnolia city street)	N/A
9	ConocoPhillips Company	00691356
10	ConocoPhillips Company	00691356
11	ConocoPhillips Company	00691356
12	Kile Enterprises LLC	00859788

See graphics depicting the above included in the Reference Documents as "LA DOTD Retained ROW Acquisition Parcels".

Actual limits of acquisitions will be as depicted in the Final ROW Maps developed for the Work as required for the Railroad Relocations.

Section 4.6 Submittals

See Article 24 for list of submittals.

ARTICLE 5.

UTILITIES

Section 5.1 General Requirements

The Developer shall design, prepare plans, and perform all Utility Adjustment work within the Project Limits. The Developer shall consider the potential impact of Utilities on the Project during design and is responsible for verifying all information pertaining to existing Utilities and gathering such additional information as may be required to determine conflicts between Utilities and the Project. Utilities may remain in their existing locations within the Project ROW if doing so will not adversely affect the construction, operation, safety, maintenance, or use of the Project in accordance with LA DOTD's policies and procedures.

The Developer may choose to design around existing Utilities where not restricted elsewhere; otherwise, the Developer will be responsible for resolving any Utility conflicts so there is no loss of service during the Term.

Utilities shall not be mounted to structures, except as follows:

(a) ITS, roadway lighting, and tolling conduits may be externally mounted to structures; and,

(b) Fiber optic cable conduits that cross the Calcasieu River and Lake Charles may be externally mounted to the New Bridge only.

In all cases, external structure mounted conduits must be hidden from view (e.g., hidden by the exterior girder) and shall be aluminum or galvanized steel.

Section 5.2 Project Standards and References

5.2.1 Standards

(a) 23 USC 109(I) (1);

(b) CFR Titles 23 & 49;

(i) Title 23, Part 123;

(ii) Title 23, Part 645, Subpart A;

(iii) Title 23, Part 645, Subpart B;

(iv) Title 49 Volume 3, Parts 186 to 199;

(c) The Louisiana Underground Utilities and Facilities Damage Prevention Law, La. R.S. 40:1479.11, *et seq.*;

(d) La. R. S 48:381;

(e) Louisiana Administrative Code, Title 70 – Transportation, Part II – Utilities;

(f) "ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data."; CI/ASCE 38-02.;

(g) LA DOTD Utilities Relocation Forms: http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Road_Design/UtilitiesRelocation/Pages/default.aspx; and

(h) LA DOTD Utility Permit Form: http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Road_Design/Right-of-Way/Documents/Utility%20Permit.pdf.

5.2.2 References

(a) LA DOTD Utilities Relocation Website:http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Road_Design/UtilitiesRelocation/Pages/default.aspx ; and

(b) LA DOTD Right-of-Way (ROW) Permits Website: http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Road_Design/Right-of-Way/Pages/default.aspx

Section 5.3 Performance Requirements

The Developer's responsibilities shall include the following:

(a) Develop designs that avoid or minimize Utility conflicts;

(b) Ensure the continued safe operation and structural integrity of all Utilities located within the Project ROW

(c) Develop the Utility conflict matrix;

(d) Develop Utility adjustment concept plans;

(e) Submit Utility Tracking Reports;

(f) Execute Utility Relocation Agreements (URAs) with Utility Owners;

(g) Coordinate applications for Government Approvals with Utility Owners; and

(h) Ensure Utility Adjustments are performed in a manner that avoids or minimizes disruption to Utility services.

5.3.1 Design Requirements

5.3.1.1 Utility Identification

The Developer shall identify all Utilities in conflict or otherwise affected by the Project and bears sole responsibility for ascertaining all pertinent details of Utilities affected by the Project, whether located on private property or within existing public right of way.

5.3.1.2 Communications with Utility Owners

The Developer shall be responsible for planning, scheduling, and documenting all meetings and communications with Utility Owners as necessary to resolve Utility conflicts and to ensure that Utility Adjustments for the Project are accomplished in accordance with the Project Schedule and the requirements of the Contract Documents. The LA DOTD may participate in such meetings if requested by a Utility Owner or the Developer.

5.3.1.3 Utility Conflict Matrix

The Developer shall prepare and maintain a Utility conflict matrix in a form that list all Utilities in conflict with or potentially affected by the Project. The Utility conflict matrix shall contain the following information for each Utility listed thereon:

(a) The Utility Owner name and a unique identification number for tracking;

(b) A brief description of the Utility by size and type;

(c) The Utility's location based on Project control data or by station and offset;

(d) The proposed disposition of the Utility and the date such disposition was Approved by the LA DOTD and/or Utility Owner;

(e) The Person responsible for performance of Utility Adjustment Work;

(f) The nature of the Utility Owner's existing right of occupancy (e.g., prior rights, permit) for such Utility;

(g) The status of any Governmental Approvals or URAs needed for Utility Adjustment Work;

(h) The status of Utility Adjustment Work performance, including percentage complete; and

(i) Any additional information required to ascertain the status of Utility Adjustment Work for the Project.

The Utility conflict matrix shall be sortable so that the Developer may report the data by the scheduled start date and the scheduled completion date for Utility Adjustments. The Developer shall incorporate investigation results into the Utility conflict matrix.

5.3.1.4 Utility Adjustment Concept Plan

The Developer shall prepare Utility Adjustment concept plans that include the following information for each Utility in conflict with, or otherwise affected by the Project:

(a) A description of the Utility that identifies the type(s) of facilities, the nature and approximate location of the conflict or other impact, and any other pertinent information;

(b) Identification of the Utility Owner, including contact information;

(c) Designation of Utilities that will remain in their existing locations;

(d) A description of each anticipated Utility Adjustment that identifies the nature of the adjustment, the planned location for any relocated facilities, and the anticipated timeline for performance; and

(e) Other relevant information regarding Utilities and Utility Adjustments.

The Developer shall color-code the Utility Adjustment concept plans and utilize a scale that clearly depicts all required information. Subject to Approval, the Developer may prepare one set of utility adjustment concept plans for a group of Utilities or Utility Adjustments. The Developer shall prepare the Utility Adjustment concept plans in both tabular and plan formats. Each Utility Adjustment concept plan must include the Design Documents used to identify the conflict, clouded designation of conflict location(s), and any applicable design details.

5.3.1.5 Utility Coordination

If Utility Adjustments are required, the Developer shall communicate, cooperate, and coordinate with Utility Owners, the LA DOTD, Governmental Entities, and any potentially affected third parties, as necessary to perform Utility Adjustment Work. The Developer shall coordinate any necessary Utility Adjustments with the Utility Owner to determine which of the following three options will be utilized:

(a) The Utility Owner designs and performs the Utility Adjustment;

(b) The Utility Owner provides the design for the Utility Adjustment and the Developer performs the Utility Adjustment;

(c) The Developer designs the Utility Adjustment and, upon approval of the design by the Utility Owner, performs the Utility Adjustment.

The Developer shall be responsible for ensuring Utility Adjustments are designed and performed to the Utility Owner's satisfaction. The Developer shall ensure the Utility Owner accepts the Utility Adjustment Work and the responsibility for maintenance and upkeep of the Utility once the Utility Adjustment Work is complete.

The Developer shall install a common duct in which all backbone fiber optic cable running along I-10 would be relocated. The common duct bank shall reside within LA DOTD ROW. The common duct bank shall be constructed, and all fiber optic cables shall be relocated to the common duct bank prior to initiation of any Project Work that could impact the existing fiber optic infrastructure. The Developer shall coordinate with each Utility Owner for location of handholds/junction boxes and their respective requirements. See Section 20.4.4.

Where the existing conduits cross the Calcasieu River and Lake Charles, the Developer may utilize those conduits as part of the required common duct bank, as long as there are no conflicts with the Work, and the conduits are suitable for reuse. New conduits may cross Calcasieu River and Lake Charles on the New Bridge as long as they are hidden from view (e.g., hidden by the exterior girder). External structure mounted conduits on the New Bridge shall be aluminum or galvanized steel.

5.3.1.6 Utility Relocation Agreements and Government Approvals

The Developer shall be responsible for coordinating all efforts to accomplish Utility Adjustments required for the Project, including preparation of URAs and applications for Government Approvals. Subject to Approval and the exceptions stated in this Technical Provision, the Developer shall be responsible for entering into URAs with Utility Owners and ensuring the Government Approvals required to perform Utility Adjustments are obtained.

When a conflict between the Project and a Utility is identified, the Developer shall coordinate with the affected Utility Owner to determine whether the Utility Owner has prior rights in the Utility's existing location. If the Utility Owner has prior rights, a URA is necessary to compensate the Utility Owner for costs associated with the Utility Adjustment. Each URA required for the Project shall specify the cost distribution and responsibilities for performance of the Utility Adjustment Work and shall be executed between the Developer and the affected Utility Owner. All URAs shall be Approved prior to execution.

URAs are required for any Utility Adjustment affecting a Utility Owner with prior rights to any portion of a Utility's existing location within the Project ROW. URAs are not required for Utility Owners who do not possess prior rights.

The Developer shall be responsible for coordinating all efforts in the relocation of any utility located within the Project ROW that are in conflict with the construction of the project, including the verification of existing utilities, and preparing all necessary Utility Relocation Agreements (URAs) and permits for such relocation as described below. Subject to LA DOTD's approval, the Developer shall be responsible for (a) entering into all necessary URAs with the Utility Owners and securing execution (by the Utility Owner and the Developers authorized representative) of all such URAs, and (b) securing execution (by the LA DOTD and the Utility Owner) of all such permits.

The Developer shall obtain the following as applicable:

(a) A URA is required whenever a utility line located within LA DOTD right-of-way is required to be relocated and the Utility Owner has prior rights. In this agreement, the cost distribution and responsibility of the work to be done shall be specified. If the Utility Owner relocates their Utility outside of the LA DOTD right-of-way, the agreement shall also specify the timing of the relocation;

(b) If a Utility is required to be relocated and relocates their Utility outside of the LA DOTD right-of-way and the Utility Owner does not have prior rights, the Developer shall obtain a statement of work from the Utility Owner, indicating the timing of the relocation;

(c) Regardless whether a Utility Owner has prior rights or not, an LA DOTD Right-of-Way utility permit with appropriate supplement(s) is required whenever a utility line is to be relocated inside the LA DOTD right-of-way; and

(d) For all Utilities remaining in their existing locations within the Project ROW, the Developer shall obtain a written statement of no conflict from the Utility Owner declaring that the Work will not affect the Utility, which will remain in place.

For all Utility Adjustments, the Developer is responsible for coordinating with the Utility Owner to ensure performance of the Utility Adjustment Work with the Utility Owner and obtaining Governmental Approvals and Utility Adjustment Plans. LA DOTD ROW utility permits are required for any Utility relocated or installed within LA DOTD ROW.

5.3.1.7 Utility Adjustment Costs

Utility Adjustment design and construction costs for Utilities with prior rights shall be the responsibility of LA DOTD. Utility Adjustment design and construction costs for Utilities without prior rights shall be the responsibility of the Utility Owner.

The following requirements apply to Utility Adjustments costs:

(a) The LA DOTD shall reimburse the Developer by Change Order for Utility Adjustment costs incurred pursuant to Approved URAs executed in accordance with Section 5.3.1.6.

(b) Replacements for existing Utilities shall be designed and constructed to provide service at least equal to that offered by the existing Utilities, unless the Utility Owner specifies a lesser replacement. Betterments to Utilities are not included in the Work, and shall not be reimbursed by the LA DOTD, regardless of type or location.

(c) If the Developer agrees to perform the work on behalf of the Utility Owner, as set forth in 5.3.1.5(b) or 5.3.1.5(c), and the Utility Owner does not possess prior rights, the Utility Owner is responsible for the relocation costs and the Developer shall enter into a separate third-party agreement with the Utility Owner to obtain payment for the work.

5.3.1.8 Documentation

Utility Adjustment Plans, whether furnished by the Developer or by the Utility Owner, must be signed and sealed by a Professional Engineer. The Developer is responsible for providing written documentation to the LA DOTD of all Utility Relocation Agreements, Utility Adjustment Plans, and Government Approvals. The Developer shall include the locations of all Utilities within the Project ROW in the final Construction Documents, including any out-of-service Utilities that have been abandoned in place.

5.3.2 Construction Requirements

(a) Scheduling Utility Adjustment Work

All Utility Adjustments must be accounted for in the Project Schedule. Except as provided in this Utilities Technical Provision, no additional compensation shall be provided to the Developer for any Utility Adjustment Work or delays caused thereby.

(b) Existing Utility Protection

The Developer shall ensure the continued safe operation and structural integrity of all Utilities located within the Project ROW. Prior to beginning any Work involving excavation, underground demolition, or other activities that may impact subsurface Utilities, the Developer shall contact Louisiana One Call by calling (225) 275-3700 or (800) 272-3020, or

by facsimile transmission to (225) 272-1967. The Developer shall obtain Emergency contact information from, and establish Emergency procedures with, each Utility Owner affected by the Project. In In the event of damage to a Utility, the Developer shall immediately notify the affected Utility Owner(s) and coordinate the performance of repairs.

(c) Utility Removal Work

The Developer shall coordinate all arrangements for Utility facilities to be abandoned in place with the affected Utility Owner, the LA DOTD, affected landowners, and Government Entities, as appropriate. Absent exceptional circumstances, Utility facilities shall be abandoned in place only when:

(i) The Utility facilities are located under an existing roadway whose pavement will remain, and the abandoned facilities will not conflict with any Element of the Project or other Utilities;

(ii) Removing the Utility facilities would require excavation that would compromise any Element of the Project or other Utilities; and/or

(iii) Removing the Utility facilities would render a roadway unsafe.

The Developer shall be responsible for performing all Utility Adjustment Work necessary to resolve conflicts between the Project and any Utilities that were abandoned in place as of the Agreement Date.

Requirements pertaining to Utilities are also included in Article 9.

(d) Utility Service Maintenance

The Developer shall ensure all Utilities remain fully operational during all phases of construction, except as specifically allowed and approved in writing by the Utility Owner. The Developer shall schedule Utility Adjustment Work to minimize any interruption of service, while at the same time meeting the Project Schedule and taking into consideration seasonal demands.

(e) As-Built Plans

The Developer shall ensure As-Built Plans are prepared for all Utility Adjustments.

Section 5.4 Federal Utility Requirements

The Project is subject to 23 CFR Part 645 Subpart A (including its requirements as to plans, specifications, estimates, charges, tracking of costs, credits, billings, records retention, and audit) and FHWA's associated policies. The Developer shall comply (and shall require the Utility Owners to comply) with 23 CFR Part 645 Subpart A and all associated FHWA policies applicable to Utility Adjustment costs robe eligible for reimbursement from any federal financing or funding. The Developer acknowledges, however, that: (a) it is not anticipated that the Developer will be eligible for FHWA reimbursement of any Utility Adjustment outlays, and (b) the Developer will not have any right or claim to any funds received from FHWA or other

Federal sources that the LA DOTD may receive on account of Utility Adjustments. All costs incurred by the Developer in coordinating Utility Adjustments and ensuring compliance with 23 CFR Part 645 Subpart A and associated FHWA policies are included in the Design-Build Price.

Section 5.5 Sampson Street Pipe Racks

Utility Adjustments for the Project will include the relocation of Pipe Racks located in the Sampson Street area that are currently routed under the Existing Bridge, over Railroad tracks, over and under Sampson St., over Isle of Capri, and over I-10 ramps. The LA DOTD is continuing coordination efforts related to these Utility Adjustments. Relocation of these Pipe Racks will not be the responsibility of the Developer. However, the Developer shall coordinate with the LA DOTD and Pipe Rack owners on the design, construction, and scheduling of the Project to facilitate the relocation of the conflicting pipe chases and accommodate the temporary roadway improvements, which are required to facilitate traffic operations during the work. The Developer's final design shall accommodate the relocated Pipe Rack. The Developer's construction phasing and staging shall accommodate existing Pipe Racks until they are removed by others.

The Developer shall afford Pipe Rack contractor(s) opportunity for their delivery of their material and execution of their work, and shall properly integrate, incorporate and/or coordinate its Work with theirs. The Developer shall take due account of all such work and shall make reasonable accommodation to arrange its methods of operation and storage of materials and equipment, so as to avoid interference with the work to be performed.

Section 5.6 Submittals

See Article 24 for list of submittals.

ARTICLE 6.

RAIL

Section 6.1 General Requirements

The Developer shall coordinate with Railroads, the LA DOTD, and all applicable Governmental Entities as necessary to facilitate design, construction, maintenance, and operation of the Project where it affects the railroad ROW.

Section 6.2 Railroad Relocations

Both UP and KCS tracks between Sampson Street and the Calcasieu River will require relocation for the construction of the Project (Railroad Relocations). The LA DOTD shall be responsible for coordination with the UP and KCS railroads for the Railroad Relocations. The LA DOTD is in negotiations with UP and KCS regarding the final design and construction of the Railroad Relocations and will acquire ROW to accommodate the Railroad Relocations. The LA DOTD will also be responsible for any modifications to the Existing Bridge required to accommodate the Railroad Relocations.

The Developer shall afford Railroad contractor(s) opportunity for their delivery of their material and execution of Railroad Relocations, and shall properly integrate, incorporate and/or coordinate its Work with theirs. The Developer shall take due account of all such work and shall make reasonable accommodation to arrange its methods of operation and storage of materials and equipment, to avoid interference with the work to be performed.

Section 6.3 Project Standards and References

6.3.1 Standards

(a) American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering;

(b) AREMA Communications and Signals Manual;

(c) MUTCD;

(d) UP BNSF Railway Guidelines for Railroad Grade Separation Projects;

(e) KCS Guidelines for the Design and Construction of Railroad Overpasses and Underpasses;

(f) All applicable UPRR and KCS standards;

(g) LA DOTD BDEM and BDTMs;

(h) LA DOTD Roadway Design Procedures and Details Manual;

(i) LSSRB, Supplemental Specifications and Special Provisions;

(j) LA DOTD Standard Plans and Special Details;

(k) MOU between the LA DOTD and UP (once executed); and

(l) MOU between the LA DOTD and KCS (once executed).

6.3.2 References

(a) FHWA Railroad-Highway Grade Crossing Handbook;

(b) AREMA Practical Guide to Railway Engineering;

(c) UP White Paper – Best Practices: Coordinating with Union Pacific in Alternative Delivery Projects;

(d) UP Guidelines for Temporary Shoring;

(e) AASHTO Guide Specifications for Bridge Temporary Works; and

(f) AASHTO Construction Handbook for Bridge Temporary Works.

Section 6.4 Railroad Agreements

The Developer shall comply with the requirements set forth in the agreement with LA DOTD and the Railroads for the Railroad Relocations. Any deviation from existing agreements between the LA DOTD and the Railroads for the Project that is desired or required shall be Approved prior to implementation by the Developer.

Other than Railroad Relocations, the Developer shall be responsible for obtaining the required Railroad Agreements as required for Railroad-related work. The Developer is also responsible for abiding by LA DOTD Railroad Agreements.

Section 6.5 Developer Requirements

Except for the Railroad Relocations, the Developer shall obtain all approvals, permits, and agreements, including any associated fees as required prior to any Work impacting each Railroad being performed. The Developer is responsible for coordinating the Work with the operating railroad or lessor of that line/property and for developing and processing all agreements, including any associated fees. The following agreements may be required based upon each Railroad's requirements:

(a) Preliminary Engineering Agreement – Railroads may require preliminary engineering agreements in order to proceed with the development and review of plans. This agreement authorizes reimbursement to the Railroad for preliminary engineering and estimating performed by the Railroad or their consultant(s). The Developer shall prepare the template agreement and shall be responsible for authorized reimbursements to the Railroad.

(b) Construction and Maintenance Agreement – The Developer shall prepare Construction and Maintenance Agreements, including all required exhibits, to be executed between the Railroad, the Developer, and the LA DOTD. The Developer shall prepare all the documents required to obtain each Construction and Maintenance Agreement, including preparation of the plans and specifications and estimates.

If the Railroads requires a metes and bounds survey to accompany the Construction and Maintenance Agreement, the Developer shall be responsible for this survey. Construction and Maintenance Agreements shall be between the appropriate Railroad and the Developer.

(c) Temporary Construction Servitudes – The Developer shall be responsible to obtain any required temporary construction servitudes, including preparation of all documents required to obtain the temporary servitude and any associated cost for the Railroad. This requirement may be stipulated in and be a part of the Construction and Maintenance Agreements. Temporary Construction Servitudes shall be between the appropriate Railroad and the Developer.

(d) Right of Entry Agreements – In order to enter the Railroad ROW to perform the Work, the Developer shall secure a Railroad Right of Entry Agreement and shall coordinate the arrangements of the necessary agreements directly with the Railroad. Right of Entry Agreements, as required, shall be between the appropriate Railroad and the Developer. The Developer shall meet all Right of Entry requirements, including Railroad liability and insurance requirements, at the sole cost of the Developer.

All executed agreements shall be submitted in their entirety to the LA DOTD.

No Work shall commence on railroad property without approved Right of Entry documentation. The Developer shall comply with all construction requirements and specifications set forth in the Railroad Agreements.

Where applicable, the design and installation of all Railroad warning devices and traffic signals shall be coordinated with the appropriate Governmental Entities and the Railroads.

The Developer shall arrange with the Railroad for railroad flagging protection as required by the Railroads. The Developer shall comply with the Railroad requirements for contractor on-track safety training prior to performing Work or other activities on the operating Railroad's property. The Developer's final design shall accommodate both relocated Railroad spur tracks. The Developer's construction phasing and staging shall accommodate both existing Railroad spur tracks until they are removed by others. The Developer shall afford Railroad contractor(s) opportunity for their delivery of their material and execution of their work, and shall properly integrate, incorporate and/or coordinate its Work with theirs. The Developer shall take due account of all such work and shall arrange its methods of operation and storage of materials and equipment to avoid interference with the work to be performed.

Section 6.6 Coordinating Design

The Developer shall coordinate the Project design with the appropriate Railroads. This coordination shall include meetings, plan submissions, and resolution of pertinent commentary provided by the Railroads, and any other obligation under relevant Railroad agreements. Plans shall fully consult each Railroad in such a manner as necessary to ensure compliance with all standards. The Railroad has final approval rights for the design of Work affecting its facilities.

The Developer shall complete final Plans for the Railroad crossings, including any new crossings of the relocated Railroad. For any structure above a railroad ROW, the Developer shall design for a minimum vertical clearance equal to the stated vertical clearance provided by the Railroad owner plus 6 inches. The minimum vertical clearance shall be provided across the entire railroad ROW. Additionally, pursuant to the Railroad design guideline manuals listed in Section 6.3, no bridge piers are allowed within railroad ROW. The Plans shall be dated, signed, and sealed by a Professional Engineer.

Section 6.7 Submittals

See Article 24 for list of submittals.

ARTICLE 7.

GEOTECHNICAL

Section 7.1 General Requirements

The Developer shall perform all geotechnical investigations and all geotechnical design, including but not limited to, the Geotechnical Planning Report, subsurface investigation and data analysis, foundation design, retaining wall design, fill/embankment designs, reinforced soil slope design, soil improvement, and soil cut slopes. The Developer shall be responsible for providing any additional geotechnical investigation, data analysis, or geotechnical engineering and design as required for the evaluation of the subsurface conditions along the alignment and for the design concept submitted for this Project.

Section 7.2 Project Standards and References

7.2.1 Standards

(a) LSSRB, Supplemental Specifications and Special Provisions;

(b) LA DOTD Standard plans and Special Details;

(c) LDEQ correspondence regarding limitations on construction in the EDC contamination area;

(d) AASHTO LRFD Bridge Design Specifications;

(e) AASHTO LRFD Bridge Construction Specifications;

(f) LA DOTD Geotechnical Engineering Design Guide 8;

(g) FHWA Manual on Earth Retaining Structures, Section 3.2; and

(h) The following FHWA Geotechnical Engineering Circulars (GEC):

(i) FHWA GEC 008 - Design and Construction of Continuous Flight Auger Piles;

(ii) FHWA GEC 010 - Drilled Shafts: Construction Procedures and Load and Resistance Factor Design (LRFD) Design Methods;

(iii) FHWA GEC 011 - Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes: Volumes I and II;

(iv) FHWA GEC 012 - Design and Construction of Driven Pile Foundations: Volumes I, II, and III; and

(v) FHWA GEC 013 - Ground Modification Methods Reference Manual: Volumes I and II.

7.2.2 References

(a) FHWA Geotechnical Publications, Manuals, and Guidelines refer to the following web link:

https://www.fhwa.dot.gov/engineering/geotech/index.cfm;

(b) LA DOTD's Geotechnical Publications, Manuals, and Guidelines refer to the following web link:

http://wwwsp.dotd.la.gov/Inside_LADOTD/Divisions/Engineering/Pavement_Geotechnical/Pages/Forms-And-Downloads.aspx;

(c) LA DOTD BDEM and BDTMs;

(d) National Cooperative Highway Research Program (NCHRP) Report 507 - LRFD for Deep Foundations; and

(e) Geotechnical Data Report.

Section 7.3 Performance Requirements

7.3.1 Subsurface Investigation and Data Analysis

The Developer shall conduct additional investigations in accordance with the scope specified herein and any additional investigations the Developer deems necessary to establish the geotechnical conditions and to perform all geotechnical and foundation design and analyses.

The Developer 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 LA DOTD neither assumes nor implies any other 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 to be performed by the Developer shall supplement the data provided by the LA DOTD. Additional subsurface investigation requirements not covered in the AASHTO Specifications are presented in Table 7-1.

Existing investigation borings may be combined with the additional investigations to comply with the requirements presented in Table 7-1. Cone penetration test soundings may be considered as an alternative to all borings where the Developer considers it appropriate, provided that a sufficient number of borings are performed at cone penetration test sounding locations to develop a reliable correlation between the boring and the cone penetration test results. The Developer shall provide the results of investigations to the LA DOTD in a memo as follows:

(a) The logs of borings;

(b) Cone penetration test soundings;

(c) The field records of any field investigations; and

(d) Laboratory test results.

Table 7-1. Minimum Requirements for Additional Investigations

Geotechnical Feature	Minimum Investigation Locations
Roadways	**New Construction:** The Developer is required to submit a subgrade soil survey with samples taken approximately every 1,000 feet along the new roadway alignment. The depth of each boring should be at least 8 feet below the finished roadway elevation or natural ground, whichever is greater, with additional testing requirements for areas of cut/fill greater than 5 feet, which shall be analyzed as embankment and cuts. Allowable sampling methods include undisturbed Shelby tube sampling, as well as disturbed auger and direct-push sampling methods. The different layers of the soil strata shall be identified every foot or strata break at the discretion of the lab engineer of record using the AASHTO classification system and the following tests: Atterberg limits, sieve analysis, hydrometer tests, percent organics, moisture content, as well as consolidation testing, pH, and resistivity when applicable. **Overlays:** The Developer is required to submit corings with samples taken approximately every 1,000 feet along the alignment to a depth of 4 feet below the existing roadway and no less than 2 feet below the bottom of the base course, whichever is greater. The different layers of the soil strata shall be identified every foot or strata break at the discretion of the lab engineer of record using the AASHTO classification system and the following tests: Atterberg limits, sieve analysis, hydrometer tests, percent organics, moisture content, and pH and resistivity when applicable.
Embankments and Cuts Exceeding 5 feet in Height	The spacing between borings shall be no greater than 200 feet. At critical locations, a minimum of three borings in the transverse direction shall be provided to define the existing geological conditions for stability and settlement analysis.
Culverts	A minimum of one boring at each culvert with embankment height greater than 5 feet. Additional borings shall be provided for long culverts or in areas of erratic subsurface conditions.

Note: Except as specified herein, the LA DOTD and AASHTO standards shall be followed with respect to planning and performing subsurface exploration programs. For geotechnical laboratory testing methods, ASTM standards shall be preferred, followed by AASHTO and then the LA DOTD.

7.3.2 Design Requirements

Maximum pile loads, foundation embedment, and geotechnical design for Project structures shall conform to AASHTO LRFD Bridge Design Specifications. The Developer shall consider axial resistance, settlement, down drag, lateral deformation, and scour. The Developer shall not use screw piles or existing foundations. Timber piles and spread footing foundations shall not be used for bridge foundations but may be considered for support of retaining walls.

The LRFD method shall be used to design the foundations. Foundation types that are not included in the AASHTO Specifications may be allowed, if the Developer provides the properly calibrated resistance factors for Louisiana soils based on the calibration methods presented in NCHRP 507. All backup of the calibration shall be submitted for Approval. The LA DOTD may reject the resistance factors at its sole discretion.

7.3.2.1 EDC Contamination Area

See Article 13 for EDC requirements.

7.3.2.2 Deep Foundations

Concrete for drilled shafts shall be in accordance with Class S Concrete as specified in the LA DOTD Standard Specifications, except that the coarse aggregate shall be size 67, but with a maximum size of ¾ inch.

The center to center spacing of drilled shafts and piles shall be at least three times the larger diameter (drilled shaft or pile) of the adjacent foundation elements. This spacing requirement applies to both between the new foundations and between the new and existing foundations.

7.3.2.3 Axial Resistance

Deep foundations shall be analyzed for axial compression and uplift resistance, using static analysis methods in accordance with AASHTO Specifications. Resistance factors in the AASHTO Specification shall be superseded by Table 7-2.

Table 7-2. LRFD Strength State Resistance Factors

Method	AASHTO LRFD Factor	Locally Calibrated Factor
Tomlinson's α-method	0.35	0.50
Nordlund/Thurman Method	0.45	0.50
FHWA Modified Gates	0.40	0.50

The effectiveness of base preloading, if used for drilled shafts, shall be demonstrated through bi-directional load tests conducted prior to and following preloading operations.

If a resistance factor of 0.65 is used to design driven piles, an Indicator Pile shall be installed for each design reach/site condition (referred to as "site" in AASHTO). Indicator

Piles shall be tested with dynamic monitoring and signal matching prior to ordering production piles for a given site.

7.3.2.4 Settlement

The design of deep foundations shall consider the total and differential settlement tolerances of the proposed structures. Settlement and differential settlement shall not exceed the design tolerances, or the tolerances specified in the Bridge Design and Evaluation Manual (BDEM), whichever is less. Settlement induced by the deep foundation group in the subsoil shall be evaluated. In addition, settlement of the individual deep foundation elements shall also be evaluated.

7.3.2.5 Wave Equation Analysis

The constructability of a pile design and the development of pile-driving criteria shall be performed using a wave equation computer program.

7.3.2.6 Deep Foundation Testing and Monitoring

Field testing shall be performed for deep foundations in accordance with AASHTO LRFD and as established in the Geotechnical Design Report. All foundation testing shall be performed by the Developer, using testing personnel or Subcontractors, qualified and experienced in performing and interpreting the required foundation testing. A foundation testing plan shall be submitted for Approval. The foundation testing plan shall include a Monitor Pile as the first pile driven for each substructure unit (bent or footing) for the entire New Bridge.

Integrity testing consisting of Crosshole Sonic Logging or Thermal Integrity Profiling shall be performed on all drilled shafts. The testing shall be performed in accordance with the LSSRB.

7.3.3 Retaining Wall Design

Retaining walls may consist of mechanically stabilized earth (MSE) walls, cast-in-place concrete cantilever walls, or other types of walls meeting the requirements of Article 13. Lightweight fill and/or ultra-lightweight fill is permissible, subject to LA DOTD Approval.

MSE walls used for the Project shall include only those wall systems on the list of qualified wall systems shown on the LA DOTD Pavement and Geotechnical Services Section web page noted below:

http://wwwsp.dotd.la.gov/Inside_LADOTD/Divisions/Engineering/Pavement_Geotechnical/Pages/Forms-And-Downloads.aspx

Design of MSE walls shall be in accordance with the LA DOTD's Geotechnical Engineering Design Guide 8.

Global stability calculations for retaining walls shall be signed and sealed by a Professional Engineer who is also the Responsible Engineer for the retaining wall design. Global stability calculations shall be submitted to the LA DOTD in compliance with this Technical Provision.

All walls retaining soil loads and remaining in place after the end of construction shall be designed as permanent retaining walls.

7.3.3.1 Design Loads

The loads used in the design of permanent Work shall be in accordance with the requirements of the relevant design codes and standards, except where herein modified or augmented.

Loads due to soils or backfill shall be derived using the maximum values of the saturated densities. Only where it can be clearly demonstrated that the fill is well drained and will remain well drained in the future shall any reduction in the degree of saturation be considered. The submerged densities shall be used for soil unless the location is above the standing water table.

Lateral earth pressures shall be estimated on the basis of the anticipated movement of the structure. For yielding retaining structures, Rankine's active pressure theory shall be used. However, for unyielding structures, where the movement of the structures is not sufficient to mobilize active pressures, and/or where compacted backfill is placed behind the structure, the lateral pressure on the structures shall be evaluated on the basis of anticipated movements, site-specific subsurface conditions, and construction methods. The pressure on unyielding structures shall not be less than at-rest pressure. The design of the retaining structures shall be based on the maximum lateral pressures that will develop behind the structures.

Hydrostatic pressure induced by the groundwater table, when present, shall be included in the lateral pressures. Additional hydrostatic pressures and variations in groundwater conditions due to flooding and rapid drawdown conditions shall be considered in the design of the retaining structures.

7.3.3.2 Shallow Foundations

Shallow foundations for retaining walls are permitted where there is a suitable bearing stratum near the surface. Shallow foundations shall not be used where scour or erosion could undermine or adversely impact the performance of the foundation.

Analyses shall be conducted to estimate the total and differential soil settlement, induced by the foundation loads. The analyses shall consider immediate settlement for granular soils and immediate settlement, primary consolidation, and secondary compression for cohesive soils. Shallow foundations shall be designed to maintain wall settlements (total and differential) within the applicable tolerances specified in Section 3.2 of the FHWA Manual on Earth Retaining Structures.

7.3.4 Fill/Embankment Design

Excavations and embankment design and construction shall be in accordance with the requirements of Section 203 of the LSSRB. Embankment cross sections shall be in accordance with the requirements of the Roadway Technical Provision. Lightweight fill and/or ultra-lightweight fill is permissible, subject to LA DOTD Approval.

7.3.4.1 Slope Stability

Particular attention shall be given to the design and construction of all soil and rock embankment fill and cut slopes, whether temporary or permanent. The analyses shall consider the effects of deterioration and loss of soil shear strength due to local climatic and construction conditions.

Slope stability analyses shall be conducted for all slopes using Spencer's method. Critical non-circular failure surfaces shall be considered. All critical groundwater, seepage, and drainage conditions shall be considered. The minimum factors of safety for static load conditions shall be 1.3 for non-critical slopes and 1.5 for critical slopes (at bridge abutments, wingwalls, and existing structures) for permanent embankment slopes. The minimum factor of safety for a rapid drawdown condition shall be 1.1.

For non-permanent embankment and earthwork slopes, the minimum safety factor shall be 1.3 under static load conditions. Results of the analysis shall be documented in the Geotechnical Design Report and submitted for Approval.

7.3.4.2 Settlement

Analyses shall be conducted to estimate the soil settlement induced by the embankment loads. Immediate settlement in granular soils and both immediate and consolidation settlements in cohesive soils shall be considered. Embankments shall be designed to keep estimated total post-construction settlements limited to 1 inch during the design life of the pavement section. Differential settlement both within fill sections and across fill/structure interfaces shall be limited to 1/300. Embankment settlement shall be monitored and assessed during the duration of the DB Period to verify that the specified settlement criteria will be achieved.

For embankment heights exceeding 10 feet, settlement monitoring points shall be established at a minimum horizontal spacing of 500 feet along the roadway length. Results of the analysis shall be documented in the Geotechnical Design Report and submitted for Approval.

7.3.5 Reinforced Soil Slope Design

The design procedures and considerations for reinforced soil slopes (RSS), if incorporated in design, shall conform to FHWA GEC 011.

7.3.6 Soil Improvement

Soil improvement methods, if needed, shall be compatible with the subsurface conditions, Project Schedule, installation methods, and proposed geotechnical elements. Soil improvement methods shall be implemented according to FHWA GEC 013.

The performance of all ground improvement techniques shall be verified with a pre-production field testing program developed to demonstrate that the proposed methods and design will provide the ground improvement level required to satisfy the performance requirements specified herein. Results of the analysis shall be documented in the Geotechnical Design Report.

Section 7.4 Vibration Monitoring and Control

The Developer shall comply with the vibration monitoring and reporting requirements of Sections 804.11 and 804.12 of the LSSRB. The design shall protect adjacent structures and utilities against damage due to the construction of the Work. Vibration monitoring shall be performed in accordance with the requirements in Article 3. The extent of the monitoring program will depend on the size and type of the facilities.

Construction activities may produce vibrations (such as pile-driving, vibratory compaction, pavement-breaking, or operation of heavy construction equipment). Various structures are located close to the proposed Work. All construction activities must be conducted to preclude damage to adjacent structures and limit impacts to occupants.

Where construction activities are proposed that produce vibrations that could impact adjacent structures, the Developer shall establish a vibration monitoring plan and submit for Review and Comment. Such plan shall include details for monitoring during vibration-producing activities including all pile-driving. The vibration monitoring plan shall delineate areas where vibration-producing construction activities will take place and propose monitoring locations. The plan shall be appropriate to the site-specific features of the Project.

Before beginning any vibration-producing construction activities, the Developer shall:

(a) Contact nearby residents and others who may be affected;

(b) Conduct preconstruction surveys identifying structures susceptible to vibration damage;

(c) Establish vibration control threshold limits that will preclude damage (cosmetic cracking) to adjacent structures and interference with sensitive equipment, however, in no case shall the peak particle velocity, as measured in the vicinity of the pipe racks, exceed 1 inch per second; and

(d) Set up vibration monitoring program.

Section 7.5 Settlement Monitoring and Control

Limiting values of movement (horizontal and vertical) and distortion on each structure and utility within the zone of influence of the Work shall be established and submitted for Review and Comment. Instrumentation shall be used to monitor all preload embankments to verify the effectiveness and duration of the surcharge loading.

The Developer shall monitor settlements of structures, utilities, and other features within the zone of influence of constructed embankments and retaining walls. For embankments,

the zone of influence shall be defined as a zone extending a minimum horizontal distance (H) from the toe of the embankment, where (H) is the height of embankment.

For retaining walls, the zone of influence shall extend from the toe of the footing to a minimum distance of twice the height of wall.

Section 7.6 Materials and Construction Requirements

Materials used to construct the Project shall meet the minimum requirement as specified in the LA DOTD specifications, policies and procedures, guidelines, and manuals. Testing of materials shall be performed by personnel possessing the requisite LA DOTD materials' certifications.

The Developer shall submit for Approval any blasting plan(s). Reports

7.6.1 Geotechnical Planning Report

The Developer shall prepare a Geotechnical Planning Report for the Project and submit the Geotechnical Planning Report within the approved interim Project Schedule for Review and Comment. The Geotechnical Planning Report shall include a detailed method statement describing the general philosophy and methods of design and construction and 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 will be chosen to match selected construction methods, construction details, and the soil and groundwater environment for the site.

The Developer shall provide an outline of the equipment and methods proposed for foundation and earthwork construction and demonstrate how they are consistent with the design approach and assumptions. The outline presented shall demonstrate compliance with the Geotechnical Technical Provision requirements and shall demonstrate an understanding of the ground conditions and Project constraints.

The Developer shall submit the following technical information with the Geotechnical Planning Report:

(a) Description of geology and various ground types to be encountered along the alignment;

(b) A description of the geotechnical information that was collected and analyzed in developing the interpretation used to develop the Developer's proposal and pricing for the Project;

(c) Assessment of the engineering properties of all site-related soil types, including the expected average and range of soil strengths and deformation properties;

(d) Recommended design parameters (preliminary) for all site-related soil types;

(e) Anticipated ground behavior and categorization of ground during excavation, filling, and foundation and retaining structure construction;

(f) Support of excavation and groundwater control considerations;

(g) A narrative describing how any interpretation was derived from the geotechnical data;

(h) Consideration for, discussion of, and rationale for protection of existing structures, bodies of water, and environmentally or historically sensitive areas; and

(i) 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 to develop technically and environmentally acceptable and durable foundations, cut and fill slopes, retaining structures, and geotechnical designs for the Project.

7.6.2 Geotechnical Design Reports

The Developer shall prepare a Geotechnical Design Report and submit the Geotechnical Design Report within the approved Project Schedule for Review and Comment. Individual Geotechnical Design Reports may be submitted for specific design elements or structures. Each Geotechnical Design Report must be submitted for Approval prior to construction of any geotechnical elements included in the report. The Geotechnical Design Report shall discuss all aspects of the required geotechnical effort and final design and analysis, including the following:

(a) Any pertinent geotechnical data used as a basis for selection, design, and installation of the proposed foundation elements;

(b) Additional subsurface investigations;

(c) Determination of geotechnical and foundation design parameters for each design site, including plots of interpreted design profiles against the individual data points used to derive the profiles as well as computation of coefficient of variation in each layer of the profile;

(d) Embankment and fill settlement and slope stability analysis;

(e) Retaining wall design and analysis;

(f) RSS design;

(g) Ground improvement or treatment of in-situ soils;

(h) Selection, design, and analysis of foundation systems;

(i) Lateral and vertical earth pressures;

(j) Expected serviceability and durability of proposed solutions;

(k) Planned field testing and monitoring programs, including pile and drilled shaft integrity and load testing and ground improvement testing. Include specifications and plans presenting the type, purpose, number, location, and procedures for each test and the recording and reporting procedures. Testing and monitoring of deep foundations shall be in accordance with the applicable LA DOTD, ASTM, and AASHTO specifications; and

(l) Vibration monitoring plan in accordance with Section 804.12 of the LSSRB. At a minimum, the pipelines near Sampson Street shall be considered vibration-sensitive features.

7.6.3 Geotechnical Instrumentation and Monitoring Plan

The Developer shall prepare a geotechnical instrumentation program to monitor the following during construction:

(a) Vibrations;

(b) Settlement and settlement rates of embankments;

(c) Pour water pressures; and

(d) Lateral movement and stability of temporary and permanent embankments, cuts, and structures.

When long-term performance issues are a concern, the instrumentation monitoring period shall be extended accordingly, including after completion of construction and into the Operating Period.

A detailed monitoring program shall be prepared for each structure, utility, and embankment affected by the Work, subject to Review and Comment. The instrumentation and monitoring program shall include appropriate types and quantities of monitoring instruments capable of measuring horizontal and vertical movements, soil pore water pressures, vibrations, and noise, as applicable.

The design and distribution of instrumentation shall demonstrate an understanding of the need, purpose, and application of each proposed type.

7.6.3.1 Geotechnical Instrumentation and Monitoring Interim Reporting

The Developer shall prepare interim reports and submit them to the LA DOTD for use in evaluation for acceptance of deep foundations, ground improvement measures, and other geotechnical elements. These reports shall consist of:

(a) Installation records and integrity testing records of deep foundations (submitted on a bent, pier, or group basis);

(b) Load testing records after completion of each load test;

(c) Settlement monitoring results (submitted not less than every two weeks); and

(d) Installation records of soil improvement measures.

7.6.3.2 Geotechnical Instrumentation and Monitoring Final Report

The Developer shall submit a final report to the LA DOTD with the results of all field verification testing, integrity testing, and instrumentation/monitoring. The report shall be logically organized by structure, site, or similar geotechnical elements. All installation and testing records shall conform to AASHTO or to applicable ASTM designations when not specified in AASHTO.

(a) Installation records of all deep foundations and soil improvement measures;

(b) Integrity testing records of all applicable deep foundations;

(c) Load testing records of all applicable deep foundations;

(d) Description of load testing results and their application to final foundation design;

(e) Settlement monitoring data;

(f) Vibration monitoring reports; and

(g) Description of any installation difficulties or deviations from initial design.

Section 7.7 Submittals

See Article 24 for list of submittals.

ARTICLE 8.

SURVEYING

Section 8.1 General Requirements

The Developer shall provide accurate and consistent surveying and mapping necessary to support ROW acquisition, design, and construction of the Project. The Developer is responsible for all surveying responsibilities in accordance with the LA DOTD Location and Survey Manual (LSM). The Developer is responsible for the final precision, accuracy, and comprehensiveness of all survey and mapping.

The Developer shall ensure that any person in charge of the survey is proficient in the technical aspects of surveying and is a Registered Professional Land Surveyor licensed in the State of Louisiana. All survey control points shall be set and/or verified by a Registered Professional Land Surveyor licensed in the State of Louisiana.

Section 8.2 Project Standards and References

8.2.1 Standards

(a) LA DOTD Location and Survey Manual (LSM);

(b) LA DOTD Location and Survey Manual Addendum A;

(c) LA DOTD Location and Survey Automation Procedures; and

(d) Louisiana Administrative Code, Title 46, Part LXI

8.2.2 References

(a) American Society of Civil Engineers (ASCE) 38-02

Section 8.3 Survey Data Provided to Developer

The LA DOTD has provided an established control network to the Developer in Exhibit Q to the Agreement. All survey work shall be relative to this primary Project control network.

8.3.1 Survey Verification

No later than 180 days after NTP, the Developer shall verify and confirm the location, accuracy and datum of the survey control network. If the Developer identifies any discrepancy, the Developer shall report the discrepancy in writing to LA DOTD for review. LA DOTD will respond to the discrepancy within 14 days.

In addition, the Developer shall perform checks of all survey information provided to the Developer, regardless of the source of information; and document all forms of data verification.

Section 8.4 Performance Requirements

The Developer shall prepare for Approval a property owner notification letter in accordance with the LSM prior to entering any private property outside the existing ROW. This letter shall be provided to the property owner and the LADOTD shall be notified if any issues arise.

The Developer will deliver the field survey to the LA DOTD in accordance with the LSM and all currently accepted Location and Survey Automation procedures.

All files associated with ROW mapping shall be provided to the LA DOTD in accordance with Addendum A to the LSM. This shall include, but will not be limited to, ROW Maps, COGO "IN" and "OUT" files, and title research reports for each owner and/or parcel.

Upon completion of the ROW acquisition and all construction Work, such that the final ROW lines will not be disturbed by construction, the Developer shall place ROW monuments and witness signs in accordance with Addendum A of the LSM. The Developer will also be required to submit a ROW Monument Map in accordance with the LSM. The Developer shall file the ROW Monument Map with the Clerk of Court in the parish where the ROW is located.

The Developer shall provide all materials, supplies, and other items necessary for proper survey monumentation.

8.4.1 Design Requirements

All survey Work shall be performed in U.S. survey feet. Work shall conform to state plane coordinates. Vertical control shall be established on the North American Vertical Datum of 1988 (NAVD 1988) (Table 8-1). Horizontal control is to be established (at a minimum) on the Louisiana State Plane Coordinate System, South Zone (North American Datum of 1983 [NAD83]) (Table 8-2).

Table 8-1. Vertical Accuracy Requirements

	1st Order	2nd Order	3rd Order	Remarks and Formulae
Error of Closure	0.013 feet $\sqrt{M}$	0.026 feet $\sqrt{M}$	0.049 feet √M	Loop or between control monuments
Maximum Length of Sight	250 feet	300 feet		With good atmospheric conditions
Difference in Foresight and Backsight Distances	±10 feet	±20 feet	±30 feet	Per instrument set up
Total Difference in Foresight and	±20 feet per	±50 feet per	±70 feet per second	Per total section or loop

	1st Order	2nd Order	3rd Order	Remarks and Formulae
Backsight Distances	second	second		
Recommended Length of Section or Loop	2.0 miles	3.0 miles	4.0 miles	Maximum distance before closing or in loop
Maximum Recommended Distance Between Benchmarks	2000 feet	2500 feet	3000 feet	Permanent or temporary benchmarks set or observed along the route
Level Rod Reading	± 0.001 foot	± 0.001 foot	± 0.001 foot	
Recommended Instruments and Leveling Rods	Automatic or tilting w/ parallel plate micrometer precise rods	Automatic or tilting w/ optical micrometer precise rods	Automatic or quality spirit standard, quality rod	When two or more level rods are used, they should be identically matched
Principal Uses	Broad area control, subsidence, or motion studies jig and tool settings	Broad area control, engineering projects basis for subsequent level work	Small area control, drainage studies, some construction and engineering	

Table 8-2. Horizontal Accuracy Requirements

	Urban / Rural	Urban Business District	Remarks and Formulae
Error of Closure	1:10,000	1:15,000	Loop or between control monuments
Angular Closure	$15"\sqrt{N}$	$10"\sqrt{N}$	N = number of angles in traverse
Accuracy of Bearing in Relation to Source*	20"	15"	Sin ∠= denominator in error of closure divided into 1 (approx.)
Linear Distance Accuracy	0.1 foot per 1,000 feet	0.05 foot per 1,000 feet	Sin ∠x 1000 (approx.) where ± = Accuracy of Bearing
Positional Error of any Monument	*AC*/10,000	*AC*/15,000	*AC* = Length of any course traverse
Adjusted Mathematical Closure of Survey (No Less Than)	1:50,000	1:50,000	

* The LA DOTD policy requires all bearings or angles be based on the following source: Grid bearing of the Louisiana Coordinate System, with proper zone and epoch specified.

The Developer shall establish and maintain additional survey control as needed and final ROW monumentation throughout the duration of the Project. The Developer shall tie any additional horizontal and vertical control for the Project to the established primary Project control network.

The Developer shall deliver a survey control package in accordance with the LSM to the LA DOTD. In addition, the Developer shall deliver to the LA DOTD a revised survey control package when survey monuments or control points are disturbed, destroyed, or found to be in error. All survey control points shall be set and/or verified by a Registered Professional Land Surveyor licensed in the State of Louisiana.

The Developer shall provide the National Oceanic and Atmospheric Administration (NOAA) no less than a 90-day notification of planned activities that will disturb or destroy any geodetic control monuments. This will provide time to plan for and execute relocation of geodetic monuments. The Developer shall replace all existing horizontal and vertical primary survey control points that have been disturbed or destroyed. The Developer shall make all survey computations and observations necessary to establish the exact position and elevation of all other control points based on the primary Project control network.

8.4.2 Construction Requirements

The Developer may use electronic field books to collect and store raw data. The Developer shall preserve original raw data and document any changes or corrections made to field data, such as station name, height of instrument, or target.

Field survey data and sketches that cannot be efficiently recorded in the electronic field volume shall be recorded in a hardcopy field note volume and stored with copies of the electronic data.

Section 8.5 Submittals

See Article 24 for list of submittals.

ARTICLE 9.

DEMOLITION

Section 9.1 General Requirements

The Developer shall design, prepare a Demolition and Abandonment Plan (D&AP), and perform all demolition operations within the DB Limits. Prior to demolition of any existing infrastructure, the Developer shall provide to the LA DOTD, photographs of the infrastructure elements to be demolished. The Developer shall also have photos of any associated personal property and any other items of potential dispute in and of a quality suitable for presentation as evidence in court.

Section 9.2 Project Standards and References

9.2.1 Standards

(a) LSRBB, Supplemental Specification and Special Provisions;

(b) LDEQ and LA DOTD Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook;

(c) USACE publication Engineering and Design - Hydrographic Surveying (EM 1110-2-1003);

(d) MOU between LA DOTD and UP; and

(e) MOU between LA DOTD and KCS;

9.2.2 References

(a) LA DOTD Location and Survey Manual (LSM); and

(b) LA DOTD Location and Survey Manual Addendum A.

Section 9.3 Demolition and Abandonment Plan

The Developer shall develop, implement, and maintain, a D&AP for all existing structures, features, railroads, wells, and utilities that will be removed, abandoned, or partially abandoned as specified in the requirements of the Contract Documents. At least 60 days prior to Commencement of Construction, the Developer shall submit the D&AP for Approval. Demolition operations shall not commence until the D&AP has been Approved.

The D&AP shall be signed, sealed, and dated by a Professional Engineer registered in the State of Louisiana. The D&AP shall list and show all structures, features, utilities, and railroads that will be removed, abandoned, or partially abandoned.

The D&AP shall show the locations of equipment used for demolition, the sequence of removal, loading limits, allowable location of loads, equipment specifications including their weight, and all other material that will be placed on the structure during or prior to demolition. The D&AP shall include plans and calculations for all falsework necessary for demolition.

9.3.1 Demolition Team

The Developer shall provide a demolition team with appropriate qualifications and experience for all demolition work required for the Project. The Developer shall provide the names and contact details, titles, job roles, and specific experience of the demolition team members in the PMP. For key personnel requirements, see Section 2.3.5.24.

9.3.2 Data Collection

The Developer shall collect relevant data, including As-Built Plans, environmental requirements, and Hazardous Waste data.

9.3.3 Coordination and Communicating

The Developer shall coordinate and communicate with the LA DOTD, Railroads, Utilities, and other agencies as necessary to conduct demolition operations.

Section 9.4 Performance Requirements

The Developer shall conduct demolition operations in accordance with the D&AP. The Developer is solely responsible for all aspects of safety, structural capacity, structural stability, applicable regulations, and permits associated with demolition Work.

Demolition shall be in conformance with the maintenance of traffic plans and shall occur at the appropriate times as to not impede rail, marine, and vehicular traffic requirements as set forth in the requirements of the Contract Documents.

The Developer shall protect portions of the existing structures that are required to be in service to facilitate maintenance of traffic to the extent required for the public and vehicular traffic to safely navigate the Project and correct any damage that occurs. Prevent material, equipment, and debris from falling onto traffic, Railroad property, and Utilities. Demolition shall accommodate drainage requirements specified in Article 12.

Demolition for existing structures shall include removal of structure to a minimum of 2 feet below final grade elevation unless directed otherwise by the LA DOTD and permitting agencies.

Following acquisition or possession of any parcel of Project ROW, the Developer shall:

(a) Within10 days from vacancy of the property, secure and protect the buildings on the Project ROW until they are disposed of or demolished. The Developer shall board-up, mow, fumigate and winterize as required by the LA DOTD or applicable Law.

(b) Coordinate with the owner and occupants to ensure the clearance of personal property from the Project ROW as applicable.

(c) Provide for any insect and rodent control and initiate extermination as required to protect the adjacent properties and rid the Project ROW from infestations.

(d) Provide written notification to the LA DOTD of any real and/or personal property remaining on the Project ROW after vacated by the occupants and not acquired as part of the acquisition.

(e) Conduct demolition as specified herein.

(f) Notify the LA DOTD upon completion of the demolition and clearance of the Project ROW as applicable.

9.4.1 Demolition of Bridges

The removal of existing bridges shall include the complete removal and disposal or salvage of all components of the superstructure, substructure, and all miscellaneous items that are attached to the structures with the exception that buried foundation elements that will not interfere with the placement of proposed structures need only be removed to 2 feet below the existing or final ground line, whichever is lower in elevation.

Pier removal in Calcasieu River and the Lake Charles shall be 2 feet below the mudline or as required in the USCG and USACE Permits, whichever is lower in elevation.

Explosives may be used to control demolition of the Existing Bridge subject to compliance with all applicable permits.

Side-scan sonar surveys shall be performed, as described in this section, before and after all demolition work to determine if any debris has fallen or been deposited in the Calcasieu River and Lake Charles and to confirm pier removal has been completed to the required depth. The Developer shall remove all debris created by demolition as identified in the surveys.

All areas beneath bridges that are located over land shall be graded to drain and seeded.

9.4.1.1 Sweep and Sounding Surveys of the Calcasieu River and Lake Charles

A hydrographic sweep survey shall be performed: (a) prior to the commencement of Construction Work for the specific applicable Design Unit(s); (b) whenever debris is known or suspected to have fallen into the channel; and (c) following completion of the demolition work to ensure that all structures and construction debris/obstructions have been removed. Hydrographic sweep surveys shall be submitted to LA DOTD for Review and Comment.

A Registered Professional Land Surveyor licensed in the State of Louisiana shall be responsible for all survey work performed.

The hydrographic surveys shall be conducted with a multibeam transducer or equivalent equipment. The minimum vertical accuracy of the underwater depth soundings will be within plus or minus 1/2 foot. The vertical reading will be recorded to the nearest 0.1 foot. The minimum horizontal accuracy of the underwater depth soundings will be within 2 feet of the true position. Point density will be a minimum of 3 points for each 2 foot x 2 foot square area.

Further, to assure that the best data are used, all points collected beyond 30 degrees from center shall not be used, and a 50 %overlap of each subsequent multibeam pass will be required.

At the completion of the demolition work, a hydrographic sweep survey will be conducted and the survey results will be reviewed. Based on this review, if it is determined that additional material/debris needs to be removed, the Developer shall be responsible for removing the material/debris identified. After the additional material/debris has been removed, another hydrographic sweep survey shall be conducted.

Hydrographic sweep surveys and material/debris removal shall be performed until no material/debris is found in the sweep areas. After all identified material/debris has been removed, a final sweep survey will be performed to ensure no debris remains and existing piers have been removed to the specified depths.

The initial and final hydrographic surveys shall include elevations on a 5 foot grid from bank to bank and a minimum of 500’ upstream and 500’ downstream from the existing bridge.

The top of water elevation shall be surveyed from the predetermined project bench mark and recorded at the beginning of each survey and at three hour intervals thereafter. If sizeable differences in top of water elevations are noted, using standards of practice, then adjustments will be made in the reduction of the field notes for final elevations.

No survey will take place on those days or times when the water has significant chop, which would compromise the integrity of the data. In the event that a passing boat causes a wake, the survey shall cease until the waters return to normal.

The final hydrographic information shall be submitted for Review and Comment. The final survey submission shall be stamped by a Registered Professional Land Surveyor licensed in the State of Louisiana and shall include the hydrographic chart, field notes, digital photographs, a final tabulation sheet with elevations, and electronic survey files in Microstation format.

9.4.2 Demolition of Roadway Structures

For new roadways, the Developer shall demolish and remove the pavement, base course, and subgrade of the corresponding existing road. Remove signs, roadway lighting, barriers, drainage structures, and guardrail as necessary. Grade all disturbed areas for positive drainage and seed areas after grading.

9.4.3 Demolition of Railroads

Demolition and removal of existing railroads will be in accordance with Article 6 defined in the MOUs between the LA DOTD and the Railroads. The Developer shall coordinate Railroad demolition operations with the Railroads.

9.4.4 Demolition of Buildings

Demolition of existing buildings shall include:

(a) Demolition and removal in full of shallow foundations and all walls, roofs, and contents within; and

(b) For piled foundations, demolition and removal in full of the pile cap (if any) and demolition and removal of the piles to at least 2 feet below existing or finished grade level, whichever is lower in elevation.

In addition, demolition and removal of buildings, equipment, and materials shall address Hazardous Waste requirements specified herein.

All disturbed areas shall be graded to drain and seeded.

9.4.5 Demolition of other Existing Infrastructure

For other existing infrastructure, the Developer shall:

(a) Demolish and remove the aboveground elements of the existing infrastructure in full within the DB Limits, with the exception of those listed in Section 5.5;

(b) Demolish and remove as much of the below-ground element of the existing infrastructure within the DB Limits as the Developer requires for the purposes of the Work, except that:

(i) The demolition and removal of the belowground elements shall extend to at least 2 feet below existing or finished grade level, whichever is lower; and

(ii) Any hollow belowground structure (including basements, sumps, swimming pools, and chambers) shall be back-filled with appropriate structural fill. USTs and other vessels containing Hazardous Materials shall be addressed as required in Article 3; and

(iii) Pavement, basecourse, and subgrade for private drives and other paved areas shall be removed.

(c) Grade disturbed areas to drain and seed.

9.4.6 Utilities

The Developer shall locate all active and inactive Utilities in the vicinity of the Project prior to construction and ensure that Utilities that are to remain in their existing locations are not disturbed. All Utility Adjustments required to prevent impacts from demolition activities must be completed prior to the commencement of demolition Work. The Developer shall notify Louisiana One Call prior to performing any underground demolition Work by calling (225) 275-3700 or (800) 272-3020, or by facsimile transmission to (225) 272-1967.

As more particularly described in Article 5, the Developer shall remove all Utilities within the Project ROW that will not remain in service after Final Acceptance. The Developer is responsible for making all arrangements and performing all Work necessary to ensure the continued safe operation and structural integrity of all Utilities located within the Project ROW and to resolve any Utility conflicts. Abandonment of Utilities in place shall be subject to Approval, and the Developer shall clearly identify such abandoned Utilities in the

Utility Conflict Matrix, Utility Adjustment Concept Plans, Utility Adjustment Plans, and the D&AP.

The D&AP shall detail the methods of abandonment being utilized and detail the age, condition, material type, active status, and size of the Utilities. Additionally, the Utility Adjustment Plans and/or URAs for Utility abandonments must provide for the Utility Owner's continued ownership of and responsibility for abandoned facilities, document the location of all abandoned facilities, and include a certification by the Utility Owner or the Developer that no Hazardous Materials are present in the abandoned facilities. Significant voids and empty pipes must be filled in accordance with the LSSRB.

Other requirements pertaining to Utilities are specified in Article 5.

9.4.7 Wells

Except for the Environmental Wells (See Section 9.4.7.3), the Developer shall plug and abandon wells in the DB Limits according to the requirements of the Contract Documents. Wells in conflict with proposed infrastructure shall be abandoned with the exception of the environmental recovery wells, which must remain in place. The Developer shall coordinate well abandonment with the well owner, the LA DOTD, the LDEQ, and any other applicable agency. Wells to be abandoned and procedures for abandonment shall be included in the D&AP.

9.4.7.1 Water Wells

Water wells, including test and monitor wells, shall be plugged and abandoned in accordance with the LSSRB and criteria set forth in the Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook prepared by the LDEQ and LA DOTD.

Prior to plugging and abandonment, the Developer shall obtain a monitoring well list from the LA DOTD to verify the identity of the well. In the event the well cannot be verified, the Developer shall provide accurate latitude and longitude of the well to the nearest one second of a degree, Section Township and Range, and ground elevation (NGVD) and USGS Quadrangle map number shall be placed on the plugging and abandonment form (Exhibit 3 of the Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook).

The Developer shall obtain written approval by the LDEQ prior to the abandonment of groundwater monitoring or recovery systems or boreholes at properties under the regulatory authority of the LDEQ. Use of any abandonment method not in accordance with the Handbook will require approval of the appropriate regulatory authority.

The Developer shall register the plugging and abandonment of all wells with the LDNR using the Water Well Plugging and Abandonment Form.

9.4.7.2 Oil and Gas Wells

A diligent effort was made to locate active and abandoned oil and gas wells within the DB Limits. The Developer is made aware there is an oil and gas well (well serial number 184633) within the DB Limits that has been reported as plugged and abandoned. Well serial number 184633 information can be retrieved at the following websites:

(a) http://sonlite.dnr.state.la.us/sundown/cart_prod/cart_con_wellinfo2?p_WSN=184633

(b) http://ucmwww.dnr.state.la.us/ucmsearch/FindDocuments.aspx?idx=xwellserialnumber&val=184633

The Developer shall be responsible for addressing oil and gas wells within the DB Limits according to the requirements of the Contract Documents and all Federal, State, and local regulations.

9.4.7.3 Environmental Wells

The LA DOTD, in coordination with the well owner, the LDEQ and any other applicable agency, will plug and abandon the monitoring wells within the DB Limits that conflict with the proposed infrastructure. The Developer shall coordinate with and provide access to LA DOTD and LA DOTD's contractors in the performance of the work to plug and abandon wells. See Section 3.4.11.

9.4.8 Hazardous Materials

The Developer is advised the existing bridges and buildings may include lead paint, asbestos, and other Hazardous Materials. The Developer is advised there are known contaminated areas within the Project limits. The Developer shall follow their HM/WMP for work related to Hazardous Materials. Additional requirements for Hazardous Materials are provided in Article 3.

The Developer shall be responsible for inspecting, sampling, and testing for the presence of Hazardous Materials in all infrastructure to be demolished and removed in accordance with the Materials Management Plan. Suspect, questionable, or potentially Hazardous Materials shall be evaluated, sampled, and tested by the Developer prior to demolition of the relevant existing infrastructure. The abatement of all Hazardous Materials shall be completed to the greatest extent possible prior to any demolition.

The Developer is responsible for management of any hazardous material encountered during demolition, storage, transport, and disposal in accordance with the Materials Management Plan.

9.4.9 Waste Management, Disposal, and Salvage

Unless otherwise specified by the LA DOTD, all demolished material shall become property of the Developer. The Developer shall be responsible for the containment, collection, and disposal of any demolished or removed material in accordance with Federal, State, and local regulations, and Article 3. All disposal shall be outside the DB Limits.

No demolition materials salvaged from demolished structures at the Site shall be re-used and/or recycled in Construction Work unless Approved.

The LA DOTD reserves the right to require the Developer, at any time, to salvage and deliver to a location designated by the LA DOTD any equipment and materials in an undamaged condition.

Section 9.5 Salvaged Materials

The Developer shall perform all HAZMAT abatement (including lead abatement), as applicable for salvaged materials. See section 811 of the LSSRB for further cleaning, coating and lead abatement requirements.

Decorative railings, with pistol design, on the Existing Bridge (Recall Number 032780) shall be salvaged. The Developer shall clean and apply a zinc paint primer in accordance with section 811.03 of the LSSRB to decorative railings and pistols prior to transporting the railings to their final destination. The Developer shall remove the entire railing without unnecessary damage, stack on dunnage, and transport to up to three separate locations in the Lake Charles metropolitan area as directed. The Developer shall remove, transport, and deliver railing without any unnecessary damage.

The Developer is responsible for procuring, including all associated costs, the appropriate documents for permission to demolish any historical structure.

Section 9.6 Submittals

See Article 24 for list of submittals.

ARTICLE 10.

ROADWAY & GRADING

Section 10.1 General Requirements

The Developer shall design, prepare plans, and construct roadways and related work, including main roadways, travel lanes, shoulders, barriers, transitions and all other required roadway-related facilities for the Project.

Section 10.2 Project Standards and References

10.2.1 Standards

(a) LA DOTD Roadway Design Procedures and Details Manual;

(b) LA DOTD Design Report for 2017 Minimum Design Guidelines; preferred values (or acceptable values if preferred is not listed);

(c) LA DOTD Engineering Directives and Standards Manual (EDSM);

(d) AASHTO A Policy on Geometric Design of Highways and Streets (AASHTO Green Book);

(e) LA DOTD Standard Plans and Special Details;

(f) MUTCD;

(g) LSSRB, Supplemental Specifications, and Special Provisions;

(h) LA DOTD Software and Deliverable Standards for Electronic Plans;

(i) AASHTO Highway Safety Manual (HSM);

(j) AASHTO Roadside Design Guide;

(k) AASHTO Manual for Assessing Safety Hardware (MASH);

(l) LA DOTD Approved Materials List;

(m) FHWA Policy on Access to the Interstate System

(n) AASHTO A Policy on Design Standards – Interstate Systems;

(o) TRB Highway Capacity Manual (HCM); and

(p) U.S. Access Board Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way;

10.2.2 References:

(a) FHWA Mitigation Strategies for Design Exceptions;

(b) LA DOTD Traffic Engineering Manual;

(c) LA DOTD BDEM and BDTMs;

(d) LA DOTD Design Exception Request Form;

(e) LA DOTD Design Waver Request Form;

(f) LA DOTD Design Report Form; and

(g) FHWA Policy on Access to the Interstate System.

Section 10.3 Design Requirements

10.3.1 Interstate and Ramps

The Developer shall coordinate the roadway design with the design of all other components of the Project. The Project roadways shall be designed to integrate with the proposed bridge, intersecting roadways, and roadways that are adjacent or connecting to the Project. The design along the I-10 mainline corridor shall follow the urban freeway criteria in the LA DOTD Minimum Design Guidelines preferred values. The design speed of the I-10 mainline shall be 60 mph and the design speed for all other facilities shall be no less than the current posted speed or as noted in Article 1. The 15*V requirement stated in the LA DOTD Roadway Design Procedures and Details Manual 4.2.1 (7.) only applies to the mainline.

The Project roadways shall be designed to incorporate roadway appurtenances including, but not limited to fences, noise attenuators, barriers, and hazard protection as necessary to promote safety and to mitigate visual and noise impacts on neighboring properties.

Sampson St. U-Turn movement connecting structures B-8 and B-11 shall be designed according to Section 10.2.1 (d).

10.3.2 Local Streets and Drives

The Developer shall coordinate, design, and construct the improvements on cross and connecting streets in accordance with the Governmental Entity having jurisdiction of said roadway. All roadside safety devices used on the Project shall meet current crash test and other safety requirements that meet or exceed current LA DOTD requirements.

Proposed driveway connection underneath Sampson St., as shown on the DB Limits requires:

(a) two lanes bi-directional;

(b) minimum 16’-6” vertical clearance; and

(c) matches existing driveway at both ends.

Section 10.4 Roadside Safety Devices

All roadside safety devices must comply with the AASHTO Manual for Assessing Safety Hardware (MASH) requirements and the LA DOTD Approved Materials List. In the event the AASHTO MASH does not cover a roadside safety device, then such device must comply with NCHRP Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features requirements.

The Developer shall use barrier or guardrail wherever clear zone requirements cannot be achieved. The Developer shall provide crash attenuators and rail end treatments at all required locations where barriers or guardrails begin or end. Only concrete barriers will be allowed for required median barriers. Existing median barrier between the east end of Ryan St. (Bridge B-14) and east end of DB Limits shall remain in place.

Impact attenuators must be:

(a) Very High Impact Frequency for installations in gores;

(b) High Frequency for attenuators installed in a curve on the outside or in a median; and

(c) Moderate Frequency for attenuators installed on tangent on the outside or in a median.

The Developer shall not use temporary concrete barrier in a permanent configuration. Median barrier or glare screens must not have any breaks or gaps. Incidental concrete paving shall be provided within medians if the distance between adjacent barrier rails or the distance between the outside edge of shoulder and adjacent barrier is equal to or less than 20 feet.

For maintenance purposes, back-to-back single face concrete barriers with gaps are prohibited for permanent construction.

Section 10.5 Transitions

Transitions from Project roadway Elements to existing roadway Elements must transition, within acceptable AASHTO transition criteria.

Section 10.6 Interchange Modification Report

The LA DOTD is currently developing an Interchange Modification Report. Any modifications to the Interchange Modification Report after obtaining FHWA acceptance will be the responsibility of the Developer. FHWA maintains approval authority over the Interchange Modification Report and any modifications after initial approval.

Section 10.7 Submittals

See Article 24 for list of submittals.

ARTICLE 11.

PAVEMENT STRUCTURE

Section 11.1 General Requirements

The Developer shall design, prepare plans, and construct pavements that are designed to accommodate 20 years of projected traffic and meet or exceed the maintenance performance requirements and Handback Requirements. The Pavement Structure design to be used within the DB and O&M Limits shall be developed by the Developer so that the pavement will perform under the conditions (climate and loading) for the specified periods.

Section 11.2 Project Standards and References

11.2.1 Standards

(a) LSSRB, Supplemental Specifications and Special Provisions;

(b) AASHTO Pavement Design Procedures;

(c) LA DOTD Standard Plans and Special Details;

(d) LA DOTD Testing Procedures Manual; and

(e) LA DOTD Approved Materials List.

11.2.2 References

(a) LA DOTD Roadway Design Procedures and Details;

(b) DARWin Pavement Design Software;

(c) PavementME Design Software;

(d) Traffic Data;

(e) AASHTO Guide for Design of Pavement Structures (1993);

(f) AASHTO Mechanistic-Empirical Pavement Design Guide, a Manual of Practice (2020);

(g) Mechanistic Characterization of Asphalt Overlays for Pavement Rehabilitation and Preservation using Pavement ME Approach, LTRC Project No. 19-2P (2021);

(h) Development of DARWin-ME Design Guidelines for Louisiana Pavement Design, LTRC Project No. 12-4P Final Report (August 2015);

(i) LA DOTD Pavement Design Guide; and

(j) LA DOTD Asphalt Pavement Design Policy.

Section 11.3 Performance Requirements

For roadways adjacent to and crossing the Project that are disturbed by the construction activities of the Project, the Developer shall, at a minimum, match the in-place surface type and structure of the existing roadways. In addition, all new shoulders shall be constructed as full-depth shoulders to match the roadway pavement section. The Developer shall design all tie-in Work to avoid differential settlement between the existing and new surfaces.

The Developer shall coordinate the design and construction of all crossroads with the Governmental Entity having jurisdiction whether a municipality, parish, or the LA DOTD.

11.3.1 Design Requirements

11.3.1.1 Pavement Design Report

The Developer shall prepare a Pavement Design Report that documents the assumptions, considerations, and decisions contributing to the Developer's pavement design, including the following:

(a) Pavement design details by location, including structural layer materials, general specifications, and thicknesses;

(b) Life-cycle management analysis (using deterministic model), including the periods for resurfacing, reconstruction, and other rehabilitation measures and what these activities are likely to entail;

(c) Relevant pavement evaluation data (structural and functional) and condition information on adjacent roads;

(d) For slopes steeper than 2:1, include the slope stability analysis for embankment and excavation slopes including both short-term (undrained) and long-term (drained) conditions, and discussion of design measures undertaken to ensure stability and safety of all slopes. The analysis shall consider the potential for long-term surficial slide failures common to high plasticity clays in Louisiana, and specific recommendations shall be provided to minimize their occurrence;

(e) Relevant geotechnical data and drainage requirements;

(f) Design criteria used in determining the pavement design(s), including traffic loads, pavement material strength factors, and pavement design life;

(g) Design methods adopted in developing the pavement design(s) and the rationale for their selection;

(h) Other considerations used in developing the pavement design(s);

(i) The pavement for main lanes and ramps shall be designed using the functional highway classification(s) for "Urban Interstate";

(j) Tabulation of the relevant subgrade design values such as the modulus of subgrade reaction (k-value), resilient modulus, California Bearing Ratio (CBR), or other basis for each pavement design section;

(k) Site conditions including any potentially soft compressible zones requiring special design considerations, and the presence and location of expansive soils requiring special design considerations; and

(l) Recommended subgrade stabilization procedures including the type of stabilizing agents, the application rates, compaction criteria, strength requirements, total depth of treatment, and other relevant details.

11.3.2 Ride Quality of New Pavements

The ride quality of new pavement, measured using the International Roughness Index (IRI), will follow the LSSRB without pay incentives or disincentives.

Ride quality of new pavements in exclusion areas as defined in Section 601.03.11.4.2 of the LSSRB shall meet the requirements of Section 601.03.11.3.2 and Table 601-2 of the LSSRB.

Pavement not meeting the specified requirements shall be subject to removal and replacement. The minimum length of concrete removal and replacement in exclusion areas is the length required to achieve the requirements specified in Section 601.03.11.3.2 of the LSSRB.

New concrete pavements having an IRI greater than 85 inches per mile (in/mile) will be subject to removal and replacement. New pavements having an IRI greater than 75 in/mile, but less than or equal to 85 in/mile will be corrected to meet an IRI of 75 or less.

New asphalt pavements having an IRI greater than 75 in/mile will be subject to removal and replacement. New pavements having an IRI greater than 65 in/mile, but less than or equal to 75 in/mile will be corrected to meet an IRI of 65 or less. Any Corrective Action shall be Approved prior to action being taken.

11.3.3 Structural Capacity

The LA DOTD shall be satisfied that the structural capacity of the pavement will provide satisfactory service per Article 22. The Developer shall prepare and submit for Review and Comment pavement life-cycle plan for all pavement areas demonstrating how the pavement will meet or exceed the maintenance performance requirements throughout the Term and will achieve the required Residual Life per Article 23.

The structural capacity (thickness and strength) of pavement sections must be evaluated during the construction period in accordance with the Developer's accepted Construction Quality Management Plan (CQMP). The thickness, strength, quality of materials, and placement will be evaluated to ensure compliance with the approved design.

11.3.4 Material Quality

The LA DOTD shall be satisfied that the materials used meet or exceed the Project specifications and shall be satisfied that all requirements of the CQAP have been performed and met.

Section 11.4 Construction Requirements

11.4.1 New Construction Typical Sections

The Developer shall design and construct the following pavement sections to meet the following criteria:

(a) The Developer shall construct permanent and temporary pavement structures that have been approved for use on the Project by the LA DOTD and FHWA;

(b) Pavement limits between the east end of Veterans Memorial Drive bridge (2587+00) and Ryan St. bridge (Sta.2594+40) shall either be new pavement or rehabilitated pavement subject to the Performance Requirements in Exhibit 22-2. If new pavement is constructed, existing median barrier shall also be replaced;

(c) All concrete pavement surfacing shall be a minimum of 13 inches (mainline interstate and ramps);

(d) All asphalt pavement structure number shall be no less than 7.25 (mainline interstate and ramps);

(e) Pavement designs shall be developed using either an asphalt surface (LSSRB, Part 5) or concrete surface (LSSRB, Part 6), along with a minimum 12-inch composite (stone and soil cement) base course (LSSRB, Section 302) and a minimum 8-inch treated subgrade layer (LSSRB, Section 305) with the stipulation that the designs provide equivalent structural performance (mainline interstate and ramps);

(f) Recycled Portland Cement Concrete Aggregate (RPCCA) shall adhere to LSSRB Sections 302, 305 and 1003; and

(g) A drainage system shall be provided to ensure that all surface and subsurface water will drain from the pavement structure.

The Developer shall submit designs for new pavements (through lanes and shoulders) which will include, but not be limited to, the following:

(h) Information on design criteria and methods;

(i) Details of materials/mixes to be used; and

(j) Details of internal drainage system for aggregate base courses.

Section 11.5 Submittals

See Article 24 for list of submittals.

ARTICLE 12.

DRAINAGE

Section 12.1 General Requirements

The Developer shall design, prepare plans and construct the Drainage System for the Project that consist of all cross drain culverts and/or pipes, all open channels and closed system conveyances, and all retention/detention facilities. All stormwater flowing through the Project shall be accounted for in the design, including water originating both inside and outside the DB Limits. Drainage improvements that are included in the Project shall be modified or improved in such a manner as to ensure that stormwater is handled safely and efficiently. Reused Elements must meet the Residual Life requirements of Article 23.

Section 12.2 Project Standards and References

12.2.1 Standards

(a) LSSRB, Supplemental Specifications and Special Provisions;

(b) LA DOTD EDSM;

(c) LA DOTD Hydraulic Manual including computer programs;

(d) LA DOTD Standard Plans and Special Details; and

(e) LA DOTD Roadway Design Procedures and Details.

12.2.2 References

(a) LA DOTD User's Manual for Hydraulics Programs; and

(b) FHWA Hydraulic Engineering Circular (HEC)-18 and HEC-20 for Scour Analysis;

Section 12.3 Performance Requirements

12.3.1 Design Requirements

The Developer shall assess all drainage facilities within the DB Limits, including any facilities affected by or used in the design or construction. All drainage facilities designed and constructed shall have adequate hydraulic capacity to meet standard requirements and shall meet detention or retention requirements as set forth by the LA DOTD Hydraulic Manual and other Governmental Entities. No stormwater spread is allowed within the travel mainline lanes. For non-mainline roadways, the Developer shall follow ponding and stormwater spread requirements in accordance with the LA DOTD Hydraulics Manual.

For the Basic Project Configuration (mainline and ramps), the minimum roadway grade elevation at the lowest edge of travel lane is preliminarily established as 1.0 feet above 50-year WSEL as determined from the relevant FEMA Flood Insurance Study and Flood Insurance Rate Maps.

For the Basic Project Configuration (all other roads), the minimum roadway grade elevation shall be no lower than either 9.0 ft NAVD 88 elevation or existing grade, whichever is higher.

Final drainage design performed by the Developer may require deviations from the requirements stated above to determine minimum grade roadway elevations. The Developer is responsible for determining the minimum roadway grade elevation.

Should drainage outfall improvements beyond the DB Limits be necessary as a result of hydraulic analysis, the Developer shall provide the analysis and files along with design requirements and conclusions to the LA DOTD, who will then communicate the necessary downstream improvements to the Governmental Entities affected.

The Developer shall acquire all pertinent data to the existing Drainage System within the DB Limits, including existing plans and survey information for all culverts, pipes, and storm drain systems. All pipes and closed systems shall be videoed for assessment prior to design. Design of the Drainage Systems shall be coordinated with roadway design to ensure effective drainage of the roadway facilities.

Design of modifications and improvements of drainage facilities shall be performed with consideration for hydraulic capacity and functionality, safety, erosion and sedimentation control, rideability (if applicable), maintenance, and maintenance accessibility.

In the case of required new piping material, plastic pipe will not be allowed except as described in reference EDSM II.2.1.1, Revised Pipe Policy.

12.3.2 Construction Requirements

The Developer's drainage modification and improvement plan shall accommodate construction staging as needed and include temporary erosion and sediment control. Sediment basins or retention/ detention shall be included as needed to satisfy the LPDES and other regulatory requirements. The Developer shall prepare, submit, and maintain the Stormwater Pollution Prevention Plan. The affected acreage shall be determined and the appropriate LDEQ forms submitted to the LDEQ for approval.

The Developer shall notify the LA DOTD if any existing stormwater system (any and all pipe, structure, ditch, detention/retention system, or any other component necessary for the conveyance of stormwater) outside of the Project will be negatively impacted by the proposed improvements. Damage to existing infrastructure due to the Developer's operation shall be immediately repaired to maintain existing system capacity at all times. This repair shall be the Developer's responsibility.

Section 12.4 Submittals

See Article 24 for list of submittals.

ARTICLE 13.

STRUCTURES

Section 13.1 General Requirements

The Developer shall design, prepare plans and construct new structures and modified existing structures for the Project. Structures may include, but are not limited to bridges, retaining walls, drainage structures, noise walls, visual walls, and sign structures. The completed structures shall provide safety, functionality, durability, ease of inspection and maintenance, and aesthetically pleasing appearance.

The Developer shall conduct all necessary work for the rehabilitation of the existing bridges to remain. The Developer shall collect all relevant structural data including as-built plans, shop drawings, and inspection reports.

Section 13.2 Project Standards and References

13.2.1 Standards

(a) LA DOTD BDEM and BDTMs;

(b) LSSRB, Supplemental Specifications and Special Provisions;

(c) LA DOTD EDSM;

(d) LA DOTD Standard Plans and Special Details;

(e) FHWA Load Rating for the FAST Act's Emergency Vehicles 11/03/16;

(f) LA DOTD Minimum Design Guidelines, Preferred Values;

(g) LA DOTD Hydraulics Manual;

(h) AASHTO LRFD Bridge Design Specifications;

(i) AASHTO Guide Specifications and Commentary for Vessel Collision Design of Highway Bridges;

(j) AASHTO A Policy on Geometric Design of Highways and Streets, Desired Values;

(k) Union Pacific Railroad – Burlington Northern Santa Fe (BNSF) Railway Guidelines for Railroad Grade Separation Projects;

(l) KCS Guidelines for the Design and Construction of Railroad Overpasses and Underpasses;

(m) LA DOTD Software and Deliverable Standards for Electronic Plans;

(n) LA DOTD Bridge Inspection Manual; and

(o) Louisiana Transportation Research Center, Retrofit of Existing Statewide Louisiana Safety Walk Bridge Barrier Railing Systems, Final Report 658.

13.2.2 References

(a) AASHTO Guide Specifications for Bridge Temporary Works;

(b) AASHTO Construction Handbook for Bridge Temporary Works;

(c) LA DOTD Geotechnical Engineering Design Guide No. 8

(d) AASHTO MASH; and

(e) NCHRP, Report 350.

Section 13.3 Performance Requirements

13.3.1 Design Requirements

The Developer shall conduct QA/QC in accordance with Article 2. The Developer shall follow the QA/QC requirements of the BDEM Part 1 Chapter 3 for bridge design and load rating.

13.3.1.1 Bridge and Foundation Types

Bridge or foundation types will not be restricted to those traditionally used by the LA DOTD. Types not traditionally used by LA DOTD may be allowed only if they are currently accepted for general use by other United States departments of transportation or transportation authorities, and the Developer demonstrates to the LA DOTD, that they will perform according to this Technical Provision.

For bridge or foundation types not traditionally used by LA DOTD, the Developer shall submit for Approval, in consultation with FHWA, the proposed bridge and foundation types supported by the following information:

(a) Three reference projects where the proposed structure type has been used by other United States departments of transportation or transportation authorities;

(b) Reference projects must have similar loadings and ADT; and

(c) Reference projects must have been in service for 15 years and proven to be functioning as intended.

Experimental bridge types, timber bridges, masonry bridges, and arches will not be permitted. Fracture critical elements, steel pier caps, and girders using hinges involving pin and hanger connections will not be permitted.

Except as explicitly stated otherwise, spread footings and other types of shallow foundations will not be permitted. Timber piles, and auger cast piles for bridge structure foundations will not be permitted. Steel piles exposed above ground line will not be permitted and steel piles exposed under water must be below design scour elevation.

Bridges over existing or future roadways, existing or future railroad tracks, or navigable waterways shall be supported by column bents or piers; pile bents are not allowed. For existing or future Railroad tracks or navigable waterways, bridge abutments and piers shall be outside the established clearance envelopes. For existing or future roadways, bridge abutments shall be setback a minimum of 30 feet from the edge of travel lane; bridge piers shall be located

outside of the clear zone and provide a minimum lateral offset in accordance with AASHTO Green Book or other clearance requirements. Bridge piers are allowed in the I-10 mainline median if less than 30 feet from edge of travel way provided the piers are shielded by a concrete barrier.

13.3.1.2 Structure Aesthetics

The Developer shall prepare an Aesthetic Concept Plan as outlined in Section 14.3 which includes aesthetic concepts for the New Bridge. See Articles 14 and 15 for aesthetic requirements.

13.3.1.3 Horizontal and Vertical Clearances

Unless noted otherwise, clearance requirements shall be as specified in the BDEM. The Developer is responsible for determining horizontal clearance requirements for railroads based upon the railroad owner requirements. The Developer's final design shall accommodate the final horizontal and vertical clearances for the Railroad Relocations. The Developer's construction phasing and staging shall accommodate the existing Railroad spurs until they are removed by others.

The minimum navigational clearances over the Calcasieu River shall be 200-feet horizontal and 73-feet vertical measured from 4.3 ft NAVD 88 elevation.

13.3.1.4 Bridge Cross Section and Profile

New bridge decks shall be 2.5% normal crown, except for areas requiring superelevation or transition. For bridges that are to be widened, deck cross slopes shall match existing.

13.3.1.5 Load Factors

Load factors shall conform to the BDEM. However, the Developer shall use load factors of 1.00 for wind load on structures in Limit States Strength III, Strength V, Service I, and Service IV in accordance with AASHTO LRFD 9th Edition methodology. Related to Limit States Extreme Event III and Extreme Event IV, the Developer shall use of 1.00 for wind load on structures in accordance with AASHTO LRFD 9th Edition methodology.

Operational Importance Factor shall be 1.05 for bridges carrying I-10 and shall be 1.00 for other bridges.

The Operational Classification shall be "critical."

13.3.1.6 Vessel Collision

Structures adjacent to the navigable waterway shall be designed for vessel collision in accordance with the BDEM and the design parameters and methodology specified in the *Preliminary Vessel Collision Design Loads for the I-10 Calcasieu River Bridge* located in the Reference Documents, which set forth the minimum vessel collision load requirements.

Fenders or other sacrificial systems will not be permitted; the bridge elements shall be designed to resist vessel impact.

13.3.1.7 Bridge Load Ratings

The Developer shall submit as-designed and as-built bridge load ratings in accordance with the BDEM. As-built bridge load rating reports shall be submitted no more than 60 days after Partial Acceptance.

13.3.1.8 Scour

The Developer is responsible for conducting scour analyses.

13.3.1.9 Bridge Deck and Superstructure

Partial depth pre-cast concrete deck forms will not be permitted. Empirical deck design shall not be permitted.

Asphalt overlay on structures will not be permitted.

The use of epoxy anchors in direct tension and overhead applications is prohibited.

The Developer shall minimize the number of deck joints wherever possible. The Developer shall locate joints to provide for maintenance accessibility and future replacement.

Longitudinal expansion joints are not allowed.

Infinite life fatigue requirements shall apply to all bridges.

Bolted field splices are allowed for use on steel girders, provided the splice plates and bolts do not encroach in the deck design thickness.

Conduit and drainage pipe shall not be cast into bridge decks.

13.3.1.10 Bridge Bearing Assemblies

Use stainless steel anchor bolts, nuts, and washers.

High Load Multi-Rotational Bearings shall be polyether urethane disc type bearings.

13.3.1.11 Approach Slabs

Reinforced concrete approach slabs shall be placed at the ends of new structures.

13.3.1.12 Foundations

The foundation design shall be based upon the requirements of the Geotechnical Technical Provisions. Any reports provided by the LA DOTD are for informational purposes only, and the LA DOTD does not certify or warranty the information contained in these reports.

13.3.1.13 Revetments

Front (longitudinal) slopes of revetments shall be 3:1 (H:V) or flatter.

Cast-in-place concrete revetments shall be provided, with the exception of revetments near streams, where riprap shall be utilized.

13.3.1.14 Bridge Barriers and Railings

Bridge barriers and railings shall be reinforced concrete and shall meet the requirements of MASH Test Level 4 (TL-4).

Concrete barrier shall be MASH TL-5 for the spans that cross pipe racks, and for a minimum distance of 100 feet in the direction of approaching traffic of that span.

13.3.1.15 Bridge Deck Drainage

Use railing drain slots for deck drainage except at the following locations:

(a) At locations that cause water to fall directly onto the Calcasieu River; Lake Charles, railroads, roadways, and private drives;

(b) At permanent median barriers; and

(c) When in conflict with aesthetic requirements.

Scuppers shall be used at other locations and designed to discharge into a piping system that will discharge from substructure units at ground or above elevation 4.3 NAVD 88 water level if up or down station of navigable channel. Scuppers shall collect deck drainage in a piping system and be conveyed to the nearest substructure unit. Drainage pipe located below bridge decks shall be located above the low member elevation and between the fascia elements such that it is not visible from an elevation perspective, except at piers and towers where drainage pipe may be visible for vertical runs.

Drainage pipe shall be designed to allow for future replacement. Routing and embedding drainage pipes within piers is prohibited. The maximum bend in the drainage pipe shall be 45 degrees. The sum of all bends in a continuous segment of drainage pipe shall not exceed 180 degrees. Cleanout access is required per every cumulative 90 degree bend.

13.3.1.16 Structural Steel

All structural steel, such as girders, cross-frames, and connections, shall be painted. Topcoat color shall be in conformance with Article 14.

The Developer shall use a zinc paint system that is in accordance with Section 811.03 of the LSSRB.

13.3.1.17 Retaining Wall Requirements

To the extent possible, the Developer shall design and construct components of the Project to provide embankments without the use of retaining walls. Where earthen embankments are not feasible, the Developer may use retaining walls.

Permanent retaining wall types and elements will be allowed only if:

(a) They have been accepted for general use by the FHWA; and

(b) The Developer can demonstrate that the design of the wall type and Elements shall meet the functional requirements of the Project.

Except as noted, metal walls (including bin walls and sheet pile walls), recycled material walls, and timber walls are not allowed.

The design of wall structures shall consider live load surcharges. The Developer shall apply the appropriate live loading condition that each wall is subjected to. These live load surcharges shall be based on the BDEM, AASHTO LRFD Bridge Design Specifications, AREMA specifications, or the requirements of the specific railroad and transit owner/operator, as appropriate. Design life shall adhere to AASHTO except for walls supporting structural loads, which shall be designed for a minimum service life of 100 years.

The retaining wall layout shall address slope maintenance above and below the wall. Weep holes are only allowed at the base of walls.

See Article 7 for global stability, MSE wall provisions, and other requirements.

13.3.1.18 Bridge Widening (Bridge B-14 and B-15)

Design for widening of B-14 and B-15 shall be as follows:

(a) Design in accordance with AASHTO LRFD Bridge Design Specifications;

(b) Bridge design live load shall be HL-93;

(c) Widened bridge shall be similar in appearance to existing structure;

(d) Design bridge widening such that dead load on existing structure is essentially unchanged and additional live load transferred to the existing structure is minimized; and

(e) Outside bridge rail shall be MASH TL-4.

As a minimum, B-14 and B-15 shall be rehabilitated as follows:

(f) Retrofit existing median blocked out guard rail as detailed in Appendix H of Louisiana Transportation Research Center, Retrofit of Existing Statewide Louisiana Safety Walk Bridge Barrier Railing Systems, Final Report 658;

(g) Replace existing joint seals;

(h) Seal existing deck and provide epoxy overlay;

(i) Structure patching / spall repair;

(j) Clean bridge and apply Class 3 concrete finish per Section 805 of the LSSRB; and

(k) Concrete barrier protection for existing and constructed pier columns for the entire width of both westbound and eastbound bridges B-14 and B-15 is not required.

13.3.1.19 I-10 Over Bayou Verdine (Bridge B-4A)

As a minimum, the existing culvert shall be rehabilitated as follows:

(a) Replace wingwalls and headwalls at both north and south ends;

(b) Clean and reseal culvert box sections; and

(c) Repair any spalling or cracking of the culvert box sections.

If the Developer follows the Basic Project Configuration, no additional structural analysis is required. If the Developer's design adds additional roadway fill above what is shown in the Basic Project Configuration, the Developer shall perform a detailed structural analysis of the culvert to determine if additional measures are needed to meet performance and Residual Life requirements.

See Article 22 for O&M responsibilities.

13.3.1.20 I-10 Over Relocated Pipe Rack (Bridge B-10A)

Design for Bridge B-10A shall accommodate the relocated Piperack as follows:

(a) Minimum 90'-0", single span bridge, approximately centered at Mainline Sta. 2464+27; and

(b) Minimum low chord elevation 10.1 NAVD 88.

(c) Concrete barrier shall be MASH TL-5 for the spans that cross the relocated pipe rack and for a distance equal to the required length of need in the direction of approaching traffic of that span.

For additional information, see Reference Documents.

13.3.1.21 EDC Contaminated Area

As generally depicted in the DB Limit drawings there are two EDC areas that present a limitation to the depth and type of the subsurface foundations to be proposed for the Project in those areas. For EDC Area 1, only driven piles shall be allowed and at a maximum driven pile depth of -65.0 ft NAVD 88 elevation. For EDC Area 2, no foundations shall be allowed deeper than a depth of -10.0 ft NAVD 88. Within EDC Area 2, EDC may be encountered within 10 feet below grade and must be handled accordingly.

Table 13-1. EDC Area Boundaries

EDC Area	Western Boundary (Station)	Eastern Boundary (Station)	Northern Boundary (Offset)	Southern Boundary (Offset)
EDC Area 1	315+50.00	326+25.00	500 feet LT	30 feet RT
EDC Area 2	311+25.00	321+75.00	30 feet RT	480 feet RT

Stations, offsets, and associated EDC Area boundaries provided in the table above are relative to the existing I-10 centerline as established in the survey alignment Reference Document, H003931 B.alg. Eastern and western EDC Area boundaries are perpendicular to the existing I-10 centerline; northern and southern EDC Area boundaries are parallel to the existing I-10 centerline.

13.3.1.22 WB and EB I-10 Ramps to West Leg of Sampson Street (Bridges B-6 and B-7)

Concrete barrier shall be MASH TL-5 for the spans that cross the relocated pipe rack and for a distance of no less than 100 feet on either side of that span.

13.3.2 Construction Requirements

Construction shall be in accordance with the LSSRB and the requirements of the Contract Documents. Construction of all necessary permanent and temporary structures shall be within the Project's ROW limits. Longitudinal construction joints shall be placed along a lane line in the final bridge cross section. The LA DOTD will inspect all bridges constructed prior to Partial Acceptance.

13.3.3 Maintenance and Inspection Requirements

Access aspects for inspection shall be considered during design and be in accordance with the BDEM. Inspection walk(s), as specified in BDEM 2.5.2.2, are not required.

Design shall account for future jacking of the superstructure for bearing replacement. Details shall be shown in Design Documents to include jack placement, jack configuration, and unfactored jacking loads.

For design of the superstructure and substructure, jack sizes and bearing plate sizes (for future bearing replacement) shall be determined based on the loads to ensure they physically fit on the pier cap and also to ensure the pier cap and superstructure components have the required structural capacity for the jacking loads in accordance with AASHTO provisions. Loads for future jacking provisions shall account for design lanes (not striped lanes).

Drone/unmanned aerial systems visual inspections are allowed subject to LA DOTD BDEM and LA DOTD Bridge Inspection Manual requirements.

Section 13.4 Submittals

See Article 24 for list of submittals.

ARTICLE 14.

AESTHETICS AND LANDSCAPING

Section 14.1 General Requirements

The Developer shall design, prepare plans and construct aesthetic treatments/enhancements for the roadway, hardscape, and landscaping Elements of the Project. Aesthetic treatments through the corridor shall be designed to harmonize with the indigenous landscape and architecture with continuity and attractiveness through the use of comprehensive aesthetic treatments.

The Developer shall provide a landscape architect. The landscape architect shall be responsible for the development of the Landscape Enhancement Plan and Hardscape Enhancement Plan for the Project and shall be a licensed Landscape Architect in the State of Louisiana.

Section 14.2 Project Standards and Reference Documents

14.2.1 Standards

a) LSSRB, Supplemental Specifications, and Special Provisions;

14.2.2 References

b) Context Sensitive Solutions and Design (CSS/D) Meeting #1 Summary Report; and

c) CSS/D Meeting #2 Summary Report.

Section 14.3 Aesthetic Concept Plan

The Developer shall prepare an Aesthetic Concept Plan that details the Developers plans and approach to the aesthetic design of the New Bridge, other structures, landscapes, and hardscapes throughout the Project. In the development of the Aesthetic Concept Plan, the Developer shall consider a practical conceptual approach to aesthetic design of structures, hardscape, and landscape, particularly considering the Context Sensitive Solutions and Design (CSS/D) Meeting #1 and Meeting #2 Summary Reports and the design solutions of recent LA DOTD projects identified below, and taking into account the LA DOTD's obligation to be effective stewards of public funds and implement cost-effective design solutions, balancing form and function.

(a) S.P. No. H.003454 Lafayette Connector

(b) S.P. No. H.004100 I-10: LA 415 to Essen on I-10 and I-12

(c) S.P. No. H.011111 I-49 North Segment K - Phase 2

(d) S.P. No. H.011670 I-10 / Loyola Interchange Improvement

The LA DOTD shall make the final decision on aesthetics.

The Developer shall submit an Aesthetic Concept Plan for Approval. The Aesthetic Concept Plan shall provide guidelines and requirements for all Elements to fully communicate the proposed aesthetic concepts and treatments for Approval. The draft Aesthetic Concept Plan shall be submitted to the LA DOTD no later than 90 days after receipt of NTP. The final Aesthetic Concept Plan shall be submitted to the LA DOTD within 45 days after receipt of the LA DOTD's draft plan comments.

14.3.1 Landscape Enhancement Plan

The Aesthetic Concept Plan shall include a Landscape Enhancement Plan which must be Approved prior to construction of any affected Elements. The Landscape Enhancement Plan for the Project shall include at the following, at a minimum:

(a) A plan that indicates plant palettes; locations of plants; plant types; typical planting details; and dates for seeding, sodding, and planting installation;

(b) A maintenance program; and

(c) Composite drawings of all utilities and easements that would interfere with landscaping, gateways, markers, or any other identified enhancements.

14.3.2 Hardscape Enhancement Plan

The Aesthetic Concept Plan shall include a Hardscape Enhancement Plan which shall provide guidelines and requirements for the hardscape design of the Project. The Hardscape Enhancement Plan shall include all Elements to fully communicate the proposed design theme.

The Hardscape Enhancement Plan must be Approved prior to construction of any affected Elements. The Hardscape Enhancement Plan of the Project shall include the following, at a minimum:

(a) A design narrative that describes the contextual influences, design intent, and the aesthetic features that are included in the plan.

(b) A master plan that will convey the layout of the various roadway features included by the Developer, e.g., where the depressed sections, elevated sections, and at-grade roadways are located; as well as where there are bridges, retaining walls, curtain walls, sound barriers, sign structures, and other structure components;

(c) Drawings showing where site-specific Elements are located, e.g., fences, signage, potential locations of community improvement opportunity areas, gateway markers, control buildings, bridge enhancements, retaining wall treatments, slope paving, (landscaping for reference), etc.; and

(d) Illustrative exhibits including rendered plans, rendered typical sections, elevations, and perspective graphics defining and illustrating the aesthetic enhancements. Renderings shall illustrate true textures, forms and colors of all proposed Elements.

(e) Color and texture matrix summarizing aesthetic enhancements for all hardscape Elements of the Project and their locations.

The completed Hardscape Enhancement Plan shall provide guidelines and requirements for the final engineering and development of the highway corridor aesthetics. The guidelines shall serve as the primary standard guidance necessary to produce the intended aesthetic form, function, and appearance of this and potential future Projects.

14.3.3 Structures Enhancement Plan

The Aesthetic Concept Plan shall include a Structures Enhancement Plan which shall provide guidelines and requirements for the structures design of the Project. However, the Structures Enhancement Plan for the Project shall incorporate the following, at a minimum:

(a) All Class 3 concrete surface finish color shall be tinted to match SAE AMS-STD-595A color number 30372, except for the New Bridge;

(b) For proposed new concrete, the Class 3 concrete surface finish limits of BDTM.72 and Special Details should be extended as deemed appropriate to provide enhanced aesthetics to structure areas visible by the traveling public;

(c) Exposed surfaces of existing structures which are rehabilitated or widened shall be cleaned, repaired, patched, and have Class 3 surface finish applied. Apply Class 3 surface finish in accordance with the table in BDTM.72, titled "Concrete Surface Finish Application Guidelines."; and

(d) Structural steel topcoat color shall be tinted to match "Khaki (Steel)" SAE AMS-STD-595A color number 30372 in accordance with Section 811 of the LSSRB, Table 811-1. Unless specified otherwise, provide a gloss finish for top coat. The color numbers in Table 811-1 are for pigment color matching purposes only.

14.3.4 Aesthetic Simulations

The Aesthetic Concept Plan shall include photo-realistic renderings illustrating the aesthetic design intent of the infrastructure and associated landscape improvements.

The LA DOTD in coordination with the Developer will determine the view locations for the renderings that best illustrate the Developer’s proposal and communicate the intent to the LA DOTD and the public. View locations will be confirmed with the LA DOTD Project Manager prior to the commencement of the task.

The Developer will prepare a minimum of 14 photo-realistic renderings for the proposed solution to accurately illustrate the completed Project within the context of the local landscape. Simulations will fully illustrate the aesthetic treatments applied to all functional Elements of the Project visible during day and nighttime. Seven example rendering locations are noted below, which describe desired context and general content of each rendering; however, final rendering locations will be determined as noted above.

(a) View of the New Bridge from western-most point of Lake Charles Beach Picnic Area looking west along south bridge elevation. Image to include all infrastructure Elements, substructure, river crossing, roadway and decorative lighting, signage, navigation lighting, fenders, vehicle barriers, railings, and existing riverbank development for context (one daytime image and one nighttime image);

(b) View of the New Bridge as viewed from the center of the navigation channel, plus or minus 1,200 to 1,500 feet south of new structure location. Perspective will include all infrastructure Elements, roadway and decorative lighting, signage, navigation lighting, fenders, vehicle barriers, railings, and existing riverbank development for context (one daytime image and one nighttime image);

(c) Close-up view of main span over navigation channel as viewed from water surface approximately 500 feet away from the centerline of the New Bridge (one daytime image and one nighttime image);

(d) View of New Bridge from Railroad Avenue north of corridor view, including approach spans and river crossing. Images to include decorative lighting, signage, street lighting, at-grade pavements, walkways, railings and substructure treatments, and faux (curtain) walls etc. as viewed from at-grade locations (one daytime image and one nighttime image);

(e) Close-up view of substructure Elements of approach spans and streetscape improvements as viewed from Miller Avenue. Images to include decorative lighting, signage, street lighting, at-grade pavements, walkways, railings and substructure treatments, and faux (curtain) walls etc. as viewed from at-grade locations (one daytime image and one nighttime image);

(f) Eastbound driver's view of Project Elements proximate to Sampson Street, plus or minus 1,000 feet west of the overpass. Perspective will include all infrastructure Elements, walls, lighting, signage, signals, vehicle barriers, ramp structures, and landscape along both sides as well as cross- street overpass structure in the fore ground (one daytime image and one nighttime image);

(g) Close-up view of Samson Street overpass and ground plane improvements as viewed from the freeway travel lanes. Images to include decorative lighting, signage, street lighting, gateways, walkways, railings and substructure treatments, and faux (curtain) walls etc. as viewed from at-grade locations (one daytime image and one nighttime image); and

(h) The still images shall be produced at high level of quality with a minimum DPI of 300 and the following file types: Image.JPG, Image. TIF, or Image.PNG. Image sizes shall be suitable for posting on Project web site and for viewing by the general public using normal internet speeds.

14.3.5 Video Simulation

The Developer shall prepare two photo-realistic video simulations of the Project Elements as seen from the driver's eye. Prior to the commencement of the task, the Developer with coordinate with the LA DOTD Project Manager to determine the final locations/limits of video simulations that best illustrate the Developer's proposal and communicate the intent to the LA DOTD and the public. The draft videos will be submitted to the LA DOTD for Approval no later than 180 days after NTP. The final videos will be submitted for the LA DOTD's Approval 60 days after receipt of the LA DOTD's review comments and direction. Potential example

locations/limits for the two videos are described below; however, final locations/limits of video shall be determined as noted above.

(a) The first video simulation will commence at the start of the proposed improvements at the I-10/I-210 interchange and proceed east along I-10 to the end of the proposed improvements proximate to Ryan Street.

(b) The second video will be prepared of the same corridor as viewed from the west bound driver's perspective commencing at the Ryan Street and proceeding to the end of the proposed improvements at the I-10/I-210 interchange.

(c) The videos will feature the proposed aesthetic treatments for all Elements and the main river crossing bridge type.

(d) Both daytime and nighttime versions of each video will be prepared to illustrate the decorative lighting and general illumination of the corridor as perceived by the motoring public.

(e) The videos will be produced to simulate the view as perceived at the driver's eye level and at posted highway traffic speeds.

(f) The videos shall be a presentation quality product for use in public informational meetings, agency discussions, and for the LA DOTD's internal uses.

(g) The video size shall be appropriate for posting on the Project web site and viewing by the general public with normal internet streaming speeds.

(h) The video shall be produced at high-definition level of quality of 30 frames per second with a minimum resolution of 720p and the following file types: Video. P4 or Video.MOV.

Section 14.4 Performance Requirements

14.4.1 Design Requirements

14.4.1.1 Aesthetic Concept Plan Principles and Strategies

The Developer shall follow the guidelines and requirements of the approved Aesthetic Concept Plan, including the following:

(a) The design shall minimize impacts on the existing natural environment to the extent possible;

(b) Unmanaged woods, existing trees, and rock outcroppings riverbanks, and natural back water bank edges shall be preserved to the greatest extent possible;

(c) The Project shall be complementary to the indigenous landscape to the fullest extent possible;

(d) Simple geometric shapes for structures shall be used to the extent possible for continuity along the entire length of the Project;

(e) All structures shall be carefully detailed to achieve the greatest level of quality and fit within the regional context;

(f) Color, texture, and form shall be used consistently for all structures;

(g) Where color is used for concrete features, the Developer shall use a surface applied Class 2A Special Surface finish as specified in LSSRB Section 805 Structural Concrete.

(h) Graphics, signage, and lighting shall be consistent along the entire length of the Project;

(i) Embellishment Elements shall be fully integrated with the overall landscape design;

(j) Landscape Enhancement Plans shall conform to the LA DOTD's specifications, policies, and procedures;

(k) Visual quality of the landscape shall be consistent along the entire length of the Project;

(l) Embellishment Elements shall be easy to maintain and provide protection from vandalism and graffiti; and aesthetics shall not interfere with safety, constructability, and maintenance of the facility; and

(m) The Aesthetic Concept Plan shall identify all Elements or components of the design that are to be included in the Non-Maintained areas (areas of ROW that will be returned to the LA DOTD or others once substantial completion and final acceptance are achieved) and the Handback portions of the Project. Limits of these areas shall be defined as illustrated on the DB Limits and O&M Limits, respectively.

14.4.1.2 Walls

The Developer shall design retaining/structural/sound barrier/faux (curtain) walls to be similar in color, texture, and style that are consistent with other Elements present in the entire Project such as structures, landscaping, and other highway components. The Developer shall apply aesthetic treatments to the vertical surfaces of retaining/faux (curtain) and sound barrier walls where the surface is visible from roadways or adjacent developed properties. Consistent treatments shall be used for retaining/faux (curtain) and sound barrier walls that articulate the design themes established for the Project. The Developer shall pay special attention to themed design embellishments and use high-quality finishes and materials at interchanges and local cross-street underpass locations.

14.4.1.3 Bridges

The LA DOTD has had discussions with the affected stakeholders concerning aesthetic objectives for the Project. New Bridge aesthetics proposed by the Developer are to be informed by the information contained in the CSS/D summary based on the community coordination related to aesthetics completed during the DEIS phase of the Project.

14.4.1.4 Trees, Shrubs, and Other Plant Materials

Trees, shrubs, and other plant materials shall comply with applicable requirements in the LSSRB Section 719.

14.4.1.5 Lighting

The Developer shall design the lighting with the following embellishment criteria:

(a) One pole type for the entire Project; and

(b) The Developer shall provide a lighting layout plan that addresses each type of light fixture (e.g., roadside lighting, high mast lighting, wall pack) and type of luminaire (e.g., light-emitting diode [LED], high-pressure sodium [HPS], induction, metal halide). The draft lighting layout plan shall be submitted no later than 120 days after NTP. The final lighting layout plan shall be revised and submitted within 30 day of receipt of the LA DOTD review comments.

14.4.1.6 Maintenance/Traffic Control Buildings

If maintenance or traffic control buildings are built, the Developer shall illustrate a proposed concept design and work with the LA DOTD to refine the concept for Approval for all building structures as part of the Project's Hardscape Plan. The control facilities, vent stacks, power centers, or any other structure that require the seal of a registered architect, shall include the preparation of concept plans and materials samples for Approval.

14.4.1.7 Intersection Hardscape

When designing and constructing hardscape Elements at intersections, at a minimum, the Developer shall use colored textured concrete in all raised medians. Monolithic concrete medians will not be accepted.

14.4.1.8 Miscellaneous Concrete Paving

Concrete paving 4 inches deep by 24 inches wide minimum shall be used in hard-to-reach mowing areas or under structures (such as, but not limited to areas near, next to, or between guard fence posts, sign posts, high mast light bases, and bent columns; and/or next to retaining walls, ramp gores, paved ditches, flumes, ditch inlets) to improve roadway appearance.

14.4.2 Construction Requirements

Prior to start of production of any embellishment Element, the Developer shall provide samples, mockups, or catalog cuts for Approval. Mockups shall be sufficiently sized for the LA DOTD to fully understand/visualize the appearance of the embellishment. The mockups and or samples shall accurately represent the proposed textures, chamfers, forms, and design character for each element of the design. The Developer shall propose mockup size(s) for Approval on a case-by-case basis. The Developer shall provide the LA DOTD sample panels of textured concrete surfaces a minimum of 60 days in advance of Commencement of Construction.

Section 14.5 Submittals

See Article 24 for list of submittals.

ARTICLE 15.

AESTHETIC LIGHTING

Section 15.1 General Requirements

The Developer shall design, prepare plans and construct aesthetic lighting for the Project. The aesthetic lighting for this Project shall balance the desire to accent the major structural components of this Project, creating an iconic element in the Calcasieu Parish, and avoid disruptive impacts lighting may have on residents and flora and fauna in the area of the new bridge. The design shall also create a comfortable, inviting, and visually interesting environment that is distinctive to the parish and enhances safety and security.

The aesthetic lighting for the bridge comprising the New Bridge. The lighting systems for the roadways and sidewalks associated with these areas are covered under Article 16. The lighting shall include a control system allowing for control of the color of the lighting (using red green blue white [RGBW] or red green blue amber [RGBA] luminaires), output of the lighting, and preprogrammed effects and static colors.

The lighting system shall be coordinated with other Articles including:

(a) Aesthetics and Landscaping;

(b) Electrical, Highway, and Bridge Lighting;

(c) Environmental; and

(d) Structures.

Section 15.2 Project Standards and References

(a) LSSRB, Supplemental Specifications and Special Provisions;

(b) AASHTO Standard Specifications for Structural Supports for Highway Sign, Luminaires, and Traffic Signals;

(c) LA DOTD A Guide to Constructing, Operating, and Maintaining Highway Lighting Systems; and

(d) Illuminating Engineering Society (IES) Lighting Handbook HB-10-11;

Section 15.3 Performance Requirements

15.3.1 Bridge Lighting

Bridge lighting elements include accent lighting on piers, bridge deck, pylons or cables used on the superstructure, or other strong structural feature of the bridge. The lighting levels applied to these items should be in accordance with the IES Handbook recommendations for exterior facades located in similar locations.

The Developer shall propose lighting solutions and present them to the LA DOTD for consideration. The type of bridge design will shape the lighting treatments available for the structure and the ones best suited for it. Designs may include the following:

(a) Floodlighting of major elements such as piers, towers, and cables;

(b) Color change light guides incorporated into stylized poles and pylons; and

(c) Generalized color change washing of surfaces and elements.

The control system shall use either digital multiplex (DMX) or digital addressable lighting interface (DALI) control to allow color change effects for the bridge, tuning the amount of light applied to the surfaces, compensation for light loss factors, and changing spectral content based on time of year or the LA DOTD's desire, and potentially turning off the aesthetic lighting at environmentally sensitive times like bird migrations and nesting.

15.3.2 Environmental Impacts

Exterior lighting systems have certain impacts, including light trespass, creation of sky glow, and impacts on flora and fauna in the areas where they are installed. Mitigation of these impacts can be accomplished in several ways including proper shielding and aiming, adjustment of spectral content of the lighting source, and dimming and turning off lighting systems at certain times of night or year. The aesthetic lighting system for the New Bridge shall address these issues and provide proper mitigation by the means included above. Design shall address, but not be limited to, the following key issues:

(a) Impact to birds and proximity to the Mississippi flyway;

(b) Skyglow issues created by aesthetic lighting equipment, including spill light, increased atmospheric reflection of shorter wavelength spectral content, and control of any applied uplight;

(c) Impact to wildlife species in the area and disruption to that species including situations like turtle nesting grounds or fish spawning; and

(d) General light trespass and impacts on abutters.

Section 15.4 Design Analysis

The design analysis for this Project shall include lighting calculations for all the surfaces on the New Bridge using the photometric file of the proposed fixtures at full output white.

The lighting levels should be in accordance with the IES Handbook for façade lighting. The design shall be performed in AGI32, and the AGI32 files and the used photometric files shall be submitted for Approval. Catalog cuts for all the luminaires and catalog cuts for the proposed control system shall be submitted with the calculations.

Section 15.5 Visualizations

Visualizations shall be submitted for Review and Comment. The visualizations shall be for the aesthetic lighting options being proposed for the New Bridge structure as

outlined in Article 14. The visualizations illustrating the nighttime lighting treatments shall be prepared in 3D Studio Max or equivalent modeling software and use the proposed lighting photometric files. Renderings shall include three different color options. Photoshop or other image manipulation software is not a suitable option for finished visualizations.

Section 15.6 Environmental Impact Report

A report discussing the environmental impacts the lighting system may have and the mitigation means to address those impacts shall be submitted with the proposed design. The report shall include possible impacts to wildlife in the area, as well as light trespass and skyglow issues. The report shall also include shielding and control options for the lighting system and be reflected in the design analysis and visualizations submitted.

Section 15.7 Maintenance Manuals

Maintenance manuals shall be submitted for all of the proposed equipment.

Section 15.8 Submittals

See Article 24 for list of submittals.

ARTICLE 16.

ELECTRICAL, HIGHWAY AND BRIDGE LIGHTING

Section 16.1 General Requirements

The Developer shall design, prepare plans, and construct all lighting for the Project, including the transportation-related permanent and temporary roadway lighting for roadway surfaces, under-deck lighting, maintenance lighting, navigation and aviation obstruction lights, aesthetic lighting, and lighting of local streets and service roads. The Developer shall replace existing lighting and install new lighting within the DB Limits.

The Developer shall coordinate with the responsible Utility and pay all fees for the provision of electricity for the Project and perform all Work with respect to electrical power and lighting.

The Developer shall provide separate electrical services and metering to power the bridge aesthetic lighting, mainline roadway lighting, and local streets and service roads on each jurisdiction within the Project such that the services can be metered for the appropriate entity. See Exhibit 22-3 for responsibilities for reoccurring electrical consumption charges.

Section 16.2 Project Standards and References

The Developer shall perform all electrical Work according to the standards listed in Table 16-1, and with applicable Utility standards related to certain Utility Owners.

Table 16-1. Standards

No.	Organization	Name
1	AASHTO	Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals
2	LA DOTD	Utilities Manual
3	LA DOTD	Statewide ITS Special Provision/General Application
4	American National Standards Institute (ANSI)/ IESNA	G-2-10 Guideline for the Application of General Illumination (White) Light-Emitting Diode (LED) Technologies
5	ANSI/IESNA	RP-8-21 Design and Maintenance of Roadway and Parking Facility Lighting
6	AASHTO	GL-7 Roadway Lighting Design Guide
7	FHWA	Lighting Handbook

No.	Organization	Name
8	IESNA	DG-19 Design Guide for Roundabout Lighting
9	IESNA	Lighting Handbook
10	IESNA	TM-10-00, Addressing Obtrusive Light (Urban Sky Glow and Light Trespass) in conjunction with Roadway Lighting
11	IESNA	TM-11-00, Light Trespass: Research, Results and Recommendations
12	IESNA	TM-15-11 Luminaire Classification System for Outdoor Luminaires
13	IESNA	Model Lighting Ordinance
14	LA DOTD	A Guide to Constructing, Operating, and Maintaining Highway Lighting Systems
15	NESC	National Electrical Safety Code
16	NFPA	NFPA-70 National Electrical Code
17	NFPA	NFPA-70E Standard for Electrical Safety in the Workplace
18	Underwriter Laboratories	UL 1598 Standard for Luminaires
19	Underwriter Laboratories	UL 8750 Standard for Light-Emitting Diode (LED) Equipment for Use in Lighting Products
20	ASCE/SEI 7	Minimum Design Loads and Associated Criteria for Buildings and Other Structures
21	IAEI	Soares Book on Grounding and Bonding
22	USCG	Bridge Administration Manual COMDTINST M16590.5 (where applicable)
23	CFR	Title 33 "Navigation and Navigable Waters," Chapter I “Coast Guard, Department of Homeland Security,” Subchapter J “Bridges,” Part 118 “Bridge Lighting and Other Signals,” and all other applicable sections of CFR Title 33, Part 118
24	AASHTO	Roadside Design Guide RSDG-4

Section 16.3 Performance Requirements

16.3.1 Design Requirements

16.3.1.1 Electrical Design

(a) All power and lighting Work must comply with the National Electrical Code and the Institute of Electrical and Electronics Engineers (IEEE) or ANSI power engineering standards. All outdoor electrical enclosures and attached parts, including breather drains, must be rated NEMA 4X or better.

(b) The Developer shall maintain electrical supply to infrastructure, including existing street lighting, or existing ITS power throughout construction of the Project.

(c) The Developer shall obtain Approval prior to discontinuing electrical supply to facilities prior to commencing any such Work. The Developer shall remove from the Site any extraneous electrical supply components that are not needed for operation of the proposed electrical systems.

(d) All power design and calculations must be signed and sealed by a professional electrical engineer licensed in the State of Louisiana.

16.3.1.2 Lumination and Illumination Design

(a) The Developer shall design all components of the lighting system for the Project to provide a complete and functional coherent unified lighting system along the mainline, interchanges, ramps, Sampson Street, and where applicable, extend out to interface with adjacent existing lighting systems. For new lighting and when connecting to existing equipment, the Developer shall use separate service drops. The Developer shall ensure power systems deliver continuous power beginning not later than Partial Acceptance of the Project and through the remainder of the Term.

(b) The Developer shall segregate lighting circuits based on the requirements of the Governmental Entities having jurisdiction.

16.3.1.3 Equipment

The Developer shall design new lighting power controllers, foundations, luminaires, light poles, lightning protection, junction boxes, electrical conduit installations, and other essential electrical equipment according to the LA DOTD Standard Specifications and the LA DOTD Standard Plans and Special Details. High-mast lighting may be applied at interchange locations. The Developer shall apply traditional roadway lighting on bridges and sections of roadways without interchanges.

16.3.1.4 Bridge Navigation Lights

All bridge navigational lighting, including all lighting required by the USCG, must comply with the requirements in Article 13. Navigational lighting must have a dedicated power source separate from roadway lighting and aesthetic lighting systems.

16.3.1.5 Bridge Aerial Beacons

All bridge aerial beacons, including all lighting required by the Federal Aviation Authority, must comply with the requirements in Article 13. Bridge aerial beacons must have a dedicated power source separate from roadway lighting and aesthetic lighting systems.

16.3.1.6 Tolling System Lighting

The tolling system for the Project is described in Article 21. Additional lighting may be required at the toll gantries depending on the tolling equipment used. The Developer shall provide adequate lighting in the areas of the tolling equipment to meet the needs of the equipment being provided. Tolling system lighting must have a dedicated power source separate from roadway lighting and aesthetic lighting systems.

16.3.1.7 Light Levels

(a) Interstate Sections:

(i) The Developer shall provide roadways with luminance levels and uniformity ratios according to ANSI/IES RP-8 for a Freeway Class A. The Developer shall provide luminance and illuminance levels and uniformity ratios for exit and entrance ramps and associated conflict areas according to the ANSI/IES RP-8 for a Freeway Class A.

(b) Intersections:

(i) The Developer shall provide roadways with illuminance levels in foot candles and uniformity ratios according to the ANSI/IES RP-8 for a "Major/Major" or "Major/Collector with Pedestrian Area Classification" as appropriate. The Developer shall include a justification statement for the selected "Pedestrian Area Classification."

(c) Light Trespass

The Developer shall design roadway lighting that minimizes light trespass in the form of sky glow and spill light. The Developer shall mitigate sky glow by using fixtures that have a "U" or up-light rating of 0 (per the IES TM-15-11, LCS method). The Developer shall provide illuminance levels in foot candles that do not exceed the values found in the IES RP-8-21 at all ROW boundaries for the following zones:

(A) Zone LZ3: As applicable.

(B) Zone LZ2: As applicable.

16.3.1.8 Roadway Lighting Calculations

The Developer shall perform lighting calculations for all lighting areas, locations, and spaces according to the ANSI/IES RP-8. The Developer shall use the current version of AGi32 software for all lighting calculations. The Developer shall perform roadway lighting calculations in accordance with ANSI/IES RP-8 as applicable.

(a) Lighting analysis must include:

(i) Computerized horizontal luminance and illuminance levels as per RP-8 specifications and measured from pole to pole throughout the Project;

(ii) Average maintained, maximum, and minimum values;

(iii) Veiling luminance ratios; and

(iv) Average/minimum and maximum/minimum uniformity ratios.

(b) The Developer shall use the following criteria to perform computerized calculations:

(i) Specific IES file submitted for each lighting fixture type to be clearly referenced;

(ii) Roadway type reflectance (r-Table);

(iii) Roadway barriers reflectance;

(iv) Light Loss Factor (LLF) applied based on 10,000 operational hours and dirt depreciation of 10 years of exposure;

(v) Specific roadway geometry, including the use of State Plane coordinates as well as designed roadway and luminaire elevations;

(vi) Illuminance levels in foot candles for each roadway lighting zone; and

(vii) Distribution data according to ANSI/IESNA classification type, as defined in IESNA Lighting Handbook.

16.3.1.9 Lighting Analysis Report

The Developer shall prepare a Lighting Analysis Report for Review and Comment that includes:

(a) Cover page;

(b) Table of contents;

(c) Background information;

(d) Assumptions using manufacturer data for each luminaire;

(e) Lighting calculations, including AGi32 printouts;

(f) Luminaire schedule and all calculation summary sheets;

(g) Lighting control center electrical load calculations;

(h) Roadway lighting voltage drop calculations;

(i) Arc Flash Hazard Analysis; and

(j) All other calculations.

16.3.1.10 Electrical Analysis

The Developer shall perform electrical load calculations for each lighting control center. The Developer shall perform roadway lighting voltage drop calculations for each roadway lighting circuit. The maximum voltage drop between the final luminaire and the transformer must not exceed 5%.

All circuit breakers must be sized to 125% of the maximum continuous load. Wire size must not exceed #1/0 American Wire Gauge (AWG) for any conductor to be pulled into a light pole base. The minimum size for in-ground conductor must be #6 AWG. Conductor for underpass luminaires must be #10 AWG for any raceway under the New Bridge.

16.3.1.11 Lighting Systems Plans

(a) The Developer shall prepare Lighting System Plans for the Project that must show all existing and new electrical equipment, all details, pole schedules, conductor, and lighting circuit schedules, distribution schedule for each lighting service, notes, and special provisions. The Lighting System Plans must include information regarding conduit used to intercept existing circuits to be used for new lighting and new conduit crossing locations for median lighting.

(b) The Developer shall not perform any Work in an existing junction box. The existing junction box must either be removed, or an additional box must be installed for splicing required conductor.

(c) Conventional luminaire locations shall follow requirements of AASHTO GL-7 Roadway Lighting Design Guide and AASHTO Roadside Design Guide RSDG-4.

(d) Lighting System Plans must identify all required duct installations for road bores. All bores beneath roadways must be in 6-inch high-density polyethylene (HDPE) ducts installed 10 feet below grade. Road bores under driveways, unless designated for commercial vehicles, must be in 4-inch HDPE ducts.

(e) The Developer shall design or use all poles, bases, foundations, and luminaires for roadway lighting to withstand wind gusts according to ASCE/SEI 7 Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

(f) The Lighting System Plans must also include lighting summary sheets giving the location of the light poles, pull box, load centers, and the conductor summary.

(g) The Developer shall submit the Lighting System Plans to the LA DOTD in accordance with Article 24.

16.3.2 Construction Requirements

16.3.2.1 Electrical

(a) All electrical Work performed by the Developer shall be performed by or under the supervision of a master electrician. At least one in every six members of a work crew performing installation of required electrical hardware shall be a journeyman electrician.

(b) The Developer shall select conduit and raceways to fit the application of the location and as required for the longevity and maintainability of the equipment throughout the Term. For example, all exposed raceways and conduits on the New Bridge may be polyvinyl chloride (PVC)-coated aluminum or fiberglass conduit.

External structure mounted conduits may be used for lighting functions as long as they are hidden from view (e.g., hidden by the exterior girder). Embedding conduit in barriers is allowed as long as structural capacity checks are made.

The Developer may install short runs of liquid-tight flexible metal conduit only to make a final connection between the main power feeder and a light pole or fixture.

16.3.2.2 Lighting

(a) General

(i) The Developer shall maintain existing lighting levels during construction where existing lighting exists.

(ii) Navigational lighting steel must be galvanized according to ASTM A123 with a coating thickness grade of 100.

(iii) The Developer shall submit shop drawings for all roadway lighting related equipment in accordance with Article 24.

(b) Temporary Lighting

(i) All existing lighting serving all roadways available for the LA DOTD operation and use must remain in operation unless temporary lighting is provided. The Developer shall provide and maintain temporary lighting for all construction work areas.

(c) Permanent Lighting

(i) All existing and new roads and parking area light poles must be new with new luminaires and new branch circuit wiring and raceway. All permanent lighting must be installed according to the LA DOTD Standard Specifications and the LA DOTD Standard Plans and Special Details, and the manufacturer's recommendations. The Developer shall provide the LA DOTD with a layout indicating the proposed location of such items prior to placing any permanent lighting.

16.3.3 Maintenance Requirements

16.3.3.1 Lighting Maintenance Manual

(a) The Developer shall prepare a Lighting Maintenance Manual for roadway lighting and a separate manual for aesthetic lighting for Review and Comment that includes:

(i) Cover page;

(ii) Table of contents;

(iii) Operational instructions;

(iv) Troubleshooting instructions and Emergency maintenance procedures;

(v) Details of inspection intervals and extent of inspection for all components;

(vi) Detailed procedure of inspection, maintenance, and replacement operations;

(vii) Manufacturer's proprietary literature for each piece of electrical/illumination equipment installed on the Project;

(viii) Relevant data sheets and electrical diagrams, including location, make, type, and dimension;

(ix) Equipment list;

(x) Access procedures;

(xi) Spare parts list;

(xii) List of suppliers with address, email, and telephone numbers;

(xiii) As-Built Plans and records;

(xiv) Procedures regarding how the components can be replaced;

(xv) Test certificates; and

(xvi) Any relevant reference documentation.

Section 16.4 Submittals

See Article 24 for list of submittals.

ARTICLE 17.

SIGNING, PAVEMENT MARKING, AND SIGNALIZATION

Section 17.1 General Requirements

The Developer shall design, prepare plans, and construct all new Traffic Control Devices and supports for the Project that provide for a safe and efficient traffic flow and operations. Any existing Traffic Control Devices and supports outside the DB Limits in conflict with the Developer's design plan shall be modified, removed, and/or replaced to ensure the integrity of the roadway system by the Developer.

The Developer's design shall include the locations of all Traffic Control Devices and supports including proposed ground-mounted and over signs; graphic representation of all signs; proposed temporary and permanent pavement markings; delineation placement; guide sign and special sign details; clearance diagrams; traffic signal poles; mast arms and wiring; and structural and foundation requirements of the ground-mounted signs, overhead mounted signs, and traffic signals.

Section 17.2 Project Standards and References

17.2.1 Standards

(a) LA DOTD Roadside Traffic Signs, including Special Detail A and B;

(b) LA DOTD Overhead Traffic Signs;

(c) LA DOTD Standard Plans and Special Details;

(d) MUTCD;

(e) LA DOTD Traffic Engineering Manual;

(f) LSSRB, Supplemental Specifications, and Special Provisions;

(g) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals;

(h) 2004 Edition Standard Highway Signs and Markings, 2012 Supplement;

(i) LA DOTD Sign Manual;

(j) LA DOTD EDSM;

(k) LA DOTD Traffic Signal Manual;

(l) LA DOTD Traffic Control Standard Number 18A;

(m) LA DOTD Software and Deliverable Standards for Electronic Plans; and

(n) LA DOTD Traffic Signal Standards.

17.2.2 References

(a) LA DOTD BDEM and BDTMs;

(b) LA DOTD Signing and Marking Design Guidelines;

(c) AASHTO Roadside Design Guide;

(d) LA DOTD Interstate Guide Signs; and

(e) AASHTO Policy on Geometric Design of Highways and Streets.

Section 17.3 Performance Requirements

17.3.1 Permanent Signing and Delineation

Prior to any sign and/or support installation, the Developer shall prepare an Engineering Reasoning and Decision Document (ERDD) for Approval. As outlined in the LA DOTD Sign Manual, the ERDD shall include field inventory documentation, a summary of existing sign conditions, proposed sign placement with reasoning, shop drawings, support determinations, and design exceptions, if applicable.

Any existing signs impacted by the Project, or in conflict with proposed Traffic Control Devices shall be replaced with new Traffic Control Devices. Existing sign support structures with a structural rating of 5 or below shall be replaced if the proposed design requires the structure. Sign support structures without a rating or a rating above 5 shall be evaluated by the Developer for reuse or replacement. All ground mounted signs and supports within the DB Limits shall be replaced. All sign faces within the DB Limits shall be replaced.

Signs and supports shall be located in a manner that avoids conflicts with other signs, vegetation, Dynamic Message Signs (DMS), lighting, and structures. The Developer shall ensure that signs are clearly visible, provide clear direction and information for users, and comply with all applicable requirements. The Developer shall ensure that placement, construction, and installation activities of signs and supports avoids impacts to water of the United States.

The Developer shall ensure that all sign installations meet or exceed appropriate sight line requirements and standards. All signs and supports shall be designed and located to ensure that they and any existing LA DOTD Traffic Control Devices affecting the proposed Project meet and/or exceed the minimum sight distance and any other Traffic Control Device spacing and line of sight requirements of the MUTCD or the LA DOTD Signing and Marking Design Guidelines.

The addition of sign attachments and structures on any existing roadway bridge shall not be permitted. Sign attachments and structures may be mounted to new bridge structures. The bridge structures shall be designed for the additional loads and forces the sign attachments and structures will induce on the bridge structure and substructure, including but not limited to: dead load, live load, wind load, ice load, and vibration. Loads shall be developed in accordance with AASHTO LRFD Standard Specifications for Highway Bridges, 17th Edition

and the AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. Where possible, structure mounted overhead sign supports and fascia mounted sign supports should be avoided.

For design purposes, the I-10/I-210 interchange shall be considered a major interchange. All other interchanges are considered intermediate interchanges.

For signs and supports located outside the Project's proposed or existing ROW but within a public ROW and required for the proposed improvements, the Developer shall install the new signs and supports in the existing ROW controlled by local or other Governmental Entities. The Developer shall coordinate with applicable Governmental Entities for the design and installation of such signs and supports.

In addition to the warning, regulatory, and guide signs within the Project, the LA DOTD or other Governmental Entities may allow specific service signs, such as logo signs, to be installed. The Developer shall coordinate and cooperate with the LA DOTD or any third party performing such work. The Developer shall remove and remount any logo sign that conflicts with a proposed sign installation and shall provide proper sign spacing in accordance with the LA DOTD Signing and Marking Guidelines and the MUTCD.

Signing availability and impacts must be realized in a way that avoids conflict with construction sequencing.

Overhead sign structures and structure-mounted sign structures shall be subject to Review and Comment. All sign shop drawings shall be subject to Approval prior to installation.

If additional property is needed to place any required signs(s), the Developer shall acquire the additional property as Developer-Proposed/Developer-Acquired ROW. Developer-Proposed ROW is defined as any proposed property required for the placement of any sign beyond any existing ROW. Developer-Acquired ROW is defined as the acquisition of property required for any sign placement beyond any existing ROW. Any Developer-Proposed/Developer-Acquired ROW acquisitions not provided in the Approved environmental and ROW documents must be Approved by the LA DOTD and FHWA, if required.

17.3.2 Permanent Pavement Marking

Before placing any permanent pavement markings, the Developer shall provide for Review and Comment, a permanent pavement marking plan indicating the proposed locations of all permanent pavement markings, including type, color and width of striping, and type and color of raised pavement markings. Contrasting black borders shall be used around pavement markings on all concrete surfaces.

The Developer shall install required pavement markings on all pavement courses before any roadway is opened to traffic. Shop drawings shall be submitted to the LA DOTD prior to any installation of pavement markings. The Developer shall design and construct permanent pavement markings in accordance with the MUTCD.

17.3.3 Permanent Signalization

17.3.3.1 Signalization

The Developer shall contact the LA DOTD to determine if proposed traffic signals are part of a coordinated system or an isolated signal. If the signal is part of an existing coordinated system, the Developer shall ensure the proposed signal components are compatible with the existing system. The Developer shall provide coordination plans in the same format as the maintaining agency.

Synchro/Sim Traffic or other simulation modeling software as required by the maintaining agency will also be required for the AM, PM, and off-peak hours to demonstrate proposed timings and offsets will operate to minimize delay within the existing system.

For software analysis, it may be necessary to collect traffic counts at the proposed new signal location or at other intersections that are part of the coordinated system.

No luminaires shall be installed on State-owned signal poles unless a maintenance agreement is active with the local agency to maintain them. For signals that are not State owned, luminaires can be installed at the local agency's request.

The Developer shall coordinate with the District 07 Permits Office, District 07 Traffic Office, HQ Traffic Management Section, HQ Traffic Engineering Center, and the District Traffic Operations to ensure that all signalized locations are permitted prior to submission of final plans. The Developer shall, after implementing approved timing plans, provide the LA DOTD and any other agency responsible for the O&M of the traffic signal system with legible written documentation of all intersection characteristics, timing plan parameters, and installation information necessary for the LA DOTD to incorporate the completed signal installation into the central intersection management software being used.

The Developer shall install required signals within and outside the DB Limits before any roadway is opened to traffic in conformance with the required standards, details, and specifications. Shop drawings shall be submitted for Approval prior to any installation of signals.

After construction is complete, the Developer shall schedule signal timing inspections and perform adjustments as required in Section 1.5 of the LA DOTD Traffic Signal Manual.

17.3.3.2 Traffic Signal Requirements

The Developer shall design and install fully actuated permanent traffic signals with adaptive traffic control capabilities at all LA DOTD-authorized intersections within the DB Limits. In addition, the Developer shall modify, as appropriate, any existing traffic signals impacted by the Project. The Developer shall coordinate with the LA DOTD and the appropriate Governmental Entities to define appropriate traffic signal design requirements, local agency oversight of the Developer’s Work, and final acceptance of traffic signals. The Developer shall coordinate with the LA DOTD and appropriate Governmental Entities for synchronization of traffic signal networks.

The Developer shall provide interconnection systems between new or modified signals and any other signal system within the Project as required by the LA DOTD or the appropriate Governmental Entity. The Developer shall ensure continuous communication with the traffic signal system within the Site and shall provide all communication hardware/equipment

for the LA DOTD or the appropriate Governmental Entity to communicate with the signal systems within the Site.

The Developer shall coordinate design and implementation of new or modified traffic signal systems with the LA DOTD to ensure compatibility and interconnectivity with the LA DOTD's traffic signal network. New or modified traffic signal equipment shall conform to the LA DOTD's standards and requirements. At a minimum, the Developer shall:

(a) Design mast arms, poles, heads and foundations in accordance with the LA DOTD's standards;

(b) Install equipment on the Traffic Operations Approved Products List (TOAPL) when applicable;

(c) Use Trafficware 980 ATC controllers and LA DOTD TS-2 Pole-Mounted or TS-2 Ground-Mounted cabinets compatible with LA DOTD equipment;

(d) Permanent traffic signal controllers and cabinets will be LA DOTD furnished, temporary traffic signal equipment will be provided by the contractor and the contractor will retain ownership of the equipment upon removal.

(e) Install Detection in line with LA DOTD Traffic Control Standard 18A, TOAPL, and LA DOTD Specifications;

(f) Use LED lighting on all traffic signal indications; and

(g) A Traffic Signal Inventory document will be required for each new or impacted signal in the Project as specified in the LA DOTD Traffic Signal Manual Section 5.1. The Developer shall only purchase and install traffic signal equipment that is compatible with the LA DOTD equipment and systems if not provided by the LA DOTD.

At the intersection of Sulphur Avenue at Sampson Street the mast arms over Sulphur Avenue rotate to provide clearance for vehicles which would otherwise be too high to clear a standard traffic signal. The Developer shall replace this mast arm with a new mast arm traffic signal that operates in the same manner as the existing. In addition to this rotational feature the signal design shall meet all LA DOTD standards and the requirements in accordance with the Technical Provisions. The proposed signal plans shall be submitted to LA DOTD for Approval prior to construction.

The Developer shall coordinate with the Utility Owner(s) and ensure necessary power service is initiated and maintained for permanent signal systems. The Developer shall ensure power is provided to all Developer-installed signals and that such signals are metered to enable compliance with the responsibilities for power consumption costs in LA DOTD Standard 822.10.

The Developer shall also provide copies of all final signal timing as described in the Traffic Signal Manual.

Before placing any permanent traffic signals, the Developer shall provide the LA DOTD plans indicating the proposed location of such items.

Signals will operate under a 60-day burn-in period prior to final acceptance.

17.3.3.3 Signal Timing Plans

The Developer shall design signal timing plans for all new and modified traffic signals and shall submit to the LA DOTD for Review in TSI format per Section 5.3.1 of the LA DOTD Traffic Signal Manual. The Developer shall coordinate and implement signal timing plans that optimize traffic flows and provide signal coordination with adjacent intersections and arterials for all existing and new traffic signals, modified signals, and interconnected signals. Unless timing maintenance is otherwise provided by a Governmental Entity, the Developer shall be responsible for updating signal timing as necessary to maintain optimized flow.

The Developer shall provide copies of all final implemented signal timing plans to the State Traffic Signal Engineer at Traffic Services.

17.3.3.4 Traffic Signal Support Structures

Proposed traffic signal supports shall be compatible with LA DOTD Approved supports. The Developer shall coordinate with the LA DOTD to determine the specific type and details of traffic signal support structures to be used.

The Developer shall provide, as part of the Final Design Documents, approved shop drawings and fabrication drawings for all signal structures.

Foundations shall be built in accordance with Standard 736.

17.3.3.5 Traffic Signal System

The Developer shall make the proposed signal systems compatible with the existing interconnections. The Developer shall ensure continuous communication with the traffic signal system within the Site and shall provide all communication hardware/equipment for the LA DOTD or the appropriate Governmental Entity to communicate with the signal systems within the Site using equipment compliant with LA DOTD Standard 736.26.3.

For signals that are part of an interconnected signal system, the Developer shall also include interconnect plans. For ITS Communications, refer to Article 20.

All signals, isolated or coordinated, should use adaptive signal operation.

17.3.3.6 Temporary Traffic Signals

Temporary traffic signals must comply with all applicable sections of the MUTCD and LA DOTD Traffic Signal Manual and be capable of communicating with the existing signal system if the location they control is part of an existing system. Side street and mainline detection is required for all temporary signals. Temporary traffic signal plans must be prepared and Approved prior to installation. Temporary plans will follow the format in Section 5 of the LA DOTD Traffic Signal Manual.

The Developer shall provide the maintaining agency its proposed traffic signal timing for Approval. The proposed timing will be supported by Highway Capacity Software (HCS) software for isolated locations and Synchro/Sim Traffic for locations that are part of a system. Peak hour turning movement counts will be required unless counts have been collected in the last three years.

A law enforcement officer must be on-site to control traffic when transitioning from the existing signal to the temporary signal and when returning to the permanent signal.

In addition to the requirements of Section 1.5 of the LA DOTD Traffic Signal Manual, the Developer shall be responsible to observe traffic during the AM and PM peak hours during the first day of operation and have qualified personnel available to adjust timing if needed.

Temporary signal operation must be maintained until the permanent signal is returned to service. If the temporary signal fails, there must be an automated monitor capable of notifying both the maintaining agency and the Developer.

The Developer shall have a flagger on site within four hours to control traffic until the signal is back in operation. If the Developer does not have a flagging operation active after four hours, law enforcement may begin charging their standard rate for the number of officer and vehicles they determine is necessary to control traffic.

The use of a temporary traffic signal must be Approved by the LA DOTD District office. The temporary signal design must be Approved by both the LA DOTD District office and LA DOTD HQ Traffic Engineering.

Section 17.4 Submittals

See Article 24 for list of submittals.

ARTICLE 18.

MAINTENANCE OF TRAFFIC

Section 18.1 General Requirements

The Developer shall plan, design, and construct the Project to provide for the safe and efficient movement of people, goods, and services through and around the Project and manage to minimize the work zone impacts of a project and ensure the safety of through traffic, residents, and businesses.

Section 18.2 Project Standards and References

18.2.1 Standards

(a) LSSRB, Supplemental Specifications and Special Provisions;

(b) LA DOTD Temporary Traffic Control Standards;

(c) LA DOTD Traffic Engineering Manual;

(d) LA DOTD Traffic Signal Manual;

(e) MUTCD;

(f) AASHTO Roadside Design Guide;

(g) NCHRP Report 350, Test Level 3;

(h) AASHTO MASH; and

(i) LA DOTD EDSM.

18.2.2 References

(a) LA DOTD Road Design Procedures and Details;

(b) LA DOTD Traffic Signal Details;

(c) LA DOTD AML;

(d) FHWA MUTCD Standard Highway Signs Policy;

(e) American Traffic Safety Services Association: Quality Guideline for Work Zone Traffic Control Devices; and

(f) LA DOTD's Guideline for Conducting a Crash Data Analysis.

Section 18.3 Transportation Management Plan

The Developer shall prepare and implement a TMP for the Project. The TMP shall meet the requirements of the LA DOTD and FHWA and shall, at a minimum, follow the requirements set forth in EDSM No. VI.1.1.8.

The LA DOTD retains the right to require the Developer to modify the TMP to address safety and/or capacity concerns. The TMP shall include, but not limited to, the following:

(a) Perform queue analysis to determine the effectiveness of the TMP. This analysis will be repeated as necessary and compared to actual conditions to validate predictions. Changes shall be implemented as necessary. The Developer's TMP shall take into account holiday traffic, special event traffic, and other seasonal or public event restrictions. No additional contract days will be added to the Contract time due to these restrictions;

(b) Perform analysis and provide all documentation associated with the following:

(i) determination of the impact area based on proposed project and construction method,

(ii) determination of the impact to the transportation system within this area due to selected alternative and construction method,

(iii) determination of the strategies that will be used to mitigate the identified impacts;

(c) All analysis used to determine all work zone impacts regardless of proposed, current or future project limits, all analysis used to determine effectiveness of proposed mitigations to the identified impacts, temporary traffic control plan and all supporting analysis and documentation, Traffic operations component as well as a public information component and all supporting analysis and documentation;

(d) Provide copies of daily traffic control inspection reports with the monthly progress report;

(e) Provide TMP diary(ies) and Project video(s) with the monthly progress report;

(f) Provide TMP details and inspection frequency;

(g) Provide to the LA DOTD within seven days of an Incident, a record of crash details, time and date of notification, photos from the scene, and video of the Project signs in the approach direction;

(h) Perform daily video of the Project signage prior to starting Work and immediately after any TTC modifications. The Developer shall store the videos and submit them to the LA DOTD with the monthly progress report;

(i) Perform night video of Project signage once per week. The Developer shall store the videos and submit them to the LA DOTD with the monthly progress report;

(j) Provide weekly reports certifying adherence to the Developer's TMP and that all TTC standards are met and submit with the monthly progress report;

(k) Provide descriptions of the qualifications and duties of the traffic engineering manager, traffic control coordinator, traffic control supervisor (TCS), and other personnel with traffic control responsibilities;

(l) Provide procedures for night work to include a work zone light system design in accordance with NCHRP Report 498 - Illumination Guidelines for Nighttime Highway Work. Times allotted for night work to be determined in the TMP. In accordance with TTC standards, this lighting plan shall be submitted to the LA DOTD 30 days prior to beginning night Work; and

(m) Provide procedures to accommodate evacuation traffic in the event there is an evacuation called.

The TMP shall be submitted with the Definitive Design to the LA DOTD and FHWA and must be Approved prior to Commencement of Construction.

If the Developer proposes to construct a portion of the Project to facilitate future traffic flow prior to the main Project construction, a separate TMP will be required for each such proposed construction Project. The TMP will be prepared in accordance with the requirements listed in this section and shall be submitted in the time frame noted.

The Developer shall ensure the safe, efficient passage of the traveling public at all times. The Developer shall prepare contingency traffic control plans (TCPs) for use in relieving travel delays. If in the LA DOTD's sole opinion, sustained traffic control placement creates unnecessary hindrance to the traveling public, the Developer shall implement contingency plans that will alleviate traffic congestion immediately or cease traffic interruptions immediately upon notification from the LA DOTD.

Section 18.4 Mitigation and Limitation of Liability/Claims Plan

During construction, the Developer shall be required, for potential litigation and claim purposes, to provide a Mitigation and Limitation of Liability/Claims Plan (M&LP). The plan shall include but is not limited to the following:

(a) Documentation of on-site conditions;

(b) Qualifications of TCSs and technicians;

(c) Accident investigation documentation (written and visual);

(d) Responsibility and authority assignments; and

(e) Submittals for permanent records (written and visual).

The Developer shall submit the M&LP to the LA DOTD 30 days prior to the start of construction activities for Approval.

Section 18.5 Traffic Control Supervisor

The Developer shall provide a TCS as a part of its team for the duration of the Project. The TCS must have demonstrated experience in traffic and highway engineering with contractor, consultant, city, parish, or state transportation agencies and possess certification in accordance with the LSSRB Section 713.09 and all subsections.

Section 18.6 Performance Requirements

18.6.1 Design Requirements

18.6.1.1 Traffic Control Plans

The Developer shall use the procedures in the TMP and the standards of the MUTCD, AASHTO's Roadside Design Guide, as well as comply with the LA DOTD's Temporary Traffic Control Standard Plans to develop detailed TCPs, which provide for all construction stages and phasing, as well as all required traffic shift procedures. TCPs shall include, but are not limited to shoulder closures, lane closures, lane shifts, and detours. TCPs are required for the Work during the Term including the DB Period and the Operating Period.

The Developer shall provide a TCP concept presentation for Approval at or near the Interim design status but prior to any TCP plan sheet development. The Developer shall use PowerPoint and roll plots to convey this concept at a TCP concept presentation.

This concept presentation is intended to provide the LA DOTD information on the sequencing of various TCPs and how traffic will be maintained. This document will be updated for any changes in the Developer's proposed Work schedule and resubmitted for Approval.

The Developer shall prepare a TCP for every phase of Work that impacts traffic. Each TCP shall be submitted for Approval a minimum of 14 days prior to implementation. The TCP shall be signed and sealed by a Professional Engineer, and shall include, but not be limited to, details for all detours, traffic shifts, lane closures, shoulder closures, Traffic Control Devices, striping, and signage applicable to each phase of construction. TCPs shall be a separate submittal and an addition to the RFC staging plans. Information included in the TCP shall be of sufficient detail to allow verification of design criteria and safety requirements, including typical sections, alignment, striping layout, drop-off conditions, and temporary drainage.

The TCP shall clearly designate all temporary reductions in speed limits. Changes to posted speed limits will not be allowed unless specific prior Approval is granted. Each TCP shall be evaluated in conjunction with other TCPs that will be in effect at the same time.

Opposing traffic on a divided roadway shall be separated with appropriate traffic Control Devices in accordance with AASHTO's Roadside Design Guide, the MUTCD based on the roadway design speed, and these Technical Provisions.

The Developer shall maintain signing continuity on all active roadways within or intersecting the Project at all times.

Throughout the DB Period, the Developer shall ensure all streets and intersections remain open to traffic to the greatest extent possible by constructing the Work in stages. The Developer shall maintain access to all adjacent streets and shall provide for ingress and egress to public and private properties at all times during the construction DB Period of the Project.

The Developer shall prepare Traffic Advisories, which are defined as public information notices, in accordance with Article 2, Project Management, in advance of the implementation of any lane closures or traffic shifts.

18.6.1.2 Design Parameters for Temporary Traffic Control

Design Vehicle: Turning movements along the mainline shall be consistent with the requirements in the LA DOTD Temporary Traffic Control Standard Plans. Turning

movements on all other local streets and driveways shall, at a minimum, provide similar characteristics as existing geometry.

Work Zone Speed Limits: The work zone speed limits on Interstate and State Highways shall be in conformance with the LA DOTD Temporary Traffic Control Standard Plans and the MUTCD.

Number of Lanes: Except as allowed by Article 18, the minimum number of lanes to be maintained for each traffic movement shall be the number of lanes available on each existing facility at NTP. Lane closures on other roadways may be allowed with Approval, as long as the Developer demonstrates that access is not reduced and all traffic patterns are maintained.

Lane Widths: During construction, the minimum lane width for main lines, frontage roads, and major crossing streets is 11 feet. For minor crossing streets, the LA DOTD, may, in its sole discretion, allow 10-foot lanes in limited circumstances during construction for short distances after reviewing the Developer's TCP.

18.6.1.3 Allowable Roadway, Lane, Ramp and Shoulder Closures

Work durations, as defined in the MUTCD, are as follows:

(a) Long-term stationary is Work that occupies a location more than three days;

(b) Intermediate-term stationary is Work that occupies a location more than one daylight period up to three days, or nighttime Work lasting more than one hour;

(c) Short-term stationary is daytime Work that occupies a location for more than one hour within a single daylight period;

(d) Short duration is Work that occupies a location up to one hour;

(e) Mobile is Work that moves intermittently or continuously.

The Developer shall provide the LA DOTD and appropriate Governmental Entities a minimum of three weeks advance notice for long-term or intermediate-term lane/shoulder/ramp closures and/or traffic changes.

The Developer shall provide the LA DOTD and appropriate Governmental Entities a minimum of 72 hours advance notice for short-term, short duration, or mobile lane/shoulder/ramp closures and/or traffic changes.

For unplanned lane and/or roadway closures for emergency maintenance, repairs, or to mitigate roadway hazards, the Developer shall immediately notify LA DOTD and the appropriate Governmental Entities. The Developer shall coordinate with LA DOTD and all Governmental Entities that may be impacted by the closures. The Developer shall contact and notify LA DOTD 30 minutes prior to initiating all lane, roadway, or shoulder closures and after removing all lane closures, excluding emergency closures.

The Developer shall identify alternate routes for emergency services within the Project corridor. The Public Information Manager (PIM) shall coordinate the closure restrictions with the LA DOTD on all lane/shoulder closures (or on any event that results in lane closures) and shall incorporate lane/shoulder closures into the LA DOTD's ITS web-based information

tool. The Developer shall provide and maintain a traffic interruption schedule that includes all lane/shoulder closures and traffic stage changes for a period of four weeks beyond the actual date.

Closures shall be coordinated with adjacent Projects to ensure the safe, efficient passage of the traveling public. During construction of the Project, the LA DOTD will facilitate coordination with all Governmental Entities for traffic control.

Ramp closures shall be determined in the TMP as to which ramps may be closed and when they may be closed, including those noted in Section 18.6.1.5.

For purposes of this Article 18, references to daylight correspond to the schedule in Section 18.6.1.4 for when lanes along I-10 shall remain open. Off-peak or nighttime hours correspond to the time periods outside the hours shown in Section 18.6.1.4.

18.6.1.4 Lane and Shoulder Closure During DB Period and Operating Period

Two lanes in each direction along I-10 shall remain open during the following time periods for the Term:

- Mon. – Thurs.: 5:00 a.m. to 8:00 p.m.
- Fri.: 5:00 a.m. to 9:00 p.m.
- Sat. – Sun.: 10:00 a.m. to 8:00 p.m.

Outside of the time periods listed above, a minimum of one lane in each direction along I-10 shall remain open at all times. Modifications to these allowable lane closure time periods during the DB Period and Operating Period will be considered based on the traffic analysis and TCP presented in the Developer's TMP. The LA DOTD District Traffic Operations Engineer (DTOE) will have final Approval of the Developer's TMP including all lane and shoulder closures.

Lane closures that exceed the allowable lane closure time periods and/or did not receive prior Approval from DTOE (Non-permitted Closures) are subject to the Liquidated Damages as described in Section 8.12(d) of the Agreement except for lane closures due to work outside of the Developer's scope including Winter Maintenance and incident management.

18.6.1.5 Full Roadway Closure

The Developer shall not be permitted any full (all lanes and shoulders) roadway closures unless Approved by the LA DOTD and Governmental Entities having jurisdiction of roadways affected by the closure.

The LA DOTD will have the right to lengthen, shorten, or otherwise modify the foregoing restrictions as actual traffic conditions may warrant.

In the event that a major crossing street must be closed for any duration, the Developer shall submit a request to the LA DOTD and the Governmental Entity having jurisdiction of the crossing street of the intent to close the major crossing street. The Developer shall prepare a separate TCP (including detour plan) for the affected major street crossing. When

minor crossing streets are closed, the major crossing streets must as a minimum, have the lower of the existing number of lanes or two lanes in each direction but shall be approved by the Governmental Entity having jurisdiction of the major street crossing.

Minor crossing streets may be closed for bridge construction during construction Work if adjacent cross streets are open to traffic but must be approved by the Governmental Entity having jurisdiction of the minor crossing street.

Any complete roadway closure will require a TCP to be submitted and Approved by the LA DOTD and any Governmental Entities having jurisdiction of roadways affected by the closure. Availability of frontage roads, ramp location, and detour distances shall be considered in the design of the TCP.

Nightly closures of ramps are allowable outside the times specified in 18.6.1.4. Schedule of closures shall be identified in the TMP and TCP and are subject to DTOE approval.

The following are permitted for extended closures subject to detour requirements in Article 18.6.2.3:

(a) Ramps R-1, R-1A, R-1B, and R-1C

The Developer will be allowed up to four extended weekend closures for each of the Ramps: R-1, R-1A, R-1B and R-1C. The closures shall not occur simultaneously. A weekend closure is defined as 9:00 pm Friday through 5:00 am the following Monday.

(b) Ramp R-4

The Developer will be allowed one continuous extended closure of the US 90 eastbound to I-10 eastbound on ramp (Ramp R-4). This closure shall not occur simultaneously with PPG Drive or Sampson Street interchange closures.

(c) Sampson Street

It is anticipated that Sampson Street and its associated ramps may be closed for a long-term duration (approximately 18 months) during the DB Period.

(d) Ryan Street and Bilbo Street

Alternate closures of Ryan and Bilbo Streets is allowed to facilitate bridge widening construction of both bridges.

(e) Ramp R-19

The Developer will be allowed one continuous extended closure of Ramp R-19. This closure shall not occur simultaneously with Lakeshore Drive/Ryan Street ramp closures.

18.6.1.6 Holiday Restrictions

No Work that restricts or interferes with traffic shall be allowed during the following holiday periods, unless Approved by the LA DOTD and Governmental Entities having jurisdiction of roadways affected by the restriction or closure. The LA DOTD has the right to lengthen, shorten, or otherwise modify these restrictions as actual traffic conditions may warrant.

(a) New Year's Eve and New Year's Day;

(b) Friday before Mardi Gras through Mardi Gras Day;

(c) Good Friday;

(d) Friday before Memorial Day through Memorial Day;

(e) Independence Day;

(f) Friday before Labor Day through Labor Day;

(g) Thanksgiving and Acadian Day; and

(h) Christmas Eve and Christmas Day.

18.6.1.7 Other TMP Requirements

Additional traffic control requirements are as follows:

The Developer shall notify the traveling public by placing portable changeable message signs a minimum of seven days in advance of an actual roadway closure or any major traffic modifications. Where available and possible, the Developer shall coordinate and utilize overhead changeable message signs on the regional ITS system.

18.6.2 Construction Requirements

Construction shall be in accordance with the approved TCPs, the Approved Developer's TMP, as well as applicable provisions of the MUTCD and LA DOTD Temporary Traffic Control Standard Plans.

18.6.2.1 Developer Responsibility

If at any time the LA DOTD determines, in its sole discretion that the Developer's traffic control operations do not meet the intent of the TMP or any specific TCP, the Developer shall immediately revise or discontinue such operations to correct the deficient conditions.

The Developer shall provide the LA DOTD the names of the certified work zone TCS and support personnel, and the telephone number(s) where they can be reached 24 hours per day, seven days per week.

18.6.2.2 Access

Existing bicycle and pedestrian access and mobility shall be maintained across all cross streets. Access to existing transit stop locations shall be maintained during construction or reasonable alternative locations shall be provided, if applicable.

18.6.2.3 Detours

The Developer shall maintain all detours. A pavement transition, required in accordance with AASHTO's Roadside Design Guide, LA DOTD guidelines, and the MUTCD based on the roadway design speed of the section shall be provided at all detour interfaces. If the Developer proposes use of a road not on the LA DOTD-maintained system, the Developer shall request Approval from the LA DOTD and the Governmental Entity having jurisdiction of the road to use it as a detour.

The Developer may be required to enter into an agreement with the Governmental Entity with stipulations for the use of the detour route. The Developer shall be responsible for all detour signage and traffic control measures required.

As necessary, this Work may extend beyond the defined DB Limits. If any detour includes a controlled intersection, then the Developer shall submit an AM/PM/off-peak level of service (LOS) analysis with and without detour traffic. A goal of LA DOTD is that during construction, the LOS on any detour route be LOS D, or better, or the LA DOTD may require an alternate detour route.

Proposed changes to signal timing for any signals on detour routes shall be coordinated with the respective signal owner. Detour route proposals shall be accompanied by a Highway Capacity and Safety Analysis of the detour proposal. The measures of effectiveness evaluated shall include LOS, V/C Ratios, delays, queue lengths, accessibility, and safety. To maintain optimal traffic flow, mitigation measures such as: adaptive signal timing, additional turn lanes, additional signals, temporary pavement, restriping, etc. shall be implemented.

18.6.2.4 Traffic Interruption Request

The Developer shall submit a traffic interruption request (TIR) with advanced notification for Approval for any impact to traffic due to Developer activity. The Developer shall also submit a TIR during the design phase for any field work required to support the design, including subsurface exploration, Utility Relocation, surveying, and joint inspection/maintenance activities.

The Developer shall not submit a TIR for construction activities that are not included in a previously approved TCP and/or for which plans have not been included in the RFC Documents.

Section 18.7 Submittals

See Article 24 for list of submittals.

ARTICLE 19.

BICYCLE AND PEDESTRIAN FACILITES

Section 19.1 General Requirements

The Developer shall design, prepare plans, and construct all bicycle and pedestrian facilities Work for the Project within the DB Limits.

The Developer shall coordinate with the community and Stakeholders, through the Imperial Calcasieu Regional Planning and Development Commission (IMCAL) and in coordination with LA DOTD, for the development of the bicycle and pedestrian facilities. IMCAL will determine scope of these facilities, in coordination with the Developer and upon LA DOTD Approval. An Active Transportation Allowance is in place for bicycle and pedestrian facilities on either ends of the New Bridge to be incorporated within the DB Limits, which are not otherwise covered by LA DOTD Complete Streets requirements. See Section 8.14 of the Agreement.

Section 19.2 Project Standards and References

19.2.1 Standards

(a) LA DOTD Access Connections Policy;

(b) LA DOTD Standard Plans and Special Details; and

(c) American with Disabilities Act, 42 USC 12101, et seq.

19.2.2 References

(a) AASHTO Guide for the Development of Bicycle Facilities;

(b) AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities;

(c) AASHTO MASH;

(d) MUTCD;

(e) U.S. Access Board Americans with Disabilities Act Accessibility Guidelines (ADAAG);

(f) U.S. Access Board Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG);

(g) LA DOTD Statewide Bicycle and Pedestrian Master Plan (including the LA DOTD Bicycle Planning Tool);

(h) The City of Lake Charles Bicycle and Pedestrian Master Plan; and

(i) Lake Charles 2045 Metropolitan Transportation Plan.

Section 19.3 Performance Requirements

The Developer shall evaluate all existing pedestrian facilities within the Project ROW for conformance with ADAAG requirements. If the Developer's Work includes any portion of an intersection, the Developer shall ensure that the entire intersection is compliant with the ADA. Developer will only be responsible for conformance with ADAAG upgrades on facilities constructed as part of the Basic Project Configuration. However, Miller Ave. which is not in the Basic Project Configuration, shall have sidewalks that are brought up to ADAAG standards within the DB Limits.

The Developer shall prepare an initial and final ADA compliance and feasibility report that demonstrates that the Project complies with all applicable ADAAG. Existing pedestrian facilities that comply with ADAAG may remain in place. Existing pedestrian facilities that do not comply with ADAAG must be replaced with facilities that comply with PROWAG. All new pedestrian facilities must comply with PROWAG.

The Developer shall prepare an initial and final bicycle and pedestrian study and report for the Project that includes the following:

(a) Cover sheet;

(b) Table of contents;

(c) Executive summary;

(d) Introduction;

(e) Description of the proposed bicycle and pedestrian facilities;

(f) A summary of specific methodologies, manuals, or references that the Developer proposes to use for the analysis and design of the bicycle and pedestrian facilities for the Project;

(g) Evaluation of alternatives;

(h) Results and recommendations; and

(i) Exhibits depicting the proposed bicycle and pedestrian facilities.

19.3.1 Design Requirements

The Developer shall design, build, and maintain Active Transportation Facilities that include the following:

(a) Alignment, profile, cross-section, and materials;

(b) Points of connection to existing and proposed multi-modal facilities;

(c) Crosswalk and pedestrian ramp locations and details;

(d) Signing, signalization, and pavement markings;

(e) Separation between Active Transportation Facility and the nearest travel lane; and

(f) Methods of separation, including barrier and/or fence type and height.

19.3.1.1 Existing Active Transportation Facilities

The Developer shall provide bicycle and pedestrian facilities that are compatible with existing Active Transportation Facilities and do not hinder or interfere with the planned facilities and other facilities for pedestrians and cyclists per the stated plans in Section 19.2.2.

19.3.2 Construction Requirements

Existing bicycle and pedestrian facilities within the DB Limits that are impacted by construction shall be restored to a new condition that complies with current standards.

Section 19.4 Submittals

See Article 24 for list of submittals.

ARTICLE 20.

INTELLIGENT TRANSPORTATION SYSTEM (ITS)

Section 20.1 General Requirements

The Developer shall design, prepare plans, construct, install, integrate, and test, all ITS Systems, including the individual components and the completed systems as a whole. The ITS System shall be used to monitor traffic flow and performance; accurately detect traffic and traffic operational conditions throughout the DB Limits; aid in controlling traffic through signalized intersections; and aid in operations associated with the LA DOTD's Advanced Traffic Management System (ATMS).

The existing ITS System, includes:

(a) Closed Circuit Television (CCTV) and cabinet with associated network equipment;

(b) Communications (fiber, radio communications, microwave). LA DOTD currently leases 48 fibers from Conterra along this section of I-10. The leased fiber is used to provide communications for the ITS Devices within the limits of this project; and

(c) Communications infrastructure (conduit and junction Boxes, buried fiber optic cable).

The Developer shall integrate all new and proposed Project ITS devices with the existing LA DOTD ITS infrastructure. The Developer shall coordinate ITS planning and implementation with the LA DOTD. The Developer shall also reasonably coordinate ITS planning and implementation and cooperate with other Governmental Entities and private entities (Railroad/Petroleum Companies/Utility Companies, etc.) that have roadways and/or facilities within or intersecting the Project with regards to the DB Limits.

The Developer shall familiarize themselves with Article 5 and be considerate of Sub-Section 5.3.1.5 – Utility Coordination, with regards to the development of their ITS conduit and fiber installations. LA DOTD currently leases 48 fibers from a utility provider and the Developer shall work with the fiber leaser to identify areas that are convenient for both parties that will allow for splicing of the Developer's drop cables for ITS Devices into the Leaser's fiber trunk cable.

In addition to utilizing the leased fiber the Developer is required to provide two additional dark/spare 48 fiber cables installed in separate conduits along the DB Limits of the Project. Additional information regarding the two spare 48 fiber cables can be found elsewhere in Article 20.

Section 20.2 Ownership of ITS Operations and Maintenance

For the purpose of this Project, the LA DOTD will retain operational control over its ITS infrastructure (existing and proposed) during-and-after construction while the Developer will only be charged with maintaining the LA DOTD's ITS infrastructure during construction as it relates to the DB Limits of the Project. The LA DOTD will assume maintenance of the ITS System once the Project is accepted. The Developer will be responsible for installing new ITS

devices and maintaining existing ITS devices and communications infrastructure as necessitated by the Project.

The Developer shall provide all required software, hardware, systems, equipment, materials, resources, and training necessary to allow the LA DOTD to operate its ITS devices during the construction phase of this Project. Additionally, the Developer shall provide any training and any required testing equipment (if necessary) for the LA DOTD to take on maintenance of the ITS devices once the Project is complete and accepted.

Section 20.3 Project Standards and References

20.3.1 Standards

(a) LSSRB, Supplemental Specifications and Special Provisions;

(b) LA DOTD EDSM;

(c) LA DOTD Standard Plans and Special Details;

(d) LA DOTD Roadside Traffic Signs including Special Details A and B;

(e) LA DOTD Overhead Traffic Signs;

(f) LA DOTD Traffic Engineering Manual;

(g) LA DOTD Software and Deliverable Standards for Electronic Plans;

(h) FHWA MUTCD;

(i) FHWA Load Rating for the FAST Act's Emergency Vehicles 11/03/16;

(j) AASHTO Policy on Geometric Design of Highways and Streets (Green Book);

(k) AASHTO Roadside Design Guide;

(l) Standard Highway Signs Booklet;

(m) NFPA 70; National Electrical Code (NEC);

(n) ANSI Standard C2; National Electrical Safety Code (NESC);

(o) National Transportation Communications for ITS Protocol (NTCIP);

(p) Building Industry Consulting Service International (BICIS);

(q) LA DOTD IT Security Manual;

(r) LA DOTD's Non-Standard Specifications;

(s) NS CCTV Camera Site Remove (Non-Standard ITS (NSITS)) (01-17);

(t) NS CCTV Camera Assembly (NSITS) (01-19);

(u) NS Cellular Modem (NSITS) (12-18);

(v) NS Comm Sys int (NSITS) (01-18);

(w) NS Documentation (NSITS) (05-17);

(x) NS Electrical Service (NSITS) (05-17);

(y) NS Fiber Optic Cable (NSITS) (05-17);

(z) NS Fiber Optic Cable, PTP (NSITS) (07-17);

(aa) NS Fiber Optic Conn Panel, Indoor (NSITS) (03-18);

(bb) NS Fiber Optic Conn Splice (NSITS) (05-17);

(cc) NS Fiber Optic Conn Splice Tray (NSITS) (05-17);

(dd) NS Fiber Optic Conn Term (NSITS) (05-17);

(ee) NS Fiber Optic Connection Panel, Outdoor (NSITS) (05-17);

(ff) NS Fiber Optic Connection Patch Panel, PTP, Indoor (NSITS) (05-17);

(gg) NS Fiber Optic Connection Panel, PTP, Outdoor Furnish and Install (NSITS) (05-17);

(hh) NS Fiber Optic Fan Out Kit (NSITS) (05-17);

(ii) NS Fiber Optic Marker (NSITS) (07-17);

(jj) NS Fiber Optic Patch Cord (NSITS) (05-17);

(kk) NS FRE Conduit (NSITS) (03-18);

(ll) NS Gigabit Ethernet Aggregation Switch (NSITS) (06-13);

(mm) NS ITS Controller Cabinet (NSITS) (12-20);

(nn) NS ITS Hub Build (NSITS) (03-18);

(oo) NS Local Ethernet Switch (NSITS) (12-18);

(pp) NS Pole, Foundation, and Lowering Device (NSITS) (11-17);

(qq) NS PTP Micro Ether (NSITS) (06-18);

(rr) NS Pull Fib op Cab Th Ex Cond (NSITS) (07-18);

(ss) NS Pullbox In Ground (NSITS) (02-19);

(tt) NS Pullbox Struct mount (NSITS) (03-18);

(uu) NS Rigid Metallic Conduit (NSITS) (07-18);

(vv) NS Solar Power System (NSITS) (12-20);

(ww) NS Splice Enclosure, Outdoor (NSITS) (05-17);

(xx) NS Standby Generator System (NSITS) (03-17);

(yy) NS Surge Suppressor (NSITS) (02-19); and

(zz) NS Traffic Management Center (TMC) Integration (NSITS) (05-170).

20.3.2 References

(a) LA DOTD Roadway Design Procedures and Details;

(b) Transportation Research Board (TRB) Highway Capacity Manual, Special Report 209. Third Edition;

(c) AASHTO MASH;

(d) Industrial Control Systems Cyber Emergency Response (ICS-CERT) Recommended Practices;

(e) FHWA Code of Federal Regulations (CFRs) (23 CFR Part 511 – REAL Time System Management Information Program);

(f) FHWA CFRs (23 CFR Part 940 – Intelligent Transportation System Architecture and Standards);

(g) National Institute of Standards and Technology (NIST) SP 800-37, Guide for the Security Certification and Accreditation of Federal Information Systems;

(h) NIST SP 800-53, Recommended Security Controls for Federal Information Systems;

(i) LA DOTD Policy on Management & Operations of TMCs & ITS;

(j) LA DOTD Traffic Operations Approved Products List;

(k) TRB National Cooperative Highway Research Program Report 350;

(l) LA DOTD Special Details;

(m) Highway Capacity Manual;

(n) FHWA CFRs;

(o) Highway Safety Manual;

(p) LA DOTD Interstate Guide Signs;

(q) LA DOTD Traffic Signal Manual;

(r) IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems (Green Book);

(s) IEEE Recommended Practice for Powering and Grounding Electronic Equipment (Emerald Book); and

(t) IEEE Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems (Blue Book).

Section 20.4 Design Requirements

The Developer shall design a complete and operational ITS System for the Project that integrates with the LA DOTD's existing ATMS. The Developer shall utilize hardware and software components that are consistent and compatible with the LA DOTD's existing ITS infrastructure and ATMS system. All designs shall be in compliance with the ITS Master Plan. All ITS equipment shall be located in areas that are not hazardous to the motoring public and/or individuals responsible for maintaining the equipment. If any ITS Equipment is proposed to be installed inside the "clear recovery zone" then said equipment (structures, poles, cabinets, etc.) shall be protected by guardrail in keeping with good engineering practices.

The Developer shall provide safe ingress and egress areas to accommodate access by authorized personnel for maintenance and operation activities. The Developer shall design all ITS sites for ease of maintenance and such that lane closures are not required for maintenance work, including provision of sufficient room for a bucket truck and/or crane of necessary size to reach the top of CCTV poles.

The LA DOTD shall have 100% operational control (ability to receive real-time processed data, device operational status, video, alarms, images, and other information from the ITS field devices) over all ITS devices installed within the DB Limits of the Project using the ATMS operator interface that is in use by the LA DOTD at the time the Developer procures and installs the Project ITS hardware and software.

20.4.1 ITS Work Limits

Due to the nature of ITS Projects, the Developer shall expect to perform some work with regards to the ITS System (devices, communications infrastructure, etc.) that falls outside of the Project's DB Limits. This work usually involves, but is not limited to, making modifications to the communications media such that ITS Elements and Systems that are located outside of the DB Limits remain operational during construction activities. The Developer shall perform this required work as part of this Project.

20.4.1.1 Inventory of Existing ITS

The Developer shall prepare an ITS inventory of existing ITS Elements within the DB Limits that also includes ITS Elements outside the Project's DB Limits, where necessary. This ITS Inventory list will aid the Developer and the LA DOTD in developing the ITS Master Plan as required in Section 20.4.1.2. The ITS Inventory must include the following:

(a) Title Sheet;

(b) Table of Contents;

(c) Inventory of ITS Elements:

  (i) Listing of all existing ITS devices (description, size, and type);

  (ii) Location of each ITS device (in Environmental Systems Research Institute (ESRI) format compatible with the LA DOTD's GIS);

  (iii) The condition and operational status of each ITS device;

  (iv) Photograph log of each device. Include a photograph of each device's power service and equipment disconnects along with a data sheet that identifies information related to the breaker size and wire sizes and routing; and

  (v) Provide an overview map (in ESRI format compatible with the LA DOTD's GIS) that identifies the existing communications infrastructure. Information to include fiber routes, junction boxes, wireless links, cellular sites, etc.

The Developer shall submit the ITS Inventory to the LA DOTD ("see Article 24 for list of submittals"). Should it be required that an existing ITS Device needs to be relocated due to construction activities, the Developer shall install a new device, in like kind, subject to LA DOTD Approval to replace the device in question. The Developer shall also install new ITS devices as necessary and as identified in the ITS Master Plan to meet the requirements and intent of this Technical Provision.

20.4.1.2 ITS Master Plan

The Developer in conjunction with the LA DOTD's input shall prepare an ITS Master Plan that depicts the existing ITS devices (see Section 20.4.1.1 – Inventory of Existing ITS) and proposed ITS devices including the communications infrastructure within the Project. The Developer shall ensure that the ITS Master Plan is the basis for the ITS design. The ITS Master Plan must include the following:

(a) Proposed locations of all ITS Elements (see Section 20.1– General Requirements);

(b) CCTV Camera coverage of roadway;

(c) Identification of existing and relocated leased fiber cables along with identifying where new drop cables, conduits and junction box systems serving ITS Devices will be installed in the ROW;

(d) Wireless links accompanied with propagation studies for areas where installed;

(e) Communications links for traffic signals (existing, proposed, and temporary); and

(f) Ensure compliance with Federal Regulations and compliance with the LA DOTD's Statewide ITS Architecture (see Section 20.4.10- ITS Standards and Architecture).

The Developer shall submit as part of the ITS Master Plan a Project overview map depicting all ITS field devices in a ESRI format compatible with the LA DOTD's GIS.

The Developer shall submit the draft ITS Master Plan for Review and Comment. The Developer shall update the ITS Master Plan as the development of the Project proceeds. Any ITS Design shall be consistent with the ITS Master Plan as most recently updated. The Developer shall submit the most updated and finalized ITS Master Plan to the LA DOTD.

20.4.2 Portable CCTV Equipment

On a limited basis, the LA DOTD will allow the Developer to use portable CCTV equipment to supplement fixed-in-place ITS CCTV cameras for this Project. As such, should the use of portable ITS devices be deemed necessary due to constraints associated with on-going construction activities they will be allowed, but only when Approved. The Developer shall submit in writing a justification request for Approval to deploy such equipment. The justification request shall include justification as to why the request is being made and the anticipated start and ending times for the equipment's deployment.

All equipment shall be located in areas that are not hazardous to the motoring public and/or individuals responsible for maintaining the equipment. When necessary, all portable equipment shall be protected and in keeping with good engineering practices. The

Developer shall provide safe ingress and egress areas to accommodate access by authorized personnel to these devices for maintenance and operation activities.

20.4.2.1 Requirements for Portable CCTV Equipment

As a condition of deploying portable CCTV equipment for ITS Operations the Developer shall ensure that the equipment deployed is 100% compatible and interoperable with the LA DOTD's ATMS software and has track record of successful deployments on other LA DOTD Projects.

Portable CCTV equipment shall have hardware/firmware that is compatible with the LA DOTD's ATMS software package for CCTVs and shall comply with the most recent revision of the AASHTO-ITE-NEMA Joint Committee standards for NTCIP at the time of delivery:

(a) 1102 – NTCIP Octet encoding rules (OER) Based protocol.

(b) 1103 – NTCIP Transportation Management Protocols (TMP).

(c) 1201 – NTCIP Global Object Definitions.

(d) 2301 – NTCIP Simple Transportation Management Framework (STMF) Application Protocol.

(e) 8004 – NTCIP Structure and identification of Management Information.

(f) 8003 – NTCIP Profile Network.

(g) 2101 – NCIP Point to Multi-Point Protocol Using RS-232 Subnetwork Profile.

(h) 2102 – NTCIP Point to Multi-Point Protocol Using FSK Modem Subnetwork Profile.

(i) 1203 – NTCIP Object Definitions for Dynamic Message Signs.

(j) 2101 – NTCIP Subnet Profile for PMPP over RS-232.

(k) 2104 – NTCIP Subnet Profile for Ethernet.

(l) 2201 – NTCIP Transport Profile.

All mandatory objects applicable to portable CCTV equipment operations including battery status shall be implemented with Full Standardized Object Range Support (FSORS).

A complete list of all objects to be implemented shall be submitted for Approval prior to any portable CCTV equipment deployments.

20.4.3 Communications Network

20.4.3.1 General

The existing fiber trunk line throughout this Project's DB Limits consists primarily of LA DOTD leased fiber (of which, 48 strands are allotted for LA DOTD use by lessor (Conterra), LA DOTD owned single mode fiber optic fiber drop cables (12 fibers) to

devices, and a limited amount of LA DOTD 96 strand fiber near the western I-10/I-210 interchange. The leased 48 fiber cable not only serves existing ITS equipment in the Project's DB Limits, it also provides a communications pathway for devices located downstream and upstream from the Project. Upon request, the LA DOTD will provide existing ITS plan data (splice plans for drop cables only) to the Developer to aid in Project design. Existing CCTV Camera location information is provided in Section 20.4.6.

The Developer shall coordinate all fiber related activities with the permittee of the leased fiber to aid in providing a seamless transition in and out of the lessor fiber. The lessor (Conterra) will be responsible for performing splicing activities between their fiber and the Developers drop fibers. The permittee shall be allowed to move and splice their own cable into their duct bank, along with any other permittees in the ROW. Under no circumstances shall the Developer (or any other outside entity) make any alterations to any permitted fiber optic cable.

(a) During Construction

During the various construction phases of this Project, the Developer shall maintain the communications capabilities of this system. The Developer, when utilization of the fiber backbone is not feasible, will be allowed to utilize other communication media, such as, wireless ethernet radio, microwave, and cellular technologies to supplement the fiber's back bone communications link during construction to keep ITS equipment operational.

(b) Post Construction

At Project completion all LA DOTD ITS Devices and services (upstream, downstream, and in the DB Limits) shall be restored to communicate over the leased fiber network.

(c) Spare Fiber Cable

In addition to the leased 48 fiber cables the Developer shall install two new 48 fiber cables that are to be identified as "spare fiber" for future use by the LA DOTD. Both spare 48 fiber cable shall not be used for any communications purposes on this Project and shall be installed with a minimum of 10,000 feet between splices. The location of splices shall be Approved by LA DOTD. The Developer shall install the cable as dark fiber and shall provide a minimum of 100 feet of spare cable at all junction box locations.

For ease of identification of the two spare 48 fibers, the Developer shall install two different color conduits throughout the project DB Limits. Both spare fiber cables may be installed in a common trench but in separate two-inch conduits. The conduits may share a common junction box.

(d) Fiber Splicing

Splicing of the Developers drop cables into the leased fiber shall only be conducted by the owner of the leased fiber (Conterra). Splicing of the Developer's drop cable at any locations other than at the tie in point at the leased fiber shall be the responsibility of the Developer. Splicing of drop cables shall be performed either aerially or underground in junction boxes with approved underground/aerial splice enclosures or in equipment cabinets in approved interconnect centers. Direct burying of splice enclosures is prohibited unless

installed for temporary operations. Aerial cable should not be used unless Approved by LA DOTD.

All fiber related work shall be in compliance with the LA DOTD's Standards Specifications for Roads and Structures and Non-Standard ITS Project Special Provisions.

(e) System and Network Security

The Developer shall design a secure, high bandwidth (minimum 1 GB link), reliable communications network for the trunk and distribution cables. The communications network shall comply with the LA DOTD's IT Security Manual requirements and applicable sections of their Standards Specifications for Roads and Structures and Non-Standard ITS Project Special Provisions.

In addition to the LA DOTD's IT Security Manual requirements, unless instructed otherwise, the network shall be installed in accordance with the US Department of Homeland Security Industrial Control Systems Cyber Emergency Response Team (ICS-CERT) Recommended Practices; National Institute of Standards and Technology (NIST) SP 800-37, Guide for the Security Certification and Accreditation of Federal Information Systems; and NIST 800-53, Recommended Security Controls for Federal Information Systems.

The Developer's lead for the system and network security work during the Design-Build Period shall be a Certified Information Systems Security Professional (CISSP) by the International Information Systems Security Certification Consortium (ISC2) or a Cisco Certified Network Professional (CCNP) Security by Cisco Systems, Inc.

The LA DOTD will provide to the Developer IP address assignments, subnets, and other network configurations data for the LA DOTD's existing ITS equipment and any new ITS equipment at the time of deployment or changeout.

The requirements in this Article 20 apply solely to the ITS network. Tolling fiber optic network requirements are detailed in Article 21.

20.4.4 Conduit and Junction Box Infrastructure

The Developer shall design conduits and junction boxes, including grounding and bonding, in accordance with the NEC, the LA DOTD's Standards Specifications for Roads and Structures and Non-Standard ITS Project Special Provisions, local codes, and applicable requirements listed in Article 16 (Electrical, Highway and Bridge Lighting) and in compliance with applicable requirements listed in Article 5 (Utilities).

The Developer shall place communications, power, and device-specific cabling for ITS Devices in separate conduits and boxes. Power wiring and communications cabling shall not share the same conduit or junction boxes. Additionally, the Developer shall coordinate with Conterra to identify locations where junction boxes are needed for access into the lessor's fiber network. For the purpose of tying the Developer's drop cable into the leased fiber, the Developer shall install junction boxes adjacent to the lessor's junction boxes.

Conduit systems for fiber optic cables shall be designed in accordance with the requirements of the permit holders. Conduit systems for LA DOTD-owned fiber, including the

two new 48 fiber cables identified as "spare fiber" for future use by the LA DOTD, shall be designed in accordance with LA DOTD requirements.

The Developer shall determine the conduit type (PVC, HDPE, Rigid Galvanized Steel, etc.), quantity, and installation methods. This includes junction box locations for the communication cables, electrical services, and conductors to support the existing and proposed ITS System components.

The Developer, other than for temporary connections during construction, shall not direct bury any cables for permanent installations. External structure mounted conduits may be used for ITS functions as long as they are hidden from view (e.g., hidden by the exterior girder). External structure mounted conduits shall be aluminum or galvanized steel. Embedding ITS conduit in barriers is allowed as long as structural capacity checks are made.

Except for LA DOTD owned communications fiber, the conduit system for the communications fibers shall be designed in accordance with the existing permit holders' fiber optic cable configurations to accommodate an agreed upon tie-in location for the Developer's conduit and fiber system for splicing to the leased fiber. Junction boxes spacing shall not to exceed more than a 1,000 LF (+/- 10%) without Approval. All conduits shall be sealed immediately upon installation and proof testing to prevent the ingress of debris.

The Developer shall provide "Conduit Fill Calculations" along with "Jam Probability Calculations" to support the conduit/fiber and or conduit/electrical wiring installation methods. Calculations shall be prepared by an Electrical Registered Professional Engineer.

The Developer shall be responsible for obtaining all permits and agreements as required for cable and conduit installations with regards to Utilities and railroad related work.

20.4.5 Traffic Management CCTV Coverage

The LA DOTD currently has CCTV Cameras located throughout the Project's DB Limits and their locations and descriptions are listed below in Table 20-1.

Table 20-1. CCTV Camera Locations

Location Description	Longitude/Latitude	Camera Quantity
I-10 @ 1-210 Interchange (West Side)	30.227160, -93.301779	1 Camera on Metal Structure (pole mounted)
I-10 @ US 90	30.237562, -93.280252	2 Cameras on Metal Structure (Lowering Design)
I-10 @ LA 378	30.236899, -93.258774	2 Cameras on Metal Structure (Lowering Design)

I-10 @ Calcasieu River Bridge	30.237273, -93.236901	2 Cameras on Metal Structure (Lowering Design)
I-10 @ Ryan Street	30.235620, -93.216664	2 Cameras on Metal Structure (Lowering Design)

The LA DOTD desires for the views from these CCTV Cameras to remain in place during and after construction. Should it become necessary to remove/relocate these installations due to construction activities the Developer shall, with the aid of the LA DOTD, select alternative locations that are suitable for replacements. The Developer shall install new structures that are, at a minimum, constructed from the same materials and are of the same length to the structures being replaced. The new structures shall be designed to house, at a minimum, the same number of CCTV Cameras as shown above in Table 20-1.

If relocation of these CCTV cameras disrupts the LA DOTD's current fields of views, then the Developer shall work with the LA DOTD to establish additional CCTV Camera sites to complete the established field of view at the Developer expense. The Developer shall install new cameras, cables, lowering devices, and poles when sites must be moved.

20.4.6 CCTV Camera Equipment

The Developer shall deploy CCTV cameras to cover 100% of the mainline roadway surface, excluding visual occlusions from poles or other ancillary elements (Project related or natural) not exceeding 10 square feet in plan area. If necessary, the Developer shall remove/relocate existing CCTV camera due to construction. If an existing ITS Devices does not have to be removed/relocated due to construction activities, then the Developer does not have to upgrade the devices and may leave it as is, unless damaged during construction activities.

The ITS Design shall include all necessary CCTV equipment for a fully operational and reliable system, including equipment cabinets, cameras, mounts, camera controls, cables, connections, and lowering devices.

All the Developer's work associated with CCTV cameras shall comply with the LA DOTD's Standards and Non-Standards ITS Specifications.

20.4.7 Camera Monitoring and Control Protocol

CCTV cameras shall support an open protocol for camera monitoring and control in accordance with ONVIF Profile S as implemented by the LA DOTD Advanced Traffic Management System (ATMS) in conjunction with their Video Management System (VMS) and consistent with the other Project ITS Standards and Architecture requirements referenced in Section 20.4.10. Deploy only CCTV cameras that are compatible with existing LA DOTD ITS cameras and systems.

20.4.8 Mounting Structures

The ITS design must include all required mounting Structures for ITS equipment that complies with the location, vibration, and deflection requirements and complies with the

structural requirements of Article 13. The Developer shall not mount camera cabinets or structures that obstruct motorists' views of on-coming traffic or LA DOTD approved signs.

20.4.9 Central ITS Subsystems

The field ITS subsystems shall interface with the LA DOTD's ATMS system which will be used to monitor, interface and control the field ITS subsystems described in this Article. The LA DOTD's existing ATMS includes all necessary field ITS subsystems to facilitate operations of the field ITS Subsystems. For additional information regarding the LA DOTD's ATMS Capabilities, reference the following:

http://www.dotd.la.gov/Inside_LaDOTD/Divisions/Operations/ITS/System%20Engineering%20Analysis/LADOTD%20ATMS%20Concept%20of%20Operations%20(ver%202)%2004-21-2011%20Final.pdf

20.4.10 ITS Standards and Architecture

The Developer shall comply with the current LA DOTD's, Statewide ITS Architecture that is in place at the time of the Setting Date. The Developer shall design and install an ITS infrastructure that is compatible with the LA DOTD's, ITS Architecture requirements that includes:

(a) Performing any necessary systems engineering analysis in accordance with the FHWA's mandate as set forth in Title 23 CFR Part 940. The necessary systems engineering analysis shall be performed in conjunction with the ITS Master Plan described in Section 20.4.1.2. No construction can occur on the ITS system prior to Approval.

(b) Interfaces to the LA DOTD's existing ITS systems and subsystems.

(c) The Developer shall provide supportive information to the LA DOTD, upon request, to update their Turbo Architecture database as needed.

Section 20.5 Construction Requirements

20.5.1 General

The Developer shall coordinate with the LA DOTD 30 days in advance of making connections to any existing LA DOTD ITS Networks, including leased fiber networks or central networks through fiber or other communication medias such as cellular, wireless radio and/or Internet Service Provider leased line connections, and etc.

The Developer shall maintain existing ITS communications functionality during construction activities. The Developer shall phase ITS construction activities to eliminate outages and disruptions with the LA DOTD's existing ITS infrastructure. Install temporary communications and finalized communications media along with ITS devices to provide a complete and operational ITS System.

20.5.1.1 Salvaging

The LA DOTD reserves the right to require the Developer, at any time, to salvage and deliver to the LA DOTD Radio Shop, any existing undamaged LA DOTD-owned equipment and materials including: ITS electronic CCTV support structures, CCTV equipment cabinets, CCTV cameras, switches, etc. The Developer shall deliver the equipment to: LA DOTD Radio Shop, 7686 Tom Drive, Baton Rouge, LA 70806, delivery shall be scheduled at least one day in advance.

20.5.2 Relocation of Existing ITS Devices and/or Equipment

The Developer in coordination with the LA DOTD, shall permanently relocate any existing LA DOTD ITS infrastructure components that will hinder roadway construction including hubs, satellite buildings, etc. The Developer prior to installing the Final ITS System shall temporarily relocate any existing LA DOTD ITS infrastructure components that will hinder roadway construction including fiber communication segments, CCTVs and equipment cabinets in order to maintain the operational effectiveness of the existing LA DOTD's ITS System.

Using the common duct bank described in Article 5, the Developer shall install a new common duct bank conduit system for the two spare fibers, and new conduit systems for drop cables and power systems to operate CCTV installations. These include structures if warranted, and any other items of work necessary to produce an operational ITS System. The Developer shall sequence construction and relocation of ITS components, facilities, and systems to prevent lapses in the LA DOTD's receipt of video or data, including impacts that may fall outside the ITS DB Limits.

Before removing existing ITS items and before beginning construction of segments without existing ITS, the Developer shall perform all activities necessary to maintain system operations during construction, including installing new ITS Devices, temporarily relocating or replacing existing ITS Devices, and connecting such ITS Systems to the existing network.

Due to Construction activities the Developer will be allowed to provide temporary Portable CCTV Equipment during construction to replace the functionality of existing CCTV Cameras if spacing and construction phasing do not allow for permanent placement, with Approval. The Developer shall ensure that portable devices are compatible and interoperable with existing LA DOTD ATMS Software.

The Developer shall provide or maintain separate electrical services and metering to power the existing ITS components relocated by the Developer during the DB Period.

Section 20.6 Testing, Observation, and System Acceptance

The following Sections describe, in detail, all requirements necessary for the Developer to turn over maintenance of the ITS System to the LA DOTD.

20.6.1 ITS Testing

The Developer shall prepare a coordinated and multi-layered ITS Test Plan that lists and sequences individual test procedures for all ITS equipment and subsystems, as well as operational testing of the integrated ITS System as a whole. The ITS Test Plan shall include tests at the factory, at the ITS Developer's /integrator's facility, at field installation sites, at

communication hubs, and at the LA DOTD's ATMS Facility. The ITS Test Plan shall include gated Approvals to ensure that past work is acceptable, and the Project is positioned to complete the next phase successfully.

The testing must comply with the requirements of the LA DOTD's *Standard Specifications for Highway Construction* and Non-Standards *ITS Special Provisions* that are in effect on the Setting Date. For required equipment, services, and functionality that are not addressed by the LA DOTD's Specifications, the Developer shall develop and submit new test procedures for Approval. Test procedures must clearly identify the test environment, applicable standards, test cases, and pass/fail criteria.

All testing shall be scheduled, and all results documented. The Developer shall invite LA DOTD personnel a minimum of 14 days in advance to witness the testing. The Developer shall prepare ITS Test Results Package that contains results of all tests identified in the coordinated and multi-layered Testing Plan. If a test fails, and upon making revisions to repair the failure (hardware or software), then regression testing shall be performed to ensure system integrity As-Built.

Prior to completion of the 30-day Observation Period and as a condition of Final Acceptance, furnish As-Built documentation of all field work for Approval.

As-Built documentation shall be subject to Approval before final acceptance. The Developer shall provide in CADD and PDF format a set of As-Built Plans that depicts actual field conditions of the ITS construction activities.

20.6.2 Observation Period

After all equipment and software comprising the ITS System has been accepted, satisfactory completion of the ITS Test Results, and after any training (if required) is complete, a 90-day Observation Period shall begin. The LA DOTD will continue operating the ITS System during this period, and the Developer will be held responsible for any maintenance-related issues during this period.

This observation consists of a 90-day period of normal, day-to-day operations of the field equipment in operation without any failures. The purpose of this period is to ensure that all components of the system function in accordance with the Plans and the Project Special Provisions.

The Developer shall respond to system or component failures (or reported failures) that occur during the 90-day Observation Period within 24 hours. Correct any failures within 48 hours (includes time of notification). Any failure that affects a major system component as defined below for more than 48 hours will suspend the timing of the 30-day Observation Period beginning at the time when the Developer was notified that the failure occurred. After the cause of such failures has been corrected, timing of the 90-day Observation Period will resume. System or component failures that necessitate a redesign of any component or a failure in any of the major system components exceeding a total of three occurrences will terminate the 90-day Observation Period. The 90-day Observation Period will be restarted from day zero when the redesigned components have been installed and/or the failures corrected. The major system components are:

(a) CCTV;

(b) Communications infrastructure (examples: fiber, radios, ethernet switches, core switches, etc.); and

(c) Any other ITS Devices not named above.

The 90-day Observation Period is considered part of the work to be completed by the Project completion date.

Upon successful completion of all ITS Testing Requirements, receiving approved As-Built Plans and completion of the 90-Day Observation Period/Testing, the LA DOTD will take over Maintenance of the System.

20.6.3 Prohibited Commercial Use of ITS or Infrastructure

The Developer shall not lease or sell ITS data, equipment, or space within the ITS Work Limits, including:

(a) Hangar and support space, conduits, inner-ducts, or any other cable or utility pathway;

(b) Dark or lit fiber optic cable, circuits, bandwidth, towers, or other communications infrastructure; and

(c) Space for third party cameras, live video output, or archived video from CCTV cameras.

Section 20.7 Submittals

See Article 24 for list of submittals.

ARTICLE 21.

TOLLING

Section 21.1 General Requirements

The Developer shall design, provide, furnish, install, integrate, test, update and operate a complete end-to-end Tolling System for the New Bridge. The Developer shall provide all required software, hardware, systems, equipment, materials, resources, and training necessary to establish, operate, and maintain the entire Tolling System in an efficient, responsive, accurate and accountable manner. The major items of this scope of work related to the Tolling System include the Roadside Toll Collection System (RTCS), the commercial Back-Office System (BOS), and the operations and maintenance (O&M) services.

Section 21.2 Project Standards and References

21.2.1 Codes, Standards, and Specifications

21.2.1.1 Standards

(a) LSSRB, Supplemental Specifications and Special Provisions;

(b) LA DOTD EDSM;

(c) LA DOTD Standard Plans and Special Details;

(d) LA DOTD BDEM and BDTMs;

(e) LA DOTD Road Design Manual;

(f) LA DOTD Roadside Traffic Signs including Special Detail A and B;

(g) LA DOTD Overhead Traffic Signs;

(h) LA DOTD Traffic Engineering Manual;

(i) LA DOTD Software and Deliverable Standards for Electronic Plans;

(j) MUTCD;

(k) FHWA Load Rating for the FAST Act's Emergency Vehicles;

(l) AASHTO Policy on Geometric Design of Highways and Streets (Green Book);

(m) AASHTO Roadside Design Guide;

(n) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals;

(o) Standard Highway Signs Booklet;

(p) NFPA 70; NEC;

(q) ANSI Standard C2; NESC;

(r) BICSI; and

(s) PCI DSS and PA DSS.

21.2.1.2 References

(a) TRB Highway Capacity Manual;

(b) AASHTO MASH;

(c) FHWA CFRs;

(d) LA DOTD Highway Specifications;

(e) LA DOTD Traffic Operations Approved Products List;

(f) TRB NCHRP Report 350;

(g) CUSIOP Hub ICP – Central U.S. Interoperability Hub Interface Control Document (ICD);

(h) CUSIOP Business Rules Supplement

(i) Agreement Regarding Interoperability of Toll Systems and Transponders (between central states agencies);

(j) Agreement Regarding Interoperability of Toll Systems and Transponders (between central states agencies) – Amendment 1;

(k) Agreement Regarding Interoperability of Toll Systems and Transponders (between central states agencies) – Amendment 2;

(l) Agreement Regarding Interoperability of Toll Systems and Transponders (between central states agencies) – Amendment 3;

(m) LA DOTD/NTTA Interlocal Agreement;

(n) LA DOTD Draft Tolling Services Term Sheet

(o) Mississippi Motor Vehicle Records Disclosure Form;

(p) Agreement Regarding Interoperability of Toll Systems and Transponders (between the southern states and central states agencies);

(q) LA DOTD Roadway Design Procedures and Details;

(r) Highway Safety Manual;

(s) IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems (Green Book);

(t) IEEE Recommended Practice for Powering and Grounding Electronic Equipment (Emerald Book); and

(u) IEEE Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems (Blue Book).

21.2.2 System Capacity

The System shall be sized and designed to process 100% of the anticipated transactions as being image transactions.

21.2.3 Toll Concept Plan and Business Rules

The Developer shall prepare a Toll Concept Plan and Business Rules document that discusses the overall conceptual approach to tolling and associated policies and business rules. It shall include:

(a) Tolling Approach

(i) Toll zone and gantry locations, tolling layout (including plans and drawings);

(ii) Toll pricing methodology describing the approach used to implement the Toll Rate Schedule, fees, and other incidental charges – consistent with the terms of the Agreement and with Form FP-3 of the Financial Proposal;

(iii) Payment methods accepted (transponder, image, mobile, other);

(iv) Transponder management and pricing plan;

(v) Tolling conceptual design, including infrastructure, RTCS and BOS;

(vi) HOV: The Developer, shall design, implement, and enforce the HOV program. The Developer's program shall be described and must comply with all Federal Laws and Regulations.

(vii) Interoperability for both in-state and out-of-state users; and

(viii) Toll signage locations including advance toll facility signage located to the west of the western I-10/I-210 interchange and to the east of the eastern I-10/I-210 interchange in compliance with requirements of Article 17.

(b) Tolling Policies and Business Rules

(i) Account management;

(ii) Toll Rate Schedule, fees, and other charges – consistent with Exhibit B of the Agreement and with Form FP-3 of the Financial Proposal;

(iii) Image processing;

(iv) Violations management, collection, and enforcement approach in accordance with L.R.S § 48:2084.5.D;

(v) Communication services protocol;

(vi) Data security and system backup; and

(vii) Disaster recovery and business continuity.

(c) Customer Service

(i) Website and email services, account management portal;

(ii) Walk-in Customer Service Center (CSC) hours, staffing, security, and locations;

(iii) Integrated voice response (IVR) and call management;

(iv) Mail, email, text messaging and other communication methods; and

(v) Payment processing, collection, and enforcement management.

Section 21.3 Documentation

(a) The Developer shall provide a submittal schedule of all of the deliverables listed in this section of the Technical Provisions for Approval no later than 60 days following NTP. The schedule should be based on the Developer's construction and toll system deployment schedule.

(b) The Developer shall submit the Toll Management Plan (TOMP). The TOMP and all of its constituent components shall include:

(i) Organizational structure, key tolling personnel;

(ii) Toll System Deployment schedule;

(iii) Concept of Operations, and associated systems engineering analysis documentation;

(iv) Branding/marketing plan;

(v) Development Documentation:

(A) System Development Plan;

(B) Installation Plan;

(C) Master Testing Plan (MTP); and

(D) Draft Training Plan(s);

(vi) O&M documentation:

(A) Draft Partial Acceptance and Operations Plan;

(B) Draft Performance Monitoring Plan; and

(C) Draft Maintenance Plan;

(c) The Developer shall submit and obtain approval on design documentation in accordance with Section 21.4.4.1. The design shall not commence prior to approval of the TOMP.

(d) The Developer shall obtain Approval of the Toll Concept Plan and Business Rules Document, no later than 30 days prior to the start of Onsite Integration Testing.

(e) The Developer shall submit the following detailed testing documentation:

(i) Factory Acceptance Testing (FAT) Plan, Results, and Reports;

(ii) Controlled Environment Testing (CET) Plan, Results, and Reports;

(iii) Onsite Integration Testing (OIT) Plan, Results, and Reports; and

(iv) System Acceptance Testing (SAT) Plan, Results, and Reports;

(f) The Developer shall submit the following detailed O&M documentation:

(i) On-going performance reports;

(ii) Final training plan(s);

(iii) User manuals;

(iv) Final partial acceptance and operations plan;

(v) Final Performance monitoring plan;

(vi) Final maintenance plan; and

(vii) Training manuals.

Section 21.4 Functional and Implementation Requirements

21.4.1 Functional Requirements – General

21.4.1.1 Interface Control

The Developer shall design, construct, install, operate, and maintain the tolling system's interconnections between all systems external to the New Bridge toll system. The Developer shall meet the requirements set forth in the respective ICD for each system. The ICDs outline a framework for the interface between each system a third party and support many systems with different contractual requirements.

The Developer shall collaborate with the LA DOTD to finalize the details included in the ICD prior to commencement of tolling operations.

21.4.1.2 Data Management and Reporting

(a) Data Security

The Developer shall ensure that no unauthorized personnel will have access to individual records, payment histories, or any personal information of toll customers. Paper records shall be locked when not in use, and systems shall have password and authorization controls for any data access.

The Developer shall develop a data security plan for Approval. The data security plan shall follow the Louisiana Office of Technology Services security policies. Personnel shall undergo security screenings that shall be documented in accordance with the approved plan.

(b) Audit and Reporting

The RTCS shall include a report server and commercially available reports package (e.g., Crystal Reports) to provide a complete set of activity, performance, and system/diagnostic reports. The reports package shall include the ability to export to pdf, Excel, or other commercial programs. The LA DOTD must have direct access to the reporting database and be able to generate ad hoc reports and queries.

The RTCS shall provide the following types of reports and information independently of the BOS:

(i) Individual transaction reports for given time periods per lane;

(ii) Individual and summary transaction reports for hours or days per toll Zone and lane or site;

(iii) Individual and summary transactions by payment type;

(iv) Individual and summary transactions by any categorization for daily, weekly, or monthly intervals;

(v) Individual and summary transactions by classifications;

(vi) Audit reports; and

(vii) Searches for individual Electronic Toll Collection (ETC) transponders.

The BOS shall include a complete reporting system and commercially available reports package, to support comprehensive activity, performance, and financial/ audit reporting of all activities as well as ad hoc reports. The BOS shall provide for system wide auditing capabilities for all toll collection transactions and revenue accounting. The BOS shall have the capabilities of retrieving data for:

(viii) Any given date/time transaction(s);

(ix) Any given lane or Toll Zone;

(x) Any account, transponder, or license plate; and

(xi) Daily, weekly, monthly, quarterly, and annual detail and summary statistics for transactions, revenues, and other data.

The BOS shall generate reports for customer account reconciliation showing beginning balances, account activity, and ending balances for each account and an account reconciliation summary report showing the totals for all accounts. The system shall have the ability to drill down to specific customer account transactions and shall track adjustments.

The BOS shall provide a daily system transaction and revenue reports with summary data reports provided weekly, monthly, and annually. The LA DOTD must have direct access to the reporting database and be able to generate ad hoc reports and queries.

21.4.2 Functional Requirements – Roadside Toll Collection System

21.4.2.1 General

The Developer's toll collection system shall include a complete All-Electronic Toll (AET) and Open Road Tolling (ORT) type RTCS that shall be designed, furnished, installed, integrated, operated, and maintained for the purposes of collecting tolls for the New Bridge. The primary functions of the RTCS are to accurately detect, classify, and identify every vehicle passing through the Toll Zone(s).

The RTCS shall ensure that no transactions are lost and will provide comprehensive reports and the capability to check transaction details for purposes of audit and review. The RTCS shall be able to properly read at least three transponder protocols, capture license plate images, and properly classify all vehicles. The Developer shall determine and provide the RTCS infrastructure needed to satisfy all RTCS requirements.

21.4.2.2 Toll Zone and Toll Transaction

The RTCS shall be able to properly read transponders, capture license plate images and classify vehicles anywhere in a Toll Zone. The roadside environment is the single source of all toll collection data. Every vehicle passing through a Toll Zone shall create a toll transaction.

The RTCS vehicle classification system shall be able to detect, separate, and properly classify all vehicles at any location across the Toll Zone. Vehicle classification shall at a minimum be based on a vehicle's volumetric characteristics (length, width, height) and shape. The vehicle classification system shall support degraded modes of operation if individual components fail. The vehicle classification system's hardware and configuration shall be the same for all lanes.

The RTCS shall ensure that no transactions are lost and will provide reports and the capability to check transaction sequence numbers for purposes of audit and review. Transaction sequence number gaps shall be flagged and reported and result in an alarm notification.

The Developer shall utilize multi-protocol readers and design and construct the Toll Zone to read at least all three of the following transponder protocols simultaneously:

(a) ISOC (ISO 18000-63/6C);

(b) ISOB_80K (SeGo); and

(c) PS111 (TDM/IAG E-ZPass Group).

The RTCS shall send and receive transactions in near-real-time from the roadside and post them to the BOS database without delay or batching. All RTCS elements and subsystems shall be time-synchronized with the BOS.

The RTCS shall have the following storage requirements and characteristics:

(a) Transactions and system data shall be available on-line for one year, and all prior data shall be available to be loaded on the system from archive storage, which should retain a minimum of the most recent seven years of data, subject to confirmation from LA DOTD;

(b) Images shall be stored on-line at the RTCS until 30 days after they are transmitted to the BOS; and

(c) The Developer shall request approval from LA DOTD prior to deleting archived data.

The RTCS shall immediately build the toll transaction with the information available and be capable of operating in a degraded mode if some subsystems or components are not functioning.

The RTCS shall provide an application for toll transaction queries, system monitoring, and traffic activity monitoring by individuals with proper identification and password authorization.

The RTCS shall be able to support auditing and reporting. Uploading of transactions accumulated in the RTCS during periods when communication was compromised with the BOS shall not reduce the ability of the RTCS to load all near real-time transactions. No transactions shall be lost during periods when communications are not available.

The Developer shall routinely upgrade all software, operating systems, and databases to current versions. This also shall include emergency updates and security patches. Testing and proof of compatibility shall be included as part of the upgrade.

The RTCS shall support access to its system monitors and reports including remote access by the LA DOTD. The monitor application shall support:

(a) A real-time dashboard and display of current transactions and system performance, for a particular lane, the Toll Zone, or for the system;

(b) Access to and real-time view of any camera selected by the user with image quality variable to meet limitations or capabilities of communications to the roadside;

(c) Review of captured images with image quality variable to meet limitations or capabilities of communications to the roadside;

(d) System alarms and health parameters; and

(e) The request of RTCS reports.

The RTCS shall include an integrated backup system incorporating a major off-the- shelf software package.

The RTCS database shall include at a minimum the following information:

(a) Traffic & revenue;

(b) Detailed toll transaction data, including but not limited to:

(i) Date, time, and location;

(ii) Vehicle classification;

(iii) Transponder status;

(iv) Assigned toll rate (including any applicable discounts);

(v) Operation mode (e.g., normal, maintenance, degraded, etc.); and

(vi) Reconciliation with the BOS and CUSIOP Hub agencies.

The toll transaction shall be composed using an open-standard format, such as Extensible Markup Language (XML), which can be audited and is human-readable on a transaction-by-transaction basis.

(a) Maintenance data (MOMS messages); and

(b) Administrative data, including user management.

21.4.2.3 RTCS Camera Requirements

The RTCS shall include at a minimum three categories of digital cameras:

(a) Image Transaction Cameras: for capture of front and rear license plates of vehicles;

(b) CCTV Roadway Overview Cameras: for Toll Zone transaction audit and for traffic monitoring overview; and

(c) Toll Rate Signs CCTV Cameras: for monitoring the Toll Rate Signs, pricing confirmation, and auditing purposes, see (f) below for exception;

(d) All toll system camera views shall be observable via the RTCS application.

(e) Image Transaction Cameras and Image Processing Requirements

Image Transaction Cameras shall be used for license plate identification by machine-read algorithms (e.g., Optical Character Recognition) as well as human review. The RTCS's Image Processing System (IPS) shall capture, at a minimum, the front and rear images of every vehicle at the Toll Zone level and meet the following:

(i) Capture the rear license plate image clearly with the best contrast possible;

(ii) Capture the front license plate image, if any, clearly with the best contrast possible;

(iii) Capture the entire width of the vehicle (front and rear); and

(iv) Front camera illumination shall not be blinding or distracting to drivers.

All images shall be associated with the correct vehicle transaction. Front and rear plates for the same vehicle shall be packaged in the same transaction record. The camera-source images shall be stored image-by-image as separate digital files, in open-standard file architecture (e.g., jpeg, gif, or tiff). The IPS shall also support transmission of uncompressed images, if necessary. MOMS shall report failures of IPS components.

The Optical Character Recognition (OCR) reader shall be configurable for the acceptable confidence levels and accuracy rates for automatic processing of images and for quality assurance purposes.

(f) CCTV Roadway Overview Camera Requirements

The CCTV Roadway Overview Cameras shall be used for review and audit of in-lane system performance as traffic passes the Toll Zone. The live feed of the CCTV Roadway Overview Camera shall also be available to the LA DOTD for remote viewing.

The CCTV Roadway Overview Camera system collects and stores motion video of the traffic under a gantry. Its primary purpose is to collect a visual record of the vehicles passing under the gantry to provide a system verification tool to enable individuals to look and verify the system is detecting and classifying vehicles correctly.

All CCTV Roadway Overview Cameras shall record to a digital video recorder for motion video storage. The CCTV Roadway Overview Camera recordings shall also be associated with transaction information related to the vehicle in the field of view. Any driver personal and identifiable information, such as account number, shall not be included in the CCTV recording. The video streams from the CCTV Roadway Overview Cameras shall be archived for no less than 180 days.

The cameras shall have a viewable image 24 hours a day unless hampered by adverse weather conditions.

(g) Toll Rate Sign CCTV Cameras

If the Developer's solution requires the use of dynamic or changeable message components for Toll Rate Signs, the Developer shall install cameras to view at all times Toll Rate Signs at a resolution such that the display is clearly legible under the full range of light and weather conditions. These cameras are intended to allow the Developer to remotely confirm the toll rates displayed, address customer service calls, and support audits related to the tolls charged to customers.

The Developer shall display video streams from the Toll Rate Sign CCTV cameras 24/7 on a publicly available website.

The Developer shall archive video still images for every toll rate change for no less than 12 months. The Developer shall provide this archiving to support in addressing customer service calls and potentially in responding to audits or as violations or collections evidence.

21.4.2.4 Toll Communications Network

The Developer shall be responsible for the design and construction of the toll system's communications network. The design of the toll system's network shall ensure levels of redundancy and availability to meet the functional and performance requirements of the RTCS and BOS. The toll system's communications network connects all RTCS Toll Zone devices with the on-premises or cloud servers for transaction processing as part of the RTCS and BOS. These connections will leverage backbone elements of the Local Area Network (LAN) and Wide Area Network (WAN), which will also be used for connection to other systems including ITS.

The Developer will install, test, and aid in commissioning of all the physical and logical network components relating to the toll system. For the general technical provisions for design, installation, and testing of the New Bridge's communications network to support ITS components and systems, please refer to Article 20 (Intelligent Transportation Systems). For traffic signal communication interconnection requirements, please refer to Article 17.

Networking Monitoring Software shall be procured, furnished, and installed on all connected equipment and servers to monitor the Toll Zones and Tolling System Network status and communications, including the connection to the BOS and other systems.

21.4.3 Functional Requirements – BOS and CSC

21.4.3.1 General – BOS and CSC

The Developer shall provide, operate, and maintain a complete, functioning, state-of-the-art toll BOS and CSC for toll transaction processing and toll customer management that supports transponder-based ETC and license plate image processing for identification of vehicles that use the toll lanes. This includes the complete provision and integration of all component hardware and software, and the provision of communications and networks to link the integrated system elements into a functioning complete system.

The BOS shall include functionality to:

(a) Accept transactions and roadside data from the RTCS;

(b) Manage toll customer accounts;

(c) Collect revenue via those accounts;

(d) Provide the final check and processing of all license plate images;

(e) Manage the HOV program;

(f) Report on all transaction and revenue collection activities; and

(g) Provide all necessary external interfaces such as:

  (i) Retail toll account assistance providers;

  (ii) Interoperable agencies and entities supporting interagency operations;

  (iii) Financial institutions; and

  (iv) Sources of license-plate-based vehicle owner identification;

(h) Provide the following broad categories of subsystems and functions:

  (i) Transaction database;

  (ii) Active video and image storage;

  (iii) Archive transactions, video, and images;

  (iv) Support roadside operations with transponder and license plate lists, toll rate tables, etc.;

  (v) CSC account management functions;

  (vi) IVR automated phone service functions for customer service;

  (vii) Web and mobile interfaces and web-hosting functions for customer service;

  (viii) Image review, processing, and license plate lookup;

  (ix) Application of any toll rate discounts based on account type or information provided by the RTCS;

  (x) System audit and reconciliation;

  (xi) Interface with the RTCS; and

(xii) Interfaces with external entities necessary for toll collection, including invoicing and violation enforcement;

(i) Provide all communications to support the BOS and RTCS and all related interfaces; and

(j) Provide a full set of comprehensive reports that allow for complete transactional and financial reconciliation and audit as well as key operational measurements.

The BOS shall have a "dashboard" reporting functionality to allow management to monitor the status of any major component of the system. The dashboard functionality shall provide real-time monitoring capabilities with an interface featuring easy to read graphic and text-based data presentation. The BOS will include innovative tools for managing the system.

The BOS shall interface with the RTCS in a seamless manner to allow for the transfer of transaction files from the lanes to the BOS. The BOS shall accommodate the distribution of files down to the lanes, such as configuration files, transponder files, toll schedules, and variable and other files as required. The BOS shall be able to accommodate, process, and distribute to the lanes all required files for processing interoperable transactions.

The BOS shall include capabilities for tracking image-based violators, violations, invoices, judgments, correspondence, and the disposition of each. The BOS shall also track toll enforcement activities such as adjudication cases, civil court cases, and collection processes.

The BOS shall synchronize all systems and subsystems, including the RTCS, based upon date/time synchronization from a master clock set for US Central Time Zone. All network switches and components shall support Simple Network Time Protocol (SNTP) to synchronized date/time to all other systems and subsystems comprising the BOS. This includes support and an automatically adjustment for daylight savings time.

The tolling parameters and tables shall be updateable at any time in order to address variable operating parameters of the tolling system. Examples of various tables and files include, but are not limited to:

(k) Toll configuration tables;

(l) Toll rate discount configuration tables;

(m) Variable pricing tables;

(n) Transponder files;

(o) License plates files;

(p) Special programs; and

(q) Hotlists, etc.

The BOS shall update the RTCS in near real-time for any change in status of transponders, including issuance of new transponders. This data shall be transmitted from the BOS and automatically spread the parameters and tables to the lanes. Transmission of the configuration data shall not hamper the collection of tolls or require any equipment to be taken off-line.

21.4.3.2 Account Management

The Developer shall provide a professional level of account management services for toll customers and toll processing and collection. The Developer shall be experienced and knowledgeable in toll industry practices and provide trained, competent, and courteous customer service staff to assist individuals and businesses in managing their accounts and payments. Unless otherwise called out in this contract, services under this contract shall include all activities required to enable customers to pay tolls via an account, whether by use of a transponder or image capture of their license plate, or whether through use of an interoperable account from other jurisdictions. Customer service activities also include the resolution and payment of toll invoices, violation notices, payment plans, and penalties for unpaid tolls.

(a) Account Types and Operations

The BOS shall support, at a minimum, the following toll customer account types and operations. Each account shall also support multiple vehicles per account as follows:

(i) Transponder Accounts: pre-paid transponder-based accounts designed to be the predominant and preferred means of toll collection;

(ii) Registered Plate Accounts: pre-paid license-plate-based accounts established by customers for toll payments, but only associated with license plates and not with any transponders;

(iii) Unregistered Plate Accounts: established by the BOS if the posting of an image transaction has no association to any other account;

(iv) Non-Revenue Accounts: transponder-based accounts established only for those entities authorized through legislation, or Approved business policies to be an organization exempt from paying tolls. The account shall support the assignment and management of transponders and the posting of the non-revenue toll transactions. The account shall also support the association of a credit card for the purpose of using the account and its associated valid transponder(s) to pay for tolls at any interoperable toll facility; and

(v) Governmental Accounts: transponder-based accounts established for governmental agencies that do not qualify for exempt status but are restricted from establishing a pre-paid account. The BOS shall support these accounts with automated billing services and statements.

(b) Account Maintenance and Payment Venues

The system shall support various means of transponder distribution. The system shall support various means for customers to open accounts and access and modify them (actions over and above making payments to existing accounts), to include:

(i) In person at storefront(s) and satellite location(s), if provided;

(ii) In person at contracted retail and other outlets;

(iii) On-line using a website;

(iv) On-line using smartphone applications;

(v) Over the phone to the call center; and

(vi) By e-mail, mail, or fax correspondence to the CSC.

(c) The system shall support various account replenishment options such as:

(i) Auto-replenish by a credit/debit card or by Automated Clearing House (ACH);

(ii) One-time replenishments over the call center's phone/IVR system, mobile apps, or website;

(iii) One-time replenishments made in person at a storefront or satellite location, and

(iv) One-time replenishments made at contracted retail outlets.

The BOS shall support further detailed policies and business rules incorporated in this specification and as may be required for interoperability.

The Developer shall encourage customers to provide feedback at the various customer touch points including brief customer surveys at stop-in centers (if applicable), prompts at the end of phone calls, and via the Tolling Account Website. The Developer shall provide any customer who interacts with customer service center (walk-in or satellite center, phone, website) an opportunity to provide feedback on their customer service experience. Customers could be account holders or non-account holders, customers who live in Louisiana or live out of State. The Developer shall not exclude specific customer types such as violators or non-account holders, for example, when conducting surveys.

21.4.3.3 Transponders Management

The system shall include a transponder inventory application that includes transponder purchasing, distribution, tracking, life cycle analysis, returns to manufacturer, and reporting.

All branding and marketing materials shall be Approved prior to release.

21.4.3.4 Image Processing

The Developer shall provide extensive and sophisticated IPS module functionality and procedures to process images and image transactions, including functionality and procedures that support human review of images according to approved business rules. This IPS is envisioned to interact with RTCS and BOS subsystems to aid in the formation, processing, and auditing of toll transactions.

Image processing related functionality and procedures include image review, OCR processing, interfacing with and accessing state license plate registration files for the identification of registered vehicle owner names and addresses, and posting transactions to accounts.

After the RTCS captures and reads license plates and enters the license plate information in the transaction message, the BOS shall provide an extensive image review and

management process to ensure correct identification of images and to provide a check of RTCS performance, and extensively track the performance and production of the system.

The Developer shall develop and maintain a set of image review business rules and quality control procedures.

The image review processes shall be efficient and verifiable. The IPS module shall monitor performance and provide for quality assurance, which shall include performance measurement, staff performance scoring, and detailed reporting. The IPS module shall compile operational statistics for Key Performance Indicators (KPIs). The BOS shall produce image quality reports showing acceptance levels and rejects by reason. The IPS module shall be easily configurable to accommodate business rules, legislation, and changes in each.

The IPS module shall provide independent OCR and image matching for license plate image processing, prior to sorting and evaluating for potential human review.

The Developer shall provide an image review quality assurance process that includes both human reviewers and the OCR process. The BOS shall track all activities of the reviewers and the OCR and provide the operations statistics and reports in both summary and detail.

The IPS module shall be properly and completely interfaced with other BOS modules to provide for the following functionality:

(a) Image review files comparison to CSC license plate database to identify customers;

(b) Posting image transactions to existing customer accounts;

(c) CSR ability access to customer accounts for research and adjustments when dealing with an individual claiming to be a customer;

(d) Easy conversion of post-paid image transaction to customer's account; and

(e) CSR ability to view images easily and efficiently.

21.4.3.5 Interoperability

The BOS shall support toll account interoperability with external toll operators and be able to exchange transponder and license plate data with other toll entities and out-of-state Departments of Motor Vehicles. Other toll entities include LA 23 Belle Chasse Bridge and Tunnel (HBI), LA 1, the Greater New Orleans Expressway Commission (GNOEC), and the Central US Interoperability Hub (CUSIOP Hub).

The Developer's solution shall support various levels of interoperability including, but not limited to, companion accounts, peer-to-peer, and peer-to-hub with other tolling entities, including the following:

(a) LA 1;

(b) LA 23 Belle Chasse;

(c) GNOEC; and

(d) Interoperability with out of state accounts (e.g., CUSIOP Hub).

The Developer shall coordinate with other tolling entities during the term of the contract to provide interoperability. The system shall provide an entire suite of exchange data reports, including transaction, reconciliation, and settlement reports, related to interoperability.

The Developer is required to provide and maintain a BOS that is interoperable with regional hub technologies and business practices at toll commencement. However, BOS-to-regional hub connectivity, transaction processing, and active participation with a regional exchange hub is not required until directed by the LA DOTD, in its sole discretion. The LA DOTD is planning to join the CUSIOP Hub no later than 12 months prior to Partial Acceptance.

LA DOTD will operate and maintain an IOP Aggregator (IOPA), which will interface directly with the CUSIOP Hub as envisioned in the LA DOTD Draft Tolling Services Term Sheet. The Developer is required to be able to interface directly with the IOPA.

See Reference Documents for the CUSIOP Hub ICD and Business Rules Supplement, as well as the LA DOTD Draft Tolling Services Term Sheet.

The Developer shall ensure that all users of the facilities shall be able to pay tolls automatically with their toll account from any interoperable toll entity. This would include CSC-type services to interoperable agency customers to the greatest extent possible. Similarly, the Developer shall support customers in their use of other toll operators' facilities to the greatest extent possible.

The Developer shall conduct and support:

(a) Interagency system testing at startup and as required for system upgrades;

(b) Interagency transmittal and receipt of acceptable transponders and license plates transactions for toll payments;

(c) Interagency transmittal and receipt of toll transactions;

(d) Interagency transmittal and receipt of periodic reconciliation files; and

(e) Submittal of reconciliation files to the LA DOTD.

21.4.3.6 IVR and Call Management

The IVR and call management system shall be fully integrated with the CSC application. Customers shall be able to use the IVR to:

(a) Obtain information on the toll program, storefront locations, and hours of operations, etc.;

(b) Obtain applications;

(c) Obtain information on existing account status and violations;

(d) Open an account;

(e) Update account information;

(f) Close an account;

(g) Make replenishments and payments, and

(h) Speak with a CSC representative.

The IVR and call management system shall record all calls and track and compile performance metrics statistics for phone center calls and activities. LA DOTD shall be provided access to the IVR system to listen to recorded calls. The system shall report, at a minimum, the following call volume related statistics. These statistics shall be accumulated daily and broken down by hour:

(i) Total number of calls received by the system;

(j) Total number of calls accepted by the CSRs;

(k) Average time to answer;

(l) Maximum time to answer;

(m) Total number of calls that exceed specified hold time(s); and

(n) Total number of abandoned calls.

The IVR system shall:

(o) Be scalable and expandable to support future statewide operations;

(p) Have an English and Spanish option;

(q) Be designed to allow monitoring and recording of individual calls by the supervisors;

(r) Provide a screen visible to all CSRs and supervisors for viewing the current status of calls, wait times, number of customers on hold, etc.;

(s) Support violators with similar functional capabilities as the website to the greatest extent possible;

(t) Allow violators to access their account in accordance with data access restrictions established for accounts;

(u) Determine status of notices; and

(v) Make payments.

21.4.3.7 Invoicing and Violations Management

(a) Image Transactions and Invoices

The BOS shall automatically generate invoices for unpaid tolls after the configurable time period for invoicing has been met.

Invoices shall be generated monthly for each customer. A customer's invoice shall indicate any past due amount (similar to typical credit card bills/invoices) and shall allow the customer at least 30 days to pay. As such, the escalation process shall incorporate a grace period inherently based on the due date and the subsequent billing cycle date. Unpaid transactions shall be invoiced on at least two invoices prior to being escalated to a violation status. Unpaid transactions in a violation status shall be invoiced on two invoices prior to being escalated into a collections process per RD 48:250.4.1.

The BOS shall allow viewing and processing/paying invoices either at the CSC, or by the customer via an automated system (online via website or phone) upon presentation of the invoice number and/or license plate.

The BOS shall suspend any escalation when a transaction is flagged for dispute. The system shall handle all subsequent actions related to the transaction accordingly based on dispute ruling.

(b) Violations Management

The BOS shall manage unpaid toll transactions, track all violators, and accumulate their violations based on data from the image review and plate look up processes.

The BOS shall include an adjustment function that can be used with proper authorization to adjust transactions and/or dismiss violations, to include a drop-down list of adjustment reasons.

The BOS shall include an account management function that allows updates to the account information and manual input of license plates for processing.

The BOS shall track all account activities and adjustments and include a record of the individuals associated with those activities.

The BOS shall provide the ability to click on multiple violation occurrences and regenerate notices with new owner information (e.g., in the case of rental vehicles).

Codes shall be changeable but only at the proper authority level, and the system shall track any changes and include a record of the individual associated with the change.

Images shall be available for viewing by the CSRs when discussing the image transaction with an individual, and/or processing payments to accounts. Images shall be available for a period of one year prior to archiving.

The BOS shall facilitate on-demand comments and notes. The system shall allow a CSR to record notes in the account record when changes are made.

21.4.3.8 Website/Web App and Email Services

The website shall be fully integrated with the BOS for access to invoice information. The website shall, at a minimum, provide the ability to:

(a) Pay invoices online via the website;

(b) Accept payments on-line via credit card, debit card or ACH; and

(c) Access information regarding invoices and any request for reviews.

The web-based application shall be fully integrated with the CSC system and shall allow customers:

(d) To access Project information;

(e) To gain assistance with signing up and opening and account;

(f) To download and print information and application forms;

(g) To enroll online and receive email confirmation of successful online enrollment;

(h) To review account status and history;

(i) To update personal information;

(j) To update credit card/debit card information;

(k) To view record of recent tolls;

(l) To make one-time replenishments;

(m) To view an on-line statement;

(n) To view and update statement delivery method;

(o) To change payment method;

(p) To request account closure;

(q) To request reset/set of forgotten passwords;

(r) To view violation information and current status of the violation;

(s) To make violation payments via credit card;

(t) To print confirmation or receipt following account establishment, account changes or on-line payments;

(u) To obtain storefront locations and hours of operation, list of toll facilities, links to road, travel and weather conditions, downloadable terms and conditions, web links to related transportation sites; and

(v) To access frequently asked questions.

The website shall provide a customer agreement and a process for acceptance of the terms prior to initiation. Customers must be able to complete all transaction activities online via the website.

The website information shall be near real time with transactions, statements, account maintenance, payments, etc. The website shall include access to statements and historical data, which shall be available for two years and then archived. The website shall have English and Spanish options.

All external IP addresses shall undergo a vulnerability scan by the Developer at least quarterly and after significant changes in the network by a qualified vendor, pursuant to the PCI Data Security Standard.

The website shall employ transport layer security (TLS) or similar secure endpoint authentication with a trusted digital certificate to protect communication streams for public web connections.

The Developer shall ensure customers' inbound and outbound e-mail is handled accurately, expeditiously, and confidentially. The Developer shall log any and all e-mail-related activity which is not automatically tracked by the BOS.

The Developer shall ensure proper use and safeguarding of the information and shall also be responsible for monitoring the website operations, provide notices and information updates to it, and implement changes and improvements over the life of the contract.

21.4.3.9 BOS Security and Backup Systems

The BOS shall provide a high-level of security to ensure the integrity of all information and data contained therein including customer accounts and shall also provide proper management control.

The BOS shall comply with all applicable standards issued by the PCI Security Standards Council, including the PCI Data Security Standard (PCI DSS) and the Payment Application Data Security Standard (PA_DSS) now existing or implemented during the term of this Agreement. The Developer shall test system components, processes, and software frequently in accordance with PCI DSS requirements to ensure security controls continue to reflect adopted requirements and submit to the LA DOTD completed Report on Compliance assessments against the PCI DSS Requirements and Security Assessment Procedures.

The BOS shall include standard backup systems solutions. The backup systems shall include all modules and databases associated with the BOS. The BOS shall provide an automatic archive capability. A minimum of the most recent seven years of data shall be archived. The Developer shall prepare and implement a data storage and retention policy for Approval.

21.4.4 Implementation and Operational Requirements

21.4.4.1 Design and Development

The Developer shall prepare Plans, Specifications, and System Design documentation for the installation of the RTCS in accordance with the scope of work.

The developer shall prepare design documentation in accordance with the requirements of Section 2.4. Each design document shall clearly exhibit the manner in which the design meets the requirements of the Technical Provisions. In accordance with the design development stages specified in Section 2.4.8, the Developer shall include the following at a minimum for each stage of design development:

(a) Definitive Design;

(i) Infrastructure design needs to support the RTCS;

(ii) High level system overview;

(iii) Overall system architecture (hardware, communications and software);

(iv) Database design (data elements and definitions);

(v) RTCS Equipment functions and installations;

(vi) Alarms and maintenance management systems;

(vii) Data processing logic, data flows and storage;

(viii) System and user interfaces;

(ix) System administration, data security and integrity;

(x) Reports and querying capabilities;

(xi) Account management overview;

(xii) Financial management overview;

(xiii) Website mockup design; and

(xiv) Draft Requirements Traceability Matrix (RTM);

(b) Interim Design;

(i) Appropriate revisions or enhancements based on previous design reviews;

(ii) Communications network design, including physical and logical components;

(iii) Equipment specifications and cut sheets;

(iv) Draft data dictionary;

(v) Report mockups;

(vi) Account management system details;

(vii) Financial management system details;

(viii) CSC facility design; and

(ix) Revised RTM.

(c) Final Design;

(i) Appropriate revisions or enhancements based on previous design reviews;

(ii) Level of detail commensurate with the Final Design stage to allow for hardware procurement, software development preparation and mobilization; and

(iii) Revised RTM.

(d) RFC Documents;

(i) Appropriate revisions or enhancements based on previous design reviews;

(ii) Level of detail commensurate with the RFC Design stage to allow for hardware installation, CSC buildout and software development; and

(iii) Revised RTM.

(e) As-Built Plans.

(i) Appropriate revisions or enhancements based on construction, installation and software development; and

(ii) Final RTM.

Each design shall include an RTM, starting with the Definitive Design. The requirements shall be based on these Technical Provisions. Each requirement shall have a reference to the section in these Technical Provisions from which it was derived and the expected tests to verify each requirement. Any revisions to requirements shall be Approved.

The Developer shall follow the design review process specified in Sections 2.4.9 and 2.4.14.

The Developer shall schedule additional workshops and/or meetings to determine details of elements which require further LA DOTD input.

In addition to the general design elements listed for the stages of design, the Developer shall furnish a design that incorporates, as a minimum, the following toll system components:

(f) Toll Communications Network (Physical)

The Developer shall install power cables, wires, and location-specific wiring in dedicated conduit systems. The Developer shall not bury unprotected cables or wiring and shall place data and power cabling in separate conduits.

The Developer shall install bonding and ground systems that comply with the National Electrical Code (NEC), The LA DOTD's standards and manufacturer's requirements. Toll communications systems include at a minimum:

(i) Fiber Backbone System

(ii) Ethernet Communications Devices

(iii) Servers

(iv) Cellular Modems

(v) Wireless Radio Equipment

(vi) Conduit and Junction Box System

External structure mounted conduits may be used for tolling functions as long as they are hidden from view (e.g., hidden by the exterior girder). Embedding conduit in barriers is allowed as long as structural capacity checks are made.

For ITS Communication Network Design components, please refer to Article 20 Intelligent Transportation Systems of the Technical Provisions.

(g) Power Systems

The Developer shall provide all required power systems, backup power systems and required services to support toll system operations and meet the performance requirements. These systems should comply with NEC and LA DOTD standards, codes, and Article 16. The Developer shall prepare load calculations and panel schedules for electrical power panels. The Developer shall work out ampacity and voltage drop calculations for feeder and branch circuits. The power design and calculations shall be signed and sealed by an electrical engineer registered in the State of Louisiana. The Developer shall include the calculations as part of the design submittals.

(h) Utility and Maintenance Access

The Developer shall design the tolling system to accommodate safe and secure access to all tolling equipment components for maintenance and repairs.

(i) Security Systems

The Developer shall provide required electronic security systems and services needed to support the functioning of the Tolling System and meet the performance requirements included in the Technical Provisions. These systems shall include access control and video surveillance with 24/7/365 alarm monitoring and shall be provided at the Toll Zone and office locations.

(j) RTCS Subsystems

The developer shall design RTCS subsystems that meet the functional and performance requirements in the technical provisions. Such subsystems include at a minimum:

(i) RTCS CCTV Cameras;

(ii) Automatic License Plate Reader;

(iii) Automatic Vehicle Detection and Classification System;

(iv) Zone Controller; and

(v) RFID Reader/Transponder;

If the Developer elects to use dynamic or changeable message components for the Toll Rate Signs, the Developer shall fully integrate the dynamic or changeable portions with the RTCS and provide CCTV cameras for monitoring as described in Section 21.4.2.3.

The Developer shall provide subsystems and associated equipment that operate without noticeable performance degradation under the expected environmental conditions of the Calcasieu Parish. For operating period performance requirements, please refer to Article 22.

The Developer shall provide the appropriate level of lighting to the Toll Zone and Toll Rate Sign structure at all times to allow for traveler safety and the proper functioning of equipment, including the Automatic License Plate Reader and any dynamic message displays. Please refer to Article 16 for additional details regarding lighting.

(k) Toll Supporting Infrastructure

The Developer shall provide toll gantries and all other miscellaneous structures to support the functioning of the tolling system and meet the performance requirements included in the Technical Provisions. The structures shall comply with deflection and vibration requirements, and all relevant standards and codes described in Section 21.2.

The Developer shall locate the toll gantry or gantries such that tolls are only collected from Users of the New Bridge.

The Developer shall design and provide Toll Rate Signs according to the requirements, standards and codes included in the Technical Provisions. The Developer shall provide Toll Rate Signs that accurately reflect the approved Toll Rate Schedule. The Toll Rate Signs shall display current toll rates and any applicable time period and vehicle class surcharges or discounts. If the Developer elects to vary the toll for any vehicle class by time of day or day of week, the Developer must include dynamic or changeable message components to its Toll Rate Signs. Toll Rate Sign locations and design shall follow MUTCD requirements.

Other toll-supporting infrastructure subcomponents include:

(i) Hub Buildings at Toll Zones;

(ii) Toll Gantries at Toll Zones;

(iii) Toll Equipment Cabinets;

(iv) Power Systems (including a generator back-up);

(v) HVAC systems;

(vi) Equipment Racks; and

(vii) Cabling.

The Developer shall ensure that all buildings, cabinets, and enclosures for both RTCS and CSC toll system components provide the necessary temperature, humidity, and air circulation needs for all equipment to operate under their manufacturer's specifications.

21.4.4.2 Construction and Installation

To successfully implement the installation of the New Bridge toll system, the Developer shall cooperate and coordinate with the LA DOTD.

(a) Installation Plan

The Developer shall prepare and submit an Installation Plan for Approval that demonstrates delivery of a system in accordance with Section 21.4.4.1.

Equipment ordering and installation may proceed in parallel with design but shall be subject to change until the Developer's solution passes FAT. The Installation Plan shall include, at a minimum, the following:

(i) Coordination activities with the roadway and bridge construction activities;

(ii) Prerequisites for installation such as civil, power, and communications requirements;

(iii) Documentation delivery including drawings and plans;

(iv) Installation schedule;

(v) Duties and responsibilities of all parties;

(vi) Separation of test data from production data;

(vii) System interfaces;

(viii) Coordination of testing activities;

(ix) Safety planning; and

(x) Automatic Vehicle Identification (AVI) installation procedures including power and read zone measurements and initial tuning.

(b) Installation sequencing, procedures, and checklists:

(i) Lane closure preparation and traffic control;

(ii) Revenue Service Commencement; and

(iii) Handling of hazardous materials.

The Developer is responsible for determining its staging requirements and for providing them, including any and all facilities, utilities, security, and improvements required. The Installation Plan shall be developed with the understanding that the Developer may need to schedule some of the work without having exclusive or uninterrupted access to the work site.

The Installation Plan shall include plans for coordinating with the LA DOTD, and other entities necessary for successful installation. The Installation Plan shall include the need for planned outages of communication networks or other existing assets.

(c) Installation Work

The Developer shall perform installation activities pursuant to the approved Installation Drawings and Installation Plans. The Developer shall have submitted the final RTCS FAT test report prior to the start if installation. The Developer shall receive Approval of an installation before moving on to the next installation. If the Developer has received Approval for parallel installation efforts, then the Developer shall obtain Approval of an installation before moving on to the next installation on each parallel installation track.

The Developer shall utilize the services of a fully qualified engineer for the purpose of performing all engineering civil, structural, electrical, mechanical, and architectural design and the preparation of related plans and documentation. All engineering civil, structural, electrical, mechanical, and architectural design work shall be performed under the direct supervision of an engineer of the appropriate discipline licensed in the State of Louisiana or an architect licensed in the State of Louisiana.

All work shall be performed within the existing ROW.

All installation and testing of communications equipment and wiring shall be done in a neat and professional manner by qualified network technicians.

Electrical work shall be performed by Louisiana-licensed electricians. All electrical work shall be performed in accordance with the applicable Governmental Rules. Appropriate NEC requirements shall be adhered to with all electrical articles for installation pertaining to wiring, enclosures, and other electrical equipment in hazardous locations.

The Developer shall ensure that each sub-contractor performing construction or installation work under the Developer holds all necessary Louisiana contractors' or other licenses and provides proof of such licensing at the LA DOTD's request.

The LA DOTD, or their designee, shall have access to inspect all aspects of the installation at any time. The Developer shall identify inspection points in the Installation Plan, and the installation schedule shall allow time for inspections to be performed.

The Developer shall conduct routine inspections of all installations and certify in writing that the Developer has completed installation per the approved documentation and drawings.

All equipment shall be installed, configured, and tested in strict accordance with the original manufacturer's instructions and as submitted in the Developer's Installation Plan and test plans. The manufacturers' printed or verbal recommended installation procedures and instructions for all materials furnished by the Developer under the Contract Documents shall be followed explicitly, unless otherwise directed by the LA DOTD.

All wiring and cabling shall be neatly labeled, bundled, tie-wrapped, and secured. Wire labels shall be permanent-type labels.

The Developer shall label everything installed as a part of the RTCS including equipment, cables, and conduit and obtain Approval of such labeling. The labeling shall enable efficient maintenance and inventory.

The Developer shall provide proof to the LA DOTD upon request that the installed equipment is ready for testing. Such proof shall include:

(i) Reports from fiber-optic cable, Ethernet switch, and/or wireless bridge testing to industry standard;

(ii) Reports on power connectivity, uninterruptable power supply, and equipment power-up; and

(iii) Reports on functional testing of all individual subsystems.

The Developer shall notify the LA DOTD in writing as quickly as possible with regard to any potential deviation from the approved design and installation documentation, drawings, and plans. Such notification shall take place prior to further action except where delays may cause safety risks. Revisions to the plans for any roadside installations shall be developed by a fully qualified engineer and Approved by the LA DOTD and any other necessary Governmental Entities.

The Developer shall maintain records and documentation essential to providing objective evidence of quality, which shall be made available to the LA DOTD upon request. Examples of quality-related data include:

(i) Installation documentation;

(ii) Inspection and test results;

(iii) Records of quality assurance/quality control programs;

(iv) Cost records pertinent to acceptance of nonconforming material;

(v) Change Order backup documentation;

(vi) Design reviews and walkthroughs;

(vii) Results of internal Developer audits; and

(viii) Minutes of construction coordination meetings/discussions.

Records shall be maintained in a manner that allows for easy access and analysis.

The Developer shall develop and maintain an implementation issue and risk control register, as well as a procedure for identifying, classifying, and assigning risks.

The Developer shall maintain a punch list during implementation for review with the LA DOTD on a weekly basis.

The Developer shall submit As-Built Plans showing the final configuration of all equipment, cables, and conduit to the LA DOTD 30 days after installation.

21.4.4.3 Testing

(a) General

The Developer shall put in place a robust and comprehensive testing program to support the implementation and operations of the Tolling System. The testing program shall follow a gated approach including Approvals to ensure prior work meets requirements of acceptability and Project is well positioned to successfully complete the next phase. The testing program shall include:

(i) FAT

This testing shall be conducted for quality assurance purposes. It shall include testing of individual components to ensure adherence to specifications and requirements. It shall include all components or subsystems deemed necessary by the LA DOTD. Once FAT has been successfully completed and documented, the individual components shall undergo Controlled Environment and Onsite Installation Testing.

(ii) CET

It shall include a full system test for the Tolling System in a controlled, multi-lane environment prior to deployment on-site. This is necessary to demonstrate the proposed Tolling System's adherence to performance requirements in a controlled

environment. Once Approved the Controlled Environment Testing, the Developer shall commence installation of on-site RTCS and BOS and equipment.

(iii) OIT

It shall include on-site testing of individual installed components; subsystem testing of RTCS at Toll Zones, back office, and CSC system testing; and testing of transaction flow from Toll Zone through to the back office and CSC inclusive of transaction escalation processes. The on-site installation testing shall be successfully conducted by the Developer and Approved prior to tolling operation going live.

(iv) SAT

Once "go-live" occurs, the Developer shall perform functional operational testing for equipment and system for 60 consecutive days. During the testing, all system and equipment shall operate without failures of any type. If any component or sub-component fails to meet the performance requirements or malfunctions during the testing period, the Developer shall troubleshoot and rectify the failure. Following the correction of problem to the satisfaction of the LA DOTD, the Developer may be required to restart the 60-day test period.

This process shall continue until the equipment and system operate without any malfunctioning or failure during the testing period.

(b) LA DOTD Approval

The LA DOTD shall have the right to determine minimum testing requirements necessary for Approval and shall have right to witness the test procedure. For testing performed within the State of Louisiana, the Developer shall provide an advance notice of at least 14 days prior to each test start. If the testing is to be performed outside of the State of Louisiana, the Developer shall provide an advance notice of at least 30 days prior to each test start.

The LA DOTD reserves the right to require the Developer to re-run failed tests, as well as part or all of other test stages that previously passed.

(c) Testing Documentation

The Developer shall provide an MTP that shall be included under TOMP as described in Section 21.3 and submitted per Section 24.9 Summary of Submittals. It shall describe how the Developer shall execute each of the test activities as outlined for each approved component and sub-system along with a testing plan once all subsystems are brought on-line together to form the functioning system. The MTP shall describe testing planned by the Developer in each test phase, including test cases, test criteria, test tools, test roles and responsibilities. Upon Reviewing the test procedures the LA DOTD will make recommendations on acceptance either "as-is" or "request modifications" to each test plan. The Developer shall use test procedures based on the Approved test plans.

The Developer shall provide a full list of software and hardware versions being tested and used as test equipment. The Developer shall prepare test reports that explain complete details for the tests.

The Developer shall submit all detailed test plans to the LA DOTD as described in Section 21.5.4 Test Plans and Reports. These shall include a FAT Plan, a CET Plan, an OIT Plan, and a SAT Plan. The detailed test plans shall include all necessary test cases to demonstrate the proper functioning or operation of the system expected for each test phase as per the MTP. Detailed test plans shall include test procedures or scripts with step by step instructions to verify each test case. The testing documentation shall also include the test reports as described in Section 21.5.4 Test Plans and Reports. The Developer shall include name of the test, testing date, lead tester, test witnesses, completed test scripts, server logs, observations, test results including recommendations and test witness' commentary. Any discrepancies and actions that were taken to correct the test outcome/results that were noted during the test shall also be addressed in the finalized test report.

21.4.4.4 Training

The Developer shall prepare a Training Plan, Training Manual, and other documents for use of the LA DOTD's representatives and the Developer's O&M personnel. All relevant personnel shall complete required training prior to accessing the tolling system, equipment, and infrastructure. The Training Plan and Training Manual shall be included as a sub-section to the Toll Management Plan and submitted by the Developer to the LA DOTD as per Article 24.

21.4.4.5 Tolling Operations and Maintenance

(a) Developer Responsibilities

The Developer's tolling management responsibilities shall include:

(i) RTCS Operations and Maintenance;

(ii) BOS and CSC O&M;

(iii) Toll collection and enforcement;

(iv) Account management;

(v) Transponder management;

(vi) Toll advertising and marketing; and

(vii) Developing required plans for Approval.

(b) RTCS, BOS and CSC Operations and Maintenance

The Developer shall operate and maintain all components of the RTCS, BOS, and CSC. The Developer shall maintain equipment in good working condition to capture, process and enforce toll and financial transactions effectively and accurately. The Developer shall be responsible to ensure the RTCS, BOS and CSC meet the performance requirements during the term of the Project.

The Developer shall be responsible for providing system hardware and software maintenance for the RCTC and BOS for the term of this contract. The software includes, but is not limited to, operating systems, databases, application software, communication protocols, and third party supporting software.

The Developer shall perform system administrative activities, corrective action, preventative maintenance, and maintenance. The Developer shall provide software upgrades for both custom and commercial off-the-shelf (COTS) software as releases become available.

The Developer shall provide services in the following BOS and CSC operations general areas:

(i) Customer account establishment and maintenance services,

(ii) CSC phone banks operational services,

(iii) IVR call management,

(iv) CSC mail room operational services,

(v) Website and web app hosting operational services,

(vi) ETC and interoperability services,

(vii) Financial/banking services,

(viii) CSC accounting and reconciliation services,

(ix) Document control,

(x) Transponder operations services,

(xi) Image review operational services,

(xii) License plate identification operational services,

(xiii) Marketing services,

(xiv) CSC storefront and satellite operational services, and

(xv) Invoicing, violation processing and collections.

(c) The Developer shall provide at least one CSC storefront in either of the Cities of Lake Charles or Westlake to include the following:

(i) The provision, build-out, management, equipment, maintenance, and operations of the storefront(s),

(ii) Face-to-face service for customers, including account establishment, account maintenance including balance replenishment via cash and other forms of payment, payment processing, transponder sales, inquiries, and dispute resolution,

(iii) Local support for inventory management, as needed, and

(iv) Support revenue collection and oversight.

(d) The Developer shall provide at least one permanent, temporary, or mobile satellite CSC to be located in the other of the Cities of Lake Charles or Westlake that is not the location of the CSC storefront. At least one satellite CSC shall be in operation for the duration of the Operating Period and include the following:

(i) Management, equipment, maintenance, and operations of the satellite CSC,

(ii) Face-to-face service for customers, including account establishment, account maintenance including balance replenishment vial cash and other forms of payment, payment processing, transponder sales, inquiries, and dispute resolution,

(iii) Provide local support for inventory management, as needed, and

(iv) Support revenue collection and oversight.

(e) The Developer shall make transponder sales readily available in the Cities of Lake Charles and Westlake. The Developer shall establish agreements with one or more retail and/or nonprofit entities located in the Cities of Lake Charles and Westlake and may establish such agreements with other such entities beyond these cities that will provide transponder sales.

(f) Toll operations shall include all facets of the BOS and the CSC, including IPS.

(g) The Developer shall supply appropriate staffing that will handle the following:

(i) Account establishment and management services,

(ii) Phone banks,

(iii) Mailroom operations,

(iv) Transponder management,

(v) Customer communications (email, text messaging and letter),

(vi) Interoperability/reciprocity,

(vii) Toll revenue collection for toll customers,

(viii) Image transaction processing including image review,

(ix) OMV data transfer,

(x) Billing/noticing,

(xi) Administrative hearings, and

(xii) Revenue collection of violations through a collection agency.

(h) Mailing and Fulfillment

The Developer shall ensure that customers' inbound and outbound mail is handled accurately, expeditiously, and confidentially. The Developer shall log any and all mailroom activity which is not automatically tracked by the BOS.

(i) Maintenance Monitoring

The Developer shall provide a Maintenance On-Line Management System (MOMS) to monitor and analyze the RTCS, BOS and the maintenance activities of the Developer.

The MOMS shall track alarms, assign priorities, and provide reporting and analysis. The MOMS shall initiate and provide work orders from selectable alarms, manual initiation or preventive maintenance scheduled activities. The MOMS shall identify and track

maintenance activities, parts usage, personnel, and time. All work orders shall be tracked. The MOMS shall be able to provide a status report of all work orders.

The components of the MOMS shall be configurable to allow for greater flexibility and adaptability in using the system and in defining reporting requirements. The Developer shall utilize the configurable alarms, priorities, templates, work orders and work authorizations that are provided with the MOMS.

For corrective maintenance, the MOMS shall track response times and repair times. Once notification has been made from the system, operations personnel, or from the LA DOTD, the clock for response and repair time has officially commenced.

The MOMS shall provide for tracking preventive maintenance activities and the ability to be used as a predictive maintenance analysis tool. The LA DOTD must have direct access to the MOMS database, and the Developer shall be required to have all maintenance activity data entered within a reasonable time after the maintenance activities have occurred.

The Developer shall be responsible for providing fully assembled and tested spare parts and components for the system. The Developer, through the MOMS, shall provide the LA DOTD with an inventory listing of all spare parts and components in inventory monthly, and shall provide a spare parts usage report monthly.

The system shall be able to generate MOMS operations, management, and performance reports to include at a minimum:

(i) Alarm history,

(ii) Work order status and tracking,

(iii) Equipment and spares inventory,

(iv) Corrective and predictive maintenance,

(v) Equipment repair history,

(vi) Mean time between failure (MTBF) for equipment,

(vii) Lane or Toll Zone outage times,

(viii) Real time status messages for all lane components and sub-systems, and

(ix) BOS real time status for all hardware, database, and software components

(x) Disaster Recovery and Business Continuity

The Developer shall develop a comprehensive Disaster Recovery and Business Continuity Plan and subsequent Disaster Recovery and Business Continuity Procedures for the RTCS, BOS and CSC operations. After complete toll system is deployed and tested, the Developer shall implement its disaster recovery solution and shall test the system and procedures accordingly. The Developer shall maintain the disaster recovery database.

The Disaster Recovery and Business Continuity Plan and Disaster Recovery and Business Continuity Procedures shall be included as a sub-section to the Toll Management Plan (TOMP) and submitted for Approval.

Section 21.5 Submittals

See Article 24 for list of submittals.

21.5.1 Project Management and QC

The Developer shall establish and maintain an organization that effectively manages all of the Work, including toll collection management and toll operations. This Project management effort shall be defined by and follow the PMP, which is a collection of management plans describing the Developer's plan to successfully accomplish the Work, including interaction with the LA DOTD, other government entities, and Stakeholders.

The PMP shall describe the Developer's managerial approach, strategy, and procedures to design and build, operate and maintain the RTCS, BOS and CSC components of the Project and to achieve all requirements of the Contract Documents. The PMP also includes the Developer's expectations for the LA DOTD's management interface and Submittal compliance reviews.

The Developer shall submit a TOMP which will expand on organizational procedural aspects to manage the toll implementation and operations effectively.

The Developer shall also submit a toll deployment schedule as part of the TOMP that identifies all the phases of toll planning and deployment, including design, integration, tolling commencement up until systems acceptance. The toll schedule shall be maintained in synchronized fashion with the overall Project Schedule.

21.5.2 System Development Plans

The Developer shall prepare and submit system development plans for Review and Comment. These plans are part of the Toll Management Plan and shall include Testing Plan, Manuals, and Reports such as:

(a) Installation Plan;

(b) Software Development Plan; and

(c) Master Test Plan.

21.5.3 Design Documents

21.5.4 The Developer shall provide all Design Documents stated in Section 21.4.4.1. Test Plans and Reports

The Developer shall submit for Approval all finalized detailed test plans (including detailed scripts) and the actual approved test report for each piece of equipment, subsystems, and overall system per test phase in accordance with the MTP and as described in 21.4.4.3 Testing. Test plans and reports include:

(a) FAT Plan, results, and report;

(b) CET Plan, results, and report;

(c) OIT Plan, results, and report; and

(d) SAT Plan, results, and report.

21.5.5 O&M User and Training Manuals

The Developer shall provide comprehensive O&M documents for all the toll system equipment and infrastructure installed. This documentation shall include manufacturer's operation manuals, design life specifications, and other details required to operate and maintain the toll system equipment infrastructure. Manuals shall be submitted a minimum of 90 days prior to commencement of tolling operations. User and training manuals include, but are not limited to:

(a) Maintenance plan;

(b) Hardware maintenance user and training manuals;

(c) Maintenance monitoring user and training manuals;

(d) Reports manual;

(e) Partial acceptance and operations plan; and

(f) Performance monitoring plan, following the specified provisions in Article 22.

ARTICLE 22.

OPERATIONS AND MAINTENANCE

Section 22.1 General Requirements

22.1.1 Operations and Maintenance Work

The Developer shall provide operations and maintenance (O&M) services during both the DB Period (DB Period O&M Work) and Operating Period (Operating Period O&M Work) during times specified in the Contract Documents. The Developer shall provide the resources, equipment, materials, and services required to perform all Operations and Maintenance Work (O&M Work) in accordance with the requirements of the Contract Documents. The Developer shall provide sufficient levels of properly trained personnel, on-site and off-site facilities, storage areas, garages, fleet vehicles, computer hardware and software, tools, and other items as required to maintain safe, reliable roadways and facilities. The Developer shall coordinate, plan, and perform the DB Period O&M Work and Operating Period O&M Work required by the Contract Documents in a manner that shall provide safe conditions for the Developer's staff and the traveling public while minimizing traffic disruptions.

22.1.2 DB Period Operations and Maintenance Work

Beginning no later than the earlier of: (i) Commencement of Construction, or (ii) 180 days following NTP and continuing through Final Acceptance, the Developer shall perform DB Period O&M Work within the DB Limits during the DB Period. DB Period O&M Work includes maintenance for repair from normal wear and tear due to traffic and weather and rehabilitation of Elements within the DB Limits that do not meet the performance requirements identified in this Article. The DB Period O&M Work also includes repair of damages resulting from the Developer's Work.

22.1.2.1 LA DOTD's Responsibilities during DB Period

See Exhibit 22-3 for a list of LA DOTD responsibilities.

22.1.2.2 Developer's Responsibilities for DB Period Operations and Maintenance Work

(a) Roadway, underdrains, and roadside;

(b) Upgrades to existing roadways that will be used as detour routes during the DB Period;

(c) Existing Facilities that are to be later replaced or reconstructed as part of the Work;

(d) Existing Facilities that are to remain in place but are within the DB Limits;

(e) Haul routes within the DB Limits;

(f) Elements within the DB Limits damaged by normal wear, forces of nature, or acts of third parties;

(g) Temporary roads (including crossovers) and temporary noise walls;

(h) Temporary structural works;

(i) Other temporary facilities constructed by the Developer not used by the public or open to traffic;

(j) Non-Maintained Work prior to handover in accordance with the requirements of the Contract Documents;

(k) Sweeping, litter pick-up, debris removal, and graffiti removal;

(l) Mowing and landscaping; and

(m) Safety features including guard rail systems, roadway lighting, attenuators and ROW fencing.

The Developer may coordinate directly with the State Police and Local Police forces to provide service(s) beyond the standard level of service provided on state highways.

22.1.3 Operating Period Operations and Maintenance Work

Except when specifically stated otherwise in the requirements of the Contract Documents, the Developer shall perform the Operating Period O&M Work within the O&M Limits for the New Bridge and associated roadway Elements during the Operating Period as specified in the Exhibit 22-3, O&M Responsibility Matrix, and as specified in the requirements of the Contract Documents.

The Developer shall establish a self-monitoring program to ensure a safe and reliable roadway system with the main objective of maximizing public safety, reliability, and availability. Coordinate, plan, and perform the Operating Period O&M Work according to the requirements of the Contract Documents in a manner that will provide safe conditions for the maintenance staff and the public, while minimizing traffic and other disruptions.

The Developer shall perform all Operating Period O&M Work related tasks and activities, including the following:

(a) Maintain the Relevant Infrastructure in a manner appropriate for a facility of the character of the Project and in compliance with the requirements of the Contract Documents;

(b) Minimize delays and inconvenience to the traveling public from the Project;

(c) Identify and correct all Maintenance Failures (MF) and damages to the Project;

(d) Minimize the risk of damage, disturbance to, or destruction of third party property during the performance of O&M Work to the extent reasonably practicable;

(e) Coordinate with and enable the LA DOTD, the LA DOTD's Subcontractors, and, as applicable, others with statutory duties or functions in relation to the Project to perform such duties and functions;

(f) Perform systematic inspections, periodic maintenance and repairs, and Renewal Work in accordance with the provisions of the Developer's Maintenance Management Plan and the Developer's Safety Plan;

(g) Provide a Maintenance Management Plan (MMP) that identifies all functions, procedures, and manuals necessary to operate and maintain the Project in accordance with the requirements of the Contract Documents;

(h) Provide tolling infrastructure and back-office operations in a transparent and accurate manner and respond in a timely manner to customer inquiries, complaints, and requests; and

(i) Provide all resources necessary for the performance of the Operating Period O&M Work to comply with the requirements of the Contract Documents, the MMP, and Handback Work Plan.

Perform the O&M Work within the O&M Limits such that the Project shall be available for use 24 hours per day, seven days per week, and every day of the year. The Developer may supplement LA DOTD MAP if they elect to do so.

Section 22.2 Project Standards and References

O&M Work and Renewal Work shall comply with all Contract Documents.

Section 22.3 Personnel

The Developer shall assign an O&M Manager who shall be responsible for implementing the maintenance obligations in this article and the Developer's MMP. The O&M Manager shall ensure the O&M Work is performed in accordance with the requirements of the Contract Documents, including ensuring proper training of all maintenance personnel and resources available for conducting the O&M Work. The O&M Manager shall be responsible for the health and safety of personnel delivering the O&M Work and the public affected by the Project and shall serve as the point of contact for the Developer in communication with the LA DOTD and in coordination activities with other entities during Emergency events.

The Developer shall assign an O&M Manager who shall be responsible for:

(a) Implementing the maintenance obligations in this Article and the MMP;

(b) Causing the O&M Work to be performed in accordance with the requirements of the Contract Documents;

(c) Causing all O&M personnel and resources performing O&M Work to be available and properly trained;

(d) Protecting the health and safety of personnel delivering the O&M Work and the public affected by the Project; and

(e) Coordinating with the LA DOTD and other entities during Incidents and Emergencies

The O&M Manager shall be available whenever O&M Work is performed.

22.3.1 Meetings

During the DB and Operating Periods, the Developer shall hold monthly meetings with the appropriate LA DOTD representatives to discuss the O&M Work, including the following as appropriate:

(a) Planned Lane Closures;

(b) O&M Work performed the previous month and in the upcoming month;

(c) Operating Period Renewal Work performed the previous month and in the upcoming month;

(d) Incidents, Emergencies, safety issues, and complaints that occurred in the previous month and the Developer's response; and

(e) An assessment of Noncompliance Points;

The LA DOTD may request a meeting at any time to discuss O&M Work-related issues.

Section 22.4 Operations and Maintenance Limits

The DB Period O&M Work shall take place within the DB Limits. The Operating Period O&M Work shall take place within the O&M Limits. Conceptual DB Limits and O&M Limits are shown on drawings in the Reference Documents.

The Developer shall update the conceptual DB Limits and O&M Limits and prepare final DB Limits and O&M Limits consistent with the requirements of the Contract Documents. The Developer shall submit draft O&M Limits for Review and Comment no later than 90 days after NTP. The final O&M Limits shall be submitted for Approval as a condition to Partial Acceptance.

Section 22.5 Maintenance Management Plan

The MMP is an umbrella document that describes the Developer's managerial approach, strategy, and quality procedures for the O&M Work to achieve the requirements of the Contract Documents. Unless otherwise agreed by the LA DOTD, the MMP shall be consistent with the Developer's O&M approach. The MMP shall include all aspects of the O&M Work, including planned and unplanned maintenance Work, Renewal Work, and operational services. The Developer's MMP shall contain two parts:

22.5.1 DB Period Operations and Maintenance Plan

The Developer shall prepare a DB Period O&M Plan as a component of the MMP for O&M Work occurring prior to Partial Acceptance. The Developer shall review and update the DB Period O&M Plan as appropriate at least 45 days before each anniversary of the Agreement Date. The DB Period O&M Plan shall include the final DB Limits.

22.5.2 Operating Period Maintenance Management Plan

The MMP for Operating Period O&M Work shall be first submitted no later than 180 days prior to the scheduled date for Partial Acceptance and reviewed and updated as appropriate no later than 120 days before each anniversary of Partial Acceptance. An approved MMP for the Operating Period O&M Work is a condition to achieving Partial Acceptance.

The Operating Period O&M Plan may be updated more frequently, when necessary to indicate changes to maintenance or operating protocols, agreements, and

interactions with other entities and to indicate the revised O&M requirements for equipment and systems that have been revised, upgraded, and, as applicable, replaced.

22.5.3 Maintenance Management Plan Components and Content

The MMP shall be consistent with the organization structure and content of the PMP and shall expand upon those aspects related to the O&M obligations described in the Technical Provisions specifically for the Operating Period. In particular, the Developer shall expand upon the O&M obligations in the component parts of the MMP as identified in Table 22-1.

Table 22-1. Maintenance Management Plan

Maintenance Management Plan Components
DB Period O&M Plan
O&M Administration Plan
(a) Organizations and Staffing Plan
(b) Meetings
(c) O&M MMS Plan, O&M Reporting Plan, and O&M Document Management Plan
O&M Public Information and Communications Plan
Safety Plan
(a) Hazardous Materials and Wastes Management Plan
(b) Regulated Substances Maintenance Plan
(c) Hurricane/Severe Weather Response Plan
Maintenance Quality Management Plan
Renewal Work Plan and Schedule
Vegetation Maintenance Plan
Toll Management Plan (See Article 21)

The MMP shall include:

(a) Staff organization chart for the O&M Work, including a description of the staffing plan with all positions, work locations, and work hours required to operate and maintain the Project facilities;

(b) Description of the minimum staff qualifications for each staff position;

(c) Qualification of maintenance staff for structures maintenance and procedures for performing structural maintenance work;

(d) Contact list of the various entities and agencies with whom the Developer's O&M staff will require coordination, including their contact information (contact person, address, telephone numbers, email address, and website address);

(e) Identification of major documents that are the basis of the MMP;

(f) Description of the Developer's self-monitoring processes, including the processes and procedures that the Developer will employ to meet the Performance Requirements, including response times to mitigate or provide Temporary Repair, and Permanent Repair to Elements that are not in compliance with the Performance Requirements described in Exhibits 22-1 and 22-2. (Noncompliance Events).

(g) Inspection procedures and frequencies to address Noncompliance Events for each Element and the process for reliability and maintainability analysis and all other inspection procedures and frequencies;

(h) Description of the Maintenance Management System (MMS**)** to be used for reporting;

(i) Description of the Renewal Work reporting system;

(j) Description of the method of tracking and reporting MFs, damages, Noncompliance Events, and Noncompliance Points accumulated throughout the Term;

(k) Description of the methods of monitoring and verifying compliance with all O&M procedures, including those specified in the approved PMP, the approved MMP, and Good Industry Practice;

(l) Copies of all O&M forms, checklists, and fault detection logs;

(m) Description of the Developer's plan for Regulated Substances Management and Hazardous Materials and responses for each (See Section 2.7.7);

(n) Description of the Developer's plan for tracking the use and performance of proprietary materials;

(o) Description of the Developer's approach and assumptions for the Renewal Work items and equipment replacement, including life cycles;

(p) Description of the Developer's plan for landscape planting maintenance;

(q) Description of the Developer's general approach and assumptions for maintenance and repair;

(r) Preliminary O&M Work Schedule and Renewal Work Schedule;

(s) Budgeted annual expenditures for O&M Work and Renewal Work;

(t) O&M dispatching procedures;

(u) Communications procedures;

(v) List of vehicles, tools, and major equipment furnished by the Developer to support the O&M Work;

(w) List of real estate, facilities, computers, software, and other major assets/items to support the MMP;

(x) Copies of drawings that indicate the types of O&M Work to be provided and the physical limits or boundaries of each type;

(y) Schedule of planned O&M activities (O&M Work Schedule);

(z) Description and form of the O&M Report;

(aa) Procedures for completing Emergency-related repair Work in accordance with the requirements of the Contract Documents;

(bb) Quality assurance procedures for the proper selection, preparation, and installation of approved materials, along with material test certifications, manufacturer's recommendations, etc.;

(cc) Data sheet posting for all materials and disposal plans for unused or removed materials;

(dd) Procedures for managing records of inspection and O&M Work, including appropriate measures for providing protected off-site backup(s) of all records;

(ee) Current versions and procedures, functionality, software maintenance requirements, and access protocols for all specialist software employed by the Developer in connection with the O&M Work, including the MMS;

(ff) Responsibilities and procedures for cooperation with public law enforcement and emergency response agencies in accordance with the requirements of the Contract Documents; and

(gg) Procedures and protocols for operations and maintenance of all tolling equipment and systems in accordance with the Toll Management Plan (see Article 21).

The Developer shall submit the proposed format and proposed media of the O&M Report with the initial MMP submittal.

Section 22.6 Safety

The Developer shall conduct all O&M Work in accordance with all applicable Laws including those pertaining to safety and Safety Standards. The Developer shall perform all O&M Work with the goal of maximizing the safety of the public and the Developer's employees.

The Developer shall follow the Safety Plan described in Section 2.7 for O&M Work.

The Safety Plan shall be an integral part of the MMP The Developer shall remove and replace any personnel or O&M Contractors who are jeopardizing safety, disregarding safety rules and procedures, or acting in a negligent or irresponsible manner.

The MMP shall address the approach to meeting all the safety requirements as set forth in the requirements of the Contract Documents and shall include the following requirements:

(a) Ensure the safety of all personnel. Provide safety equipment and procedures for the protection of employees and the public;

(b) Operate and maintain all equipment used in a safe and efficient manner in accordance with all Laws, safety organizations, regulations, and guidelines pertaining to providing the required services; and

(c) Follow all safety requirements outlined in the NESC, OSHA and any standards or practices for safe installation or maintenance of required equipment per the requirements of the Contract Documents.

The Developer shall update the Safety Plan for Work specific to O&M and submit for Approval as part of the MMP submittal.

Section 22.7 Quality Management Requirements

The Developer shall prepare an O&M Quality Plan as a component of the MMP to address DB Period and Operating Period O&M responsibilities. The Developer shall fully comply with the requirements of the Contract Documents and include O&M log forms, procedures, and other means as necessary to create a system that assembles the necessary information and data. The O&M quality management system shall address how the Developer will monitor the performance of the O&M Work and implement the quality assurance system. The primary function of the O&M quality management system is to monitor the performance of the O&M Work. The O&M quality management system shall provide the means to evaluate the Developer's level of performance with respect to the minimum O&M Performance Requirements included in Exhibits 22-1 and 22-2.

The O&M Quality Plan shall also contain all O&M information and data necessary for assessment of the O&M Work Schedule and Renewal Work Schedule and, ultimately, documentation of the O&M Noncompliance Points.

The O&M Quality Plan shall identify the means for monitoring and evaluating all aspects of the performance indicators specified in the requirements of the Contract Documents.

The Developer shall describe and implement a detailed quality assurance system as part of the O&M Quality Plan that is consistent with the Developer's QMP for the Project. The quality assurance system shall validate the information, accuracy, and results of the O&M Quality Plan. The quality assurance system shall include procedures to validate the data, times, dates, O&M logs, other information, and calculations that are the basis of the Noncompliance Points assessment.

The Developer shall provide training to all staff that emphasizes the importance of the O&M quality management system. The Developer shall not alter any maintenance logs, procedures, inspection forms, or any other information that is used to monitor the performance indicators.

The Developer shall include in the Operations and Maintenance Report a section that identifies the results of the O&M quality management and quality assurance system.

22.7.1 LA DOTD Audits

The LA DOTD shall have the right to perform periodic audits of the Developer's O&M Work to verify that the O&M Work meets the requirements of the Contract Documents.

The Developer shall provide the LA DOTD access to all files, records, logs, data, databases, and any other information related to the MMP, such that the LA DOTD can verify that the O&M requirements are performed appropriately. The Developer shall maintain accurate, updated files that are accessible for this purpose.

The Developer shall provide access to tracking data for Noncompliance Events and any MFs or other occurrences that would result in Noncompliance Point assessments in electronic format at any time upon the LA DOTD's request.

22.7.2 Monthly and Quarterly Operations and Maintenance Report

The Operations and Maintenance Report shall identify MFs, damages, O&M logs, service requests, and security issues and Incidents that occur. The Developer shall implement a system for referencing each activity/event and the time and date of commencement and date of resolution. Upon Partial Acceptance, the Developer shall submit the Draft Operations and Maintenance Report monthly no more than 7 days after the first day of each month and the Final Operations and Maintenance Report quarterly, no later than 14 days after the start of each quarter of each Calendar Year.

The Draft and Final Operations and Maintenance Reports shall include, at a minimum, the following data and information:

(a) Summary of closures, permitted Lane Closures, compliance hours, and planned maintenance hours for the coming month. The summary shall include details describing the location, duration, and reason for each;

(b) Non-conformance reports for each MF or damage in the Elements that identifies the location, the nature, and the cause of the MF or damage and the steps that will be, or have been, taken to address the MF or damage;

(c) QA Review of O&M activities and lessons learned where appropriate;

(d) Summary of O&M Work accomplished during the period and planned for the following period;

(e) Updated O&M Work Schedule;

(f) Renewal Work Report;

(g) Reports required under Article 21, Tolling; and

(h) Summary of staff and hours worked.

22.7.3 Annual Operations and Maintenance Report

On an annual basis, the Developer shall create a consolidated Operations and Maintenance Annual Report that summarizes all the activities associated with the Developer's O&M Work and Renewal Work for the year, the actual maintenance performed for the year, and confirmation that the Developer performed its O&M Work and Renewal Work in compliance with the requirements of the Contract Documents. The Operations and Maintenance Annual Report shall be organized with the following information:

(a) A summary of all quarterly Operations and Maintenance Reports and Renewal Work Reports from the preceding year;

(b) Statement of all adjustments to the quarterly Operations and Maintenance Report from the preceding year (if any);

(c) The results and recommendations of the most recently completed LA DOTD condition assessment; and

(d) Budgeted annual expenditures for the upcoming year for O&M Work and Renewal Work.

After Partial Acceptance, the Developer shall deliver the Operations and Maintenance Annual Report to the LA DOTD no later than January 31 of each year for Approval.

Section 22.8 Maintenance Management System

The Developer shall use a computerized MMS database for all O&M Work for the Project, both during the DB Period and Operating Period. The MMS for the DB Period shall record inventory, MFs, damages, repairs, Routine Maintenance activities, Noncompliance Events, and inspections performed.

The MMS for the Operating Period shall record inventory, MFs, damages, repairs, Routine Maintenance activities, Noncompliance Events, Renewal Work and inspections performed.

The MMS database for the Operating Period shall inventory all Relevant Infrastructure to be operated and maintained and shall include:

(a) A description of the item/equipment, location, tag number, equipment nameplate data (model number, serial number, size, etc.);

(b) The location of the asset to a horizontal and vertical accuracy as further described below, using the posted reference marker number, Geographic Information System (GIS) data, and/or control numbers for bridge class structures;

(c) Asset description, date of installation, type of failure, date-time of failure, date-time of response to the site and date-time returned to service, preventive maintenance work, scheduled work, work repair code, time of failure, and to time of repair; and

(d) The information for bridges shall include National Bridge Inventory (NBI) sheets.

The MMS shall be fully populated and operational prior to Partial Acceptance and shall be kept updated and operational for the duration of the Term.

The MMS database shall include the planned preventive maintenance activities required, those performed, dates, and repair history. The database shall include the day and time that Relevant Infrastructure is taken out of service and the day and time that it is returned to service and shall include detailed information regarding the type of repairs or failures and identification of the maintenance Work performed. The MMS software shall have a minimum of the following functional capabilities: scheduling, database of equipment, database of Elements, database of planned/preventive maintenance tasks, descriptions and work codes, work order

generation, technician identification, spare parts inventory, purchasing requisitions, and repair history.

The Developer shall provide training for LA DOTD personnel on the MMS, such that LA DOTD personnel have a complete understanding of the program, the program's capabilities, and functions, and how the Developer shall apply the program to the Project.

The Developer shall record within the MMS all complaints/service requests and shall report weekly to the LA DOTD, in an Approved format, information on any complaints or service requests received by the Developer. This information shall include:

(e) The date and time of the complaint;

(f) The location and nature of the problem;

(g) Injuries and law enforcement involvement, including agency, name and badge number;

(h) Who made the complaint; and

(i) Date and action taken to address the complaint.

The Developer shall record within the MMS all accidents/Incidents. The Developer shall include in the Monthly Operations and Maintenance Report a section on accidents/incidents in an Approved format.

The section shall include information from the previous month on any accident or Incident related to O&M Work being performed by the Developer or within a work zone, including:

(j) Accidents involving the Developer or any Subcontractor personnel, equipment, barricades, or tools;

(k) Traffic accidents within the limits or in the vicinity of any O&M Work being performed by the Developer or any Subcontractors;

(l) Accidents related to marine shipping or marine recreational vessels within the O&M Limits;

(m) Releases of Hazardous Materials;

(n) Any accident involving Developer or Users that causes damage to any Project appurtenance, structure, improvement, or fixture; and

(o) With respect to any accident/Incident, the information provided shall include as a minimum:

(i) The date and time of the accident/Incident;

(ii) The location of the problem;

(iii) The nature of the problem;

(iv) All parties involved in the Incident, including names, addresses, telephone numbers, and their involvement (including witnesses);

(v) Responsible party and insurance information;

(vi) Action taken to address the Incident; and

(vii) Documentation of traffic control in place at location.

The MMS shall be capable of reporting system performance on a geographical basis to demonstrate compliance with operational and Routine Maintenance requirements. The MMS shall incorporate GIS, which shall use the same database engine as the MMS and shall use the MMS for display of physical Element information. When an Element is constructed, installed, maintained, inspected, modified, replaced, or removed, the Developer shall update the MMS within three days of completion of such work. MFs, damages and/or Noncompliance Events shall be recorded on the MMS within 24 hours of coming to the attention of the Developer. All other recording requirements shall be recorded on the MMS within 15 days of completion or occurrence of the relevant activity.

The MMS shall be fully populated and operational prior to the commencement of O&M Work and kept updated and operational for the duration of the Term. The Developer shall provide equipment, facilities, and training necessary to permit remote, real-time, dedicated high-speed web-enabled and password-protected secure access to the MMS for up to two simultaneous LA DOTD employees. All records entered into the MMS in relation to the Project shall be maintained and preserved during the Term. At the LA DOTD's sole discretion, the Developer shall deliver the MMS and everything required for its operation to the LA DOTD, or shall deliver all electronic data kept in the MMS during the Term, in relation to the Project, in a format compatible with the LA DOTD or other entity's MMS in use at the end of the Term.

Section 22.9 Operations and Maintenance Requirements during DB Period

The Developer shall perform the DB Period O&M Work within the DB Limits and as shown in Exhibit 22-3, O&M Responsibility Matrix. For the Existing Bridge, the LA DOTD shall be responsible for DB Period O&M Work, inspections, Renewal Work, and any structural modifications during the DB Period until all traffic is transferred off the Existing Bridge.

The Developer shall perform the DB Period O&M Work (exclusive of the Existing Bridge) to include:

(a) Maintain roadways, structures, bridge crossings (excluding the Existing Bridge), service drives, and sidewalks within the DB Limits;

(b) Patch existing pavements and structures;

(c) Repair potholes;

(d) Repair shoulder drop-offs;

(e) Replace/repair existing shoulders;

(f) Replace/repair traffic attenuators and guardrails;

(g) Replace/repair temporary and permanent barrier walls;

(h) Maintain delineators, signing, and pavement markings;

(i) Maintain detour routes initiated by the Developer throughout the DB Period. Depending on condition, the Developer may be required to upgrade detour routes to meet Performance Requirements as a condition to Commencement of Construction;

(j) Maintain soil erosion and sedimentation control measures;

(k) Mow grassed areas and maintain vegetation within the DB Limits;

(l) Maintain walls, noise walls, temporary noise walls, retaining walls, and temporary fencing;

(m) Remove graffiti on Elements within the DB Limits, including construction equipment and temporary construction facilities;

(n) Maintain storm sewer system, underdrains, catch basins, and temporary drainage systems related to construction activities;

(o) Maintain traffic control devices supplied by the Developer;

(p) Maintain bridge barrier railing and other crash barrier appurtenances and perform repairs if damaged;

(q) Safety related ancillary components of structures shall be maintained so they function as intended;

(r) Repair damage caused by the Developer's operations and Work not properly protected from naturally occurring events;

(s) Remove litter, spilled materials, and debris;

(t) Repair damaged facilities necessary for public travel and safety;

(u) Maintain access for local traffic to property adjacent to the Work;

(v) Perform street and roadway sweeping, remove debris; and

(w) Maintain pedestrian crossings, approaches, and associated sidewalks.

The Developer shall prepare a Baseline Element Condition Report (BECR) in accordance with Section 2.5.3.

The Developer shall hold a DB Period O&M meeting with the LA DOTD within 14 days following the Project Kickoff Meeting. The agenda for the meeting shall include initial discussions of all aspects of the Developer's DB Period O&M Plan, with a focus on work plan and schedule. The Developer shall address the following with the LA DOTD:

(x) Coordination of O&M responsibilities between the LA DOTD and the Developer;

(y) Development of O&M protocols between the LA DOTD and the Developer to accommodate the LA DOTD's O&M responsibilities on the Existing Facilities, including Biennial Bridge Inspections, maintenance and repair activities, MAP, incident management, and hurricane/severe weather response; and

(z) Identification of detour routes that may require maintenance or upgrades to meet Performance Requirements. Initiate planning for any Work required by the Developer prior to implementing DB Period TMPs.

The Developer shall include plans for the above in the DB Period O&M portion of the MMP.

Following LA DOTD's approval of the DB Period O&M Plan and Safety Plans as required in Section 2.2.1 and based on information in the BECR, the Developer shall maintain all Elements within the DB Limits in accordance with the Performance Requirements in Exhibit 22-1 during the DB Period as specified in the requirements of the Contract Documents. The Developer shall have nine months following NTP to bring all Elements within the DB Limits into compliance with the Performance Requirements in Exhibit 22-1.

The Developer shall ensure a smooth transition into O&M Work after Partial Acceptance for those Elements of the Project that are included within the O&M Limits. For those Elements where the Developer has performed DB Period O&M Work on roadways or Elements outside the O&M Limits, the Developer shall request that the LA DOTD or the relevant facility owner inspect the DB Work for Partial Acceptance. Such request shall include certification by the Developer that such DB Work conforms with the requirements of the Contract Documents, and the Developer shall cease responsibility for O&M Work.

Section 22.10 Operations and Maintenance Requirements after Partial Acceptance

The Developer shall be responsible for and shall carry out Operating Period O&M Work within the O&M Limits and as shown in Exhibit 22-3, O&M Responsibility Matrix. The Developer shall:

(a) Coordinate activities of other entities with interests or activities within the O&M Limits;

(b) Conduct daily patrols of all lanes of the Project within the O&M Limits to identify conditions that are unsafe or have the potential to become unsafe, conditions that could threaten the infrastructure, and to attend to existing or changing conditions;

(c) Identify and correct all damages from Incidents;

(d) Monitor and observe weather and weather forecasts to proactively deploy resources to minimize delays and safety hazards due to high winds, severe thunderstorms, hurricanes, tornadoes, heavy rainfall and flooding, hail, snow, ice, or other severe weather events that may impact any Developer materials or equipment;

(e) Remove debris, including litter, drift, graffiti, animals, and abandoned vehicles or equipment from the O&M Limits;

(f) Minimize the risk of damage, disturbance, or destruction of third-party property during the performance of O&M Work;

(g) Coordinate with and enable the LA DOTD and others with statutory duties or functions in relation to the Project or related transportation facilities to perform such duties and functions;

(h) Perform O&M Work including inspections, traffic control, and Routine Maintenance in accordance with the MMP, Article 21, and the requirements of the Contract Documents; and

(i) Promptly investigate and resolve reports or complaints received from all sources including tolling related complaints.

The Developer shall include plans for the above in the Operating Period O&M Plan portion of the MMP. Following Partial Acceptance, the Developer shall operate and maintain all Elements within the O&M Limits in accordance with the Performance Requirements in Exhibit 22-2 during the Operating Period. The Developer shall perform the O&M Work within the O&M Limits such that the Project shall be available 24 hours per day, 7 days per week, and 365 days per year.

Section 22.11 Operations and Maintenance Performance Requirements

O&M Performance Requirements are presented in Exhibit 22-1 for the DB Period and in Exhibit 22-2 for the Operating Period (Performance Requirements Tables). These Performance Requirements are set out as minimum standards. At all times, the Developer shall demonstrate Good Industry Practice and meet the Performance Requirements set out in the Contract Documents.

For any Mitigation, Temporary Repair, or Permanent Repair as shown in Exhibits 22-1 and 22-2 exceeding one month, the Developer shall provide a repair plan within three days of notification of Noncompliance Event, and include a discussion of the status in the Monthly Operations and Maintenance Report.

The Developer shall keep updated within the MMS a list of known MFs and damages together with the Developer's assessment of repair responsibility. No later than 24 hours after the Developer becomes aware of any new MF and damages, the Developer shall add such MF and damages to the MFs Schedule in the MMS and shall notify the LA DOTD about:

(a) Any MF that the Developer considers it is not required to repair as part of the base scope for O&M Work with an explanation why the Developer considers such repair to be the responsibility of the LA DOTD or another party;

(b) Any activity by the LA DOTD or a third party that the Developer considers may have adversely affected or has the potential to adversely affect the safe operation of an Existing Facility; and

(c) Any MF in an Existing Facility that, in the opinion of the Developer, represents an immediate or imminent health or safety hazard to Users or road workers.

22.11.1 Tolling Operations Requirements

See Section 21.4for Tolling Operations requirements.

22.11.1.2 Roadside Toll Collection System Maintenance

See Section 21.4.2for RTCS Maintenance requirements.

22.11.1.3 Back Office/ Customer Service Center Operations

See Section 21.4.3for BOS/CSC Operations requirements.

Section 22.12 Renewal Work

The Developer shall promptly perform Renewal Work to renew, repair, or replace any Element or Elements when any of the following conditions occur:

(a) The Element is scheduled for replacement or Renewal Work in accordance with the O&M Work Schedule and design life or Handback requirements in Article 23;

(b) The condition of any Element is such that early replacement or Renewal Work is needed to enable Performance Requirements to be reliably achieved;

(c) Noncompliance Events have occurred or may be expected to occur on a frequent basis and there is a risk that the Developer will be unable to comply with its obligation to remedy and repair such events within the applicable Response Time as identified in the Performance Requirements Table;

(d) The reliability is less than 99.7 percent for safety-critical Elements;

(e) The reliability is less than 90 percent for Elements other than safety-critical Elements;

(f) The Element ceases to function or dies (as in the case of plantings); and

(g) The frequency of repair is higher than that recommended in the manufacturer's preventive maintenance schedule.

The term "safety-critical" means that should an Element fail, the safe operation of the Project would be in jeopardy or an immediate or imminent safety hazard would result.

The term "reliability" shall be calculated as the in-service time measured over a moving 365-day period. For example, if an Element is out of service for 20 days of 365 days, its "reliability" is 94.5 percent (i.e., (365 – 20)/365 x 100 percent).

Whenever Renewal Work is performed, the Developer shall submit to the LA DOTD record drawings and supporting calculations and details. Prior to the expiry or earlier termination of any part of the O&M Work, the Developer shall submit to the LA DOTD a complete set of record drawings and supporting calculations and details that accurately show all Renewal Work and any other changes to the Project during the performance of the O&M Work.

All Renewal Work shall follow the applicable design and construction requirements within the Technical Provisions as applicable to the original design, installation, or construction unless such Technical Provisions have been superseded by Good Industry Practice. When an Element is renewed or replaced, and upon the first installation of the renewed or replaced Element into the Project, the Developer shall not have the benefit of any Mitigation, Temporary Repair, or Permanent Repair Periods. The Developer shall cause all Renewal Work to achieve the Performance Requirements as shown in Exhibit 22-1 and 22-2 to the Element from the date that the renewed or replaced Element is incorporated into the Project.

22.12.1 Renewal Work Plan and Schedule

22.12.1.1 Renewal Work Plan

The Developer shall submit a Draft Renewal Work Plan (RWP) for Review and Comment no later than 90 days after NTP. The Developer shall submit a Final RWP for Approval 180 days prior to the scheduled Partial Acceptance date. The Developer shall conform the Draft and Final RWP to the maintenance and rehabilitation related aspects of the MMP requirements.

The RWP shall be consistent with the general O&M obligations and define the process and procedures for Renewal Work during the Operating Period. The RWP shall include:

(a) Performance requirements, measurement procedures, and threshold values at which renewal is required for each Element of the Project;

(b) Inspection procedures and frequencies, and subsequent maintenance and Renewal Work to address noted deficiencies of the physical Elements; and

(c) Response times to mitigate hazards, permanent remedy, and permanent repair of MFs, which shall, at a minimum, be in accordance with Exhibits 22-1 and 22-2. Differentiate response times for MFs that require prompt attention due to immediate or imminent damage or deterioration, excluding those items that have no impact on any parties other than the Developer and response times for other MFs.

The RWP shall be updated at least annually or more frequently, as necessary, to indicate the O&M requirements for the equipment and systems as they are revised, upgraded, rehabilitated and, as applicable, replaced. The RWP shall cover Relevant Infrastructure within the O&M Limits during the Operating Period. The Developer shall submit the RWP update as part of the overall annual MMP update.

The RWP shall be a complete document that includes a brief description of the Elements within the O&M Limits. In addition to the items listed above, the following minimum requirements shall be included in the RWP:

(a) Overview description of all Elements within the O&M Limits, including facilities, systems, and equipment to be operated and maintained by the Developer;

(b) Logical system breakdown of the Elements within the O&M Limits, including facilities equipment and systems and the levels of maintenance to be provided by the Developer's staff;

(c) Description of the staffing plan and related workshops, maintenance garages, major equipment, vehicles, storage facilities, etc., as necessary to support the Renewal Work;

(d) List of major systems and equipment manufacturers/ vendors, including their contact information (contact person, address, telephone numbers, website address);

(e) List of Maintenance Contractors used to perform any Renewal Work activities and the identification of the services expected to be provided;

(f) List of preventive maintenance procedures;

(g) Planned Renewal Work Schedule indicating the tasks and required frequency;

(h) List of Renewal Work activities;

(i) Diagnostic procedures for equipment and systems;

(j) Detailed preventive maintenance procedures;

(k) Detailed reactive maintenance procedures;

(l) Spare parts inventory procedures;

(m) List of spare parts inventory (on-site and off-site);

(n) Repair procedures for repairs that are anticipated;

(o) Systems and equipment manufacturer's operations and maintenance manuals;

(i) Software manuals;

(ii) Wiring diagrams, schematic drawings, logic block diagrams, etc.;

(iii) Assembly and disassembly drawings clearly identifying the components;

(iv) Copies of all inspection forms, checklists, etc.;

(v) Lane Closure plans; and

(vi) Summary listing of all Renewal Work tasks categorized by system/discipline and the related maintenance classifications.

Standard service manuals for commercially available equipment and products shall be acceptable only if the equipment provided is standard off-the-shelf equipment without any custom features or functions.

Custom equipment and systems shall have custom O&M manuals that include detailed information that addresses the custom features of the equipment provided and shall include drawings. The non-applicable portions of standard manuals shall be neatly encircled and cross-hatched to clearly indicate that these sections are not applicable.

The Developer shall update the RWP including preparing maintenance and renewal plans and schedules annually. During each year of the O&M Term, the Developer shall incorporate into the RWP all planned maintenance and Renewal Work.

The Developer shall submit the RWP for the next Calendar Year for Review and Comment by November 1 of each year. The RWP shall describe all the Renewal Work activities planned and the dates and expected durations of each activity, as well as the total quantity of planned maintenance hours and lane-hours needed to accomplish the Renewal Work. The RWP shall also include Renewal Work hours, estimated costs for the Renewal Work and a Renewal Work Schedule.

The Developer shall use the results of the inspections described in its RWP and other relevant information to determine, on an annual basis, the Residual Life of each Element of the Project within the O&M Limits. From this, the Developer shall determine the scope of the Renewal Work Schedule.

22.12.1.2 Renewal Work Schedule

The Developer shall prepare a Renewal Work Schedule on an annual and monthly basis. The annual Renewal Work Schedule for the next five LA DOTD Calendar Years shall be submitted for Approval by November 1 of each year. The Monthly Renewal Work Schedule, except for the first month of the year scheduled, shall be submitted for Approval at least 30 days prior to the commencement of the monthly scheduled Renewal Work.

The annual and monthly Renewal Work Schedules shall describe all scheduled maintenance and Renewal Work; the dates, times, and durations of each; and the total quantity of planned maintenance hours and lane hours. The Renewal Work Schedule shall be included in the RWP.

22.12.2 Renewal Work Report

The Renewal Work Report shall identify all planned Renewal Work for the period, the actual Renewal Work performed for the period, and confirmation that all Renewal Work was performed in compliance with the O&M procedures. The Renewal Work Report shall be included in the Operations and Maintenance Report.

After Partial Acceptance, a Draft Renewal Work Report shall be submitted monthly, and a Final Renewal Work Report shall be submitted quarterly as part of the Draft and Final Operations and Maintenance Reports and shall be broken down for each month of the quarter.

The Draft and Final Renewal Work Reports shall include the following data and information, at a minimum:

(a) Summary of the Renewal Work for each month of the quarter;

(b) Summary of the Renewal Work performed and completed each month;

(c) Summary of the unplanned maintenance and repairs performed and completed during the quarter;

(d) Summary of the Renewal Work that was not completed as planned. Include reasons for the not completing the Work and a summary of deferred days for each deferred item;

(e) Summary of the maintenance activities performed for the month beyond the Renewal Work;

(f) Detailed results of all Renewal Work and other O&M Work that was performed during the month;

(g) Reconciliation with the RWP and Renewal Work Schedule to identify the Renewal Work completed, the major Renewal Work remaining, as well as any changes to the RWP or Renewal Work Schedule;

(h) Revised Renewal Work Schedule looking ahead one-year reflecting actual maintenance and Renewal Work performed;

(i) Summary of Closures, Permitted Closures, and planned maintenance and Renewal Work hours for the coming month, including details describing the location, duration, and reason of each;

(j) Detailed results of all inspections, assessments, and testing activities, including the procedures, forms, etc.;

(k) Equipment "out-of-service" report that lists all mechanical, and electrical equipment that was not functional at some time during the month that includes data such as durations, reasons, and cross-references to any events that may be related to the out-of-service equipment;

(l) QA Review of all maintenance personnel actions, lessons learned, etc.;

(m) Summary of staff and hours worked for the month; and

(n) Listing of all Elements, including individual equipment, with a summary of all the maintenance activities performed during the month and the complete history of maintenance for the Element as reported by the MMS.

Section 22.13 Inspections

22.13.1 General Inspections

The Developer shall establish inspection procedures and frequency as well as a plan to implement a program of inspections necessary for the O&M Work and shall show all such inspections within the O&M Work Schedule.

Inspection procedures shall:

(a) Certify the continuing safety of the Project for Users;

(b) Prioritize the necessary inspections to promptly identify and record MFs;

(c) Ensure that all MFs are identified and repaired such that any hazard to Users is mitigated, temporarily repaired, or permanently repaired within the period specified in the Performance Requirements Table;

(d) Identify MFs to be included for repair either within the Developer's annually recurring highway Routine Maintenance and repair program or as Renewal Work;

(e) Respond to reports or complaints received from Users and the public;

(f) Take into account and adjust for Incidents and Emergencies affecting the Project; and

(g) Take into consideration data to monitor performance of the Project and to establish priorities for future O&M and Renewal Work.

The Developer shall perform General Inspections in accordance with the MMP so that the repairs of all MFs are included in planned programs of work. The Developer shall employ only trained personnel for the purpose of such inspections, capable of accurately categorizing and recording MFs in accordance with the requirements of the Performance Requirements Tables and these Technical Provisions.

The Developer shall record details of the manner of inspection (e.g., Lane Closure or shoulder closure), the weather conditions, and any other unusual features of the inspection on O&M Records.

22.13.2 Specialist Inspections

The Developer shall ensure that personnel performing inspections are certified as inspectors and/or raters by the applicable certifying agency for the type of inspection being performed. Inspections, reviews, and testing performed for the O&M Work shall only be performed by personnel with appropriate training and qualifications, using appropriate equipment that is accurately calibrated and maintained in good operating condition at an AMRL (AASHTO R18, "Establishing and Implementing a Quality System for Construction Materials Testing Laboratories") accredited facility, or at a facility with comparable certification (e.g., ISO 17025, "General requirements for the competence of testing and Calibration laboratories").

The Developer shall include the inspection results in the MMS.

22.13.3 NBIS Inspections

In addition to inspections being performed by the Developer, the LA DOTD will conduct inspections of all bridges within the O&M Limits in compliance with the latest FHWA / NBIS and LA DOTD requirements. The results NBIS Inspections will be made available to the Developer upon their completion.

Using the results of the NBIS Inspections and other available sources, the Developer shall determine the condition of all Elements within the O&M Limits and shall identify structural and non-structural deficiencies. The Developer shall not rely solely upon the LA DOTD for inspections or information required for performance of the O&M Work.

No later than 90 days after receipt of the NBIS Inspection reports, the Developer shall prepare a condition survey report for Approval that provides details of all recommended repairs for each Element, using the definitions of condition and terminology as defined in the MMS and the original contract drawings identification system.

22.13.4 Special Bridge Inspections

Special Bridge Inspections are defined as inspections of Elements for which testing, special tools, or equipment is necessary. The Developer shall identify the need for Special Bridge Inspections following its receipt of the NBIA Inspection report, or when non-typical conditions of any bridge Element or system are identified. This shall include whenever a MF or structural condition exists that may give rise to a structural failure, or whenever a structural condition exists or is suspected, which, by reason of loading, deflection, allowable stress, or other factor, may have invalidated or exceeded the original design basis of any Element. The Developer shall be responsible for the performance of Special Bridge Inspections whenever Elements cannot be fully inspected by other methods of inspection contemplated for the NBIS Inspections. The Developer shall submit results of all Special Bridge Inspections to the LA DOTD within 30 days of completion.

22.13.5 Developer Performance Inspections

The Developer shall undertake Performance Inspections of Performance Sections randomly selected by the LA DOTD for audit purposes at least once every six months. Performance Sections shall consist of all travel lanes, including mainline lanes, shoulders, ramps, and frontage roads operating in one direction over a length of approximately 0.1-mile, together with all Elements of the Project within the O&M Limits associated with the 0.1-mile length of roadway unless otherwise specified in the Performance Requirements Tables.

The Developer shall establish Performance Sections referenced to the Louisiana control section and log mile system. The Developer shall establish and prepare plans identifying the Performance Sections. The plans shall identify the boundaries of each Performance Section and shall cross reference to an inventory describing each Element within the O&M Limits contained within each Performance Section. The Developer shall submit and update these plans with the applicable part of the MMP.

For the New Bridge, one Performance Section shall be subject to Performance Inspection every six months. The Developer shall assess the condition of each Element using the inspection and measurement method set forth in the column entitled "Inspection and Measurement Method" in the Performance and Measurement Table. The Developer shall create a new Maintenance Record for each Element physically inspected in accordance with the column titled "Measurement Record" on the Performance Requirements Exhibits 22-1 and 22-2. Performance Inspections shall be undertaken to a schedule agreed with the LA DOTD. The LA DOTD shall be given the opportunity by seven days' notice, to accompany the Developer when it undertakes the physical inspections associated with the Performance Inspections.

Section 22.14 Submittals

See Article 24 for list of submittals.

Exhibit 22-1 O&M Performance Requirements for DB Period Exhibit

Exhibit 22-1 O&M Performance Requirements for DB Period Exhibit													
ID #	Element	Performance Requirement	Inspection and Measurement Method	Inspection Frequency	Performance Measurement Record	Description of Noncompliance Event	Mitigation	Temporary Repair	Permanent Repair	Recurrence Intervals			Applicable Non-compliance Points
										Mitigation	Temporary Repair	Permanent Repair	
1.) Roadways													
1.1	Pavements (including bridge decks, covers, gratings, frames, and boxes)	Roadways are safe for travel	Visual inspection	Monthly	Roadway surfaces are free from distresses posing immediate hazardous conditions for travel	Roadway surfaces contain distresses posing immediate hazardous conditions for travel	1 hour	12 hours	3 days	1 hour	12 hours	3 days	5
1.2	Pavements (including bridge decks)	Roadways are suitable for operations	Visual inspection	Monthly	At least 90% of Pavement is free from severe fatigue cracking greater than 1 square foot in area.	Less than 90% of Pavements contain high severity fatigue cracking greater than 1 square foot in area	N/A	24 hours	4 months	N/A	24 hours	4 months	2
1.3	Flexible Pavements (including bridge decks)	Roadways are free from potholes	Visual inspection	Monthly	No potholes greater than 0.5 square foot area and 1 inch in depth	Existence of potholes greater than 0.5 square foot area and 1 inch in depth	N/A	24 hours	4 months	N/A	24 hours	4 months	2
1.4	Pavement condition	All jointed concrete pavement is free from structural and functional cracking	Cracking percent rated as Item 52 of HPMS Field Manual density (rigid surface) – 0.1 mile x one lane; per AASHTO PP 67 and based on functional cracks using images collected following AASHTO PP 68; data processed by LA DOTD.	Yearly	100% of jointed concrete Performance Sections < 15	Less than 100% of jointed concrete Performance Sections < 15	N/A	24 hours	4 months	N/A	24 hours	4 months	2
1.5	Pavement condition	All continuously reinforced	Cracking percent rated as Item 52	Yearly	100% of continuously	Less than 100% of continuously	N/A	N/A	4 months	N/A	N/A	4 months	4

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		concrete pavement is free from structural and functional cracking	of HPMS Field Manual density (rigid surface) – 0.1 mile x one lane; per AASHTO PP 67 and based on functional cracks using images collected following AASHTO PP 68; data processed by LA DOTD.		reinforced concrete Performance Sections < 10	reinforced concrete Performance Sections < 10							
2.) Drainage													
2.1	Drainage systems, including pipes and channels	Drainage systems function properly	Visual inspection	Monthly	Each element of drainage systems are maintained in proper function clearing and/or emptying as appropriate from the point at which water drains from the travel way to the outfall or drainage way	Any length of drainage pipe or channel with less than 80% of cross section clear	1 hour	24 hours	7 days	4 hours	24 hours	3 days	2
2.2	Drainage treatment	Drainage treatment systems function correctly	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	2
2.3	Pumps and sumps	Pumps and sumps function correctly	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	2
2.4	Travel ways	Travel ways are free from water that could be a hazard to users	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	5

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
2.5	Discharge systems	Discharge systems function correctly	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	2
3.) Structures													
3.1	Structures	Structures are safe for travel	Visual inspection	Monthly	Structures free from distresses posing immediate hazardous conditions for travel	Structures containing distresses posing immediate hazardous conditions for travel	1 hour	12 hours	7 days	1 hour	12 hours	3 days	5
3.2	Structures	Structures are suitable for operations	Visual inspection	Monthly	Structure NBIS condition ratings are no less than the ratings documented as of the Setting Date	Any occurrence when a structure's NBIS condition rating is less than the rating as of the Setting Date	6 hours	24 hours	7 days	12 hours	24 hours	7 days	2
3.3	Structures	Structure are free from scour, damage to scour protection, and impact damage	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	6 hours	24 hours	7 days	12 hours	24 hours	7 days	2

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
3.4	Structures	Structures and ancillary components are properly maintained	Visual inspection	Monthly	Structures and ancillary components are free from: • loose anchorage or fasteners Joints, bearings, and bearing shelves are clean. Safety related components function as intended	Structures or ancillary components contain: • loose anchorage or fasteners Joints, bearings, or bearing shelves are not clean Safety related components do not function as intended	6 hours	24 hours	7 days	12 hours	24 hours	7 days	2
3.5	Drainage devices (including deck drains, scuppers, pipes, weep holes, weep pipes, manholes, and chambers)	Drainage system functions properly	Visual inspection	Monthly	Drainage devices functioning properly, unobstructed in at least 90% of its cross section	Any length of drainage pipe or channel with less than 90% of cross section clear	6 hours	24 hours	7 days	12 hours	24 hours	7 days	3
3.6	Retaining walls and all associated elements	Maintain retaining walls and associated elements	Visual inspection	Monthly	Maintain walls so they are safe and function as intended	Failure to maintain walls so they are safe and function as intended	24 hours	1 week	1 month	24 hours	1 week	1 month	3
4.) Pavement Markings and Delineators													
4.1	Pavement markings	Pavement markings are clean and visible during day and night and are correctly placed	Visual inspection	Monthly	Pavement markings in compliance with MUTCD and LA DOTD Standards and are: clean and visible; whole and complete; and of the correct color, type, width, length; and in compliance with	Less than 90% of markings visibility and condition meets or exceeds the Performance Measurement Record	24 hours	3 days	7 days	24 hours	24 hours	7 days	1

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
					retroreflectivity requirements								
4.2	Delineators and reflective markers	Delineators and markers are visible and are of the correct type.	Visual inspection	Monthly	Markers and delineators are: clean and visible; of the correct color and type; legible and reflective in accordance with MUTCD and LA DOTD Standards; and straight and vertical	Less than 90% of delineators and markers condition and presence meets or exceeds the Performance Measurement Record	24 hours	3 days	7 days	24 hours	24 hours	7 days	1
5.) Guardrails, Safety Barriers, and Impact Attenuators													
5.1	Guardrails and safety barriers	All guardrails and safety barriers, including concrete barriers are maintained free of MFs and undesirable vegetation, appropriately placed and correctly installed at the correct height and distance from roadway or	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	1 month	24 hours	3 days	1 month	2

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		obstacles and providing intended safety function											
5.2	Impact attenuators	All impact attenuators appropriately placed and correctly installed and providing intended safety function	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	1 month	24 hours	3 days	1 month	2
6.) Traffic Signs, Signals, and Structural Supports													
6.1	Traffic signs	Signs are clean, correctly located, clearly visible, legible, reflective, at the correct height and free from structural and electrical MFs per the Technical Provisions	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	2 months	24 hours	N/A	1 month	2
6.2	Traffic signals	Traffic signals are maintained in accordance with the MUTCD	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	1 month	24 hours	3 days	1 month	2
6.3	Structural supports	Sign and signal foundations, supports, and appurtenances are installed and maintained in accordance with standards, specifications, Plans, shop drawings, etc.	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	1 month	24 hours	3 days	1 month	2

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
7.) Lighting, ITS, etc.													
7.1	Roadway Lighting	Lighting is functioning, free from MFs, and provides acceptable uniform lighting quality	Visual inspection	Monthly	Maintain functionality of at least 90% of all roadway luminaires at all times, and no more than 3 consecutive lights operating improperly at any time.	< 90% of all roadway lighting luminaires functioning in a 1 mile section, or more than 3 consecutive lights are operating improperly at any time.	24 hours	7 days	3 months	24 hours	7 days	3 months	2
7.2	Roadway Lighting	Lanterns are clean and correctly positioned	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	3 months	24 hours	7 days	3 months	2
7.3	Roadway Lighting	Lighting systems and components are free from any damage or vandalism	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	3 months	24 hours	7 days	3 months	2
7.4	Poles and supports (light, ITS, utility, etc.)	Poles and supports are functional, upright, correctly founded, visually acceptable, and structurally sound	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	3 months	24 hours	7 days	1 month	2 roadway lighting poles 5 all other poles
7.5	Cameras, traffic control devices, and ITS equipment	All cameras, traffic control devices, and ITS equipment remain fully functional, fully communicating, undamaged, unobstructed, and properly fastened	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	12 hours	24 hours	1 week	12 hours	24 hours	1 week	5

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
8.) Fences													
8.1	Boundary fences	Integrity and structural condition of fences are maintained	Visual inspection	Monthly	Performance Requirement achieved and sections of fencing do not allow access to the highway	Failure to achieve Performance Requirement or sections of fencing allows access to the highway	24 hours	7 days	1 month	24 hours	24 hours	2 weeks	3
9.) Roadside Management													
9.1	Landscaped areas	Grass is mowed and maintained to an appropriate height	Visual inspection	Monthly	Maintain height of grass and weeds between 5 and 18 inches	Failure to maintain height of grass and weeds between 5 to 18 inches	24 hours	N/A	1 month	24 hours	N/A	2 weeks	3
9.2	Vegetated areas	Vegetation is maintained within appropriate condition	Visual inspection	Monthly	Spot mowing maintains visibility of appurtenances and sight distance	Failure for spot mowing to maintain visibility of appurtenances and sight distance	24 hours	N/A	1 month	24 hours	N/A	2 weeks	3
9.3	Vegetated areas	Vegetation is maintained within appropriate condition	Visual inspection	Monthly	Grass or vegetation does not encroach into or on paved shoulders, lanes, sidewalks, islands, riprap, traffic barriers, or curbs	Grass or vegetation encroaches into or on paved shoulders, lanes, sidewalks, islands, riprap, traffic barriers, or curbs.	24 hours	N/A	1 month	24 hours	N/A	2 weeks	3
10.) Earthworks, Embankments, and Cuttings													
10.1	Slopes	Slopes are maintained in general conformance to the original graded cross-sections and all eroded materials are removed and disposed	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	1 month	24 hours	24 hours	2 weeks	3

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
10.2	Slopes	Landscaping materials are maintained and slopes are reseeded and re-vegetated for erosion control purposes as appropriate	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	1 month	24 hours	N/A	2 weeks	3
11.) User and Third Party Responsiveness													
11.1	Respond to inquiries and/or complaints	Respond to inquiries and complaints effectively and in a timely manner a.) Contact the party within 2 business days following being notified of or receiving initial inquiry b.) All Work resulting from requests is scheduled within 2 business days of contact/ notification c.) Follow-up contact with the party within 3 business days of initial inquiry/ notification d.) All concerns/requests are resolved to LA DOTD's satisfaction within 2 weeks of	Visual inspection / report submission	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	2 business days	N/A	N/A	2 business days	N/A	N/A	3

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		the initial inquiry/ notification											
11.2	Inquiry / complaint / comment log	Maintain a log of inquiries, complaints, and comments and Developer responses throughout the DB Period.	Report submission	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	30 days	N/A	N/A	14 days	3
12.) Debris Removal, Sweeping, and Cleaning													
12.1	Roadway obstructions	Roadway free from obstructions and hazardous debris	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	N/A	2 hours	N/A	N/A	1 hour	5
12.2	Debris removal	Clear and remove debris from traffic lanes, hard shoulders, verges and central reservations, including animal carcasses. Keep areas under structures free from debris, stored materials, etc.	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	N/A	2 hours	N/A	N/A	1 hour	3
12.3	Sweeping	Keep all lanes, hard shoulders, gore areas, ramps, intersections, islands and other roads swept clean	Visual inspection	Monthly	No accumulated buildup of dirt, debris, and litter on roadways or bridges, greater than 24 inches wide or 0.50 inches deep	Failure to achieve Performance Requirement	24 hours	N/A	14 days	24 hours	N/A	24 hours	2

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
12.4	Sweeping	Remove all sweepings without stockpiling in the right of way and dispose of at an approved tip.	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	14 days	24 hours	N/A	24 hours	3
12.5	Litter removal	Maintain the right of way in a neat condition, remove litter regularly, and dispose of all litter and debris collected at an approved solid waste site.	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	14 days	24 hours	N/A	24 hours	3
12.6	Litter removal	Pick up large litter items before mowing operations	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	14 days	24 hours	N/A	24 hours	4
12.7	Graffiti	Remove all graffiti and in a manner and using materials that restore the surface to a like appearance similar to adjoining surfaces	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	24 hours	30 days	N/A	24 hours	7 days	2

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
13.) Miscellaneous													
13.1	General	Provide accurate, complete, and timely reporting of the Noncompliance Events and Noncompliance Points assessed and accrued in accordance with the Contract Documents.	Report	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	3 days	N/A	N/A	24 hours	4
13.2	Submittals	Provide all Submittals not otherwise expressly specified in this table in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	7 days	N/A	N/A	24 hours	3
13.3	Submittals	Provide all required schedules during the DB Period in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	3
13.4	Submittals (See Note 1 following this table)	Provide or update any Developer prepared management Plans or Sub-Plans in the time prescribed and in accordance with	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	7 days	N/A	N/A	24 hours	3

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		the Contract Documents											
13.5	Submittals (See Note 1 following this table)	Provide or update the Maintenance Management Plan in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	7 days	N/A	N/A	24 hours	3
13.6	Meetings	Schedule and attend all required meetings in the time prescribed and in accordance with the Contract Documents	Meeting attendance record	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	2
13.7	General (See Note 1 following this table)	Comply with all Developer prepared management Plans or Sub-Plans in accordance with the Contract Documents	Visual inspection / as specified in the Plans or Sub-Plans	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	24 hours	7 days	24 hours	24 hours	7 days	4
13.8	General (See Note 1 following this table)	Comply with the requirements of the Maintenance Management Plan	Visual inspection / as specified in the Maintenance Management Plan	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	24 hours	7 days	24 hours	24 hours	7 days	4

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
13.9	General	Continually inspect all areas within the DB Limits and the Work to identify any potential safety hazards and act in accordance with Developer's Safety Plan with regard to responding to safety hazard issues during the DB Period	Visual inspection / as specified in the Developer's Safety Plan	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	15 days	N/A	N/A	15 days	5
13.10	General (See Note 1 following this table)	Perform maintenance activities in a manner that does not represent a hazard to workers or the general public and in accordance with the Safety Plan and/or the O&M Safety Plan	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	5 minutes	1 hour	24 hours	1 minute	1 hour	24 hours	5

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
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13.11	General	Remediate in accordance with Good Industry Practice and any other terms of the Contract Documents any condition within the maintenance limits that represents a material hazard to workers or the general public	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	5 minutes	24 hours	7 days	5 minutes	24 hours	7 days	5
13.12	General	Provide timely notice to LA DOTD of damage to any Element of the Work including the causation of and contributing factors to the damage	Visual inspection / issuance of notice to LA DOTD	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	2
13.13	General	Meet all required work zone safety, management, MOT, and detour routes during maintenance operations in accordance with the Contract Documents	Visual inspection / as specified in the Contract Documents	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	15 days	N/A	N/A	24 hours	2

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
13.14	Inspections	All inspectors to have proper certification in accordance with applicable standards and specifications and in accordance with the Contract Documents	Report submission	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	14 days	N/A	N/A	30 days	4
13.15	Inspections	All MFs must be properly identified in the Inspection reports, Operations and Maintenance Plan, and/or Work undertaken and in accordance with the Contract Documents	Visual inspection / report submission	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	3 days	N/A	N/A	15 days	4
13.16	Inspections	Identified MFs to be repaired in accordance with the Operations and Maintenance Plan and the Contract Documents	Visual inspection / report submission	Annual	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	14 days	N/A	N/A	30 days	3
13.17	Work hours	Comply with work restrictions in place during regular time	Visual inspection / as specified in the Contract Documents and in accordance with Permits issued	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	4

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
13.18	Work hours	Comply with work restrictions in place during holidays	Visual inspection / as specified in the Contract Documents and in accordance with Permits issued	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	4
13.19	Access	Maintain access for businesses and pedestrians in accordance with the Contract Documents	Visual inspection	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	15 minutes	N/A	24 hours	15 minutes	N/A	24 hours	4
13.20	Public information	Use appropriate methods to issue timely and factually correct information to the public in accordance with the Public Information and Communication Plan and Contract Documents	Visual inspection / publicly disseminated information	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	15 days	1 hour	N/A	30 days	4
13.21	Permits	Obtain and comply with all required Permits; do not perform Work without Permits being active or approved	Visual inspection / as specified by Permits	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	Immediately	N/A	N/A	24 hours	5
13.22	USDOT and FMSCA regulations	Developer to follow all USDOT and Federal Motor Carrier Safety Administration (FMSCA) CDL regulations	Visual inspection / report submission	Ongoing / as reported	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	Immediately	N/A	N/A	24 hours	5

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
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13.23	Utilities	Follow all requirements for all subsurface utilities maintained by Developer in accordance with Louisiana OneCall	Visual inspection / as established by Louisiana OneCall	Monthly	Performance Requirement achieved	Less than 100% of Developer utilities marked when required or failure to achieve Performance Requirement	N/A	N/A	48 Hours	N/A	N/A	24 hours	2
13.24	Utilities	Maintain access to all external Stakeholder utilities at all times	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	2 weeks	24 hours	N/A	2 weeks	3
13.25	Payments	Issue payments to subcontractors in the time prescribed and in accordance with the Contract Documents	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	48 hours	N/A	N/A	24 hours	3
13.26	Payments	Submit specified subcontractor payment reports in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	3
13.27	Payments	Submit accurate payrolls to LA DOTD in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	3 days	N/A	N/A	24 hours	5
13.28	Payments	Submit missing or corrected payrolls to LA DOTD within 10	Monthly report	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	2

EXHIBIT 22-1 O&M PERFORMANCE REQUIREMENTS FOR DB PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		days of notice by LA DOTD											
13.29	As-Built Plans	Developer to provide As-Built Plans and checklists in the time prescribed and in accordance with the Contract Documents	Visual inspection / Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	15 days	N/A	N/A	15 days	2
13.30	Audits and reviews performed by LA DOTD or other Governmental Entity	Provide information required to complete audit or review and comply with audit findings or address review comments in a timely manner	Audit, review, Agreement, third party facility MOU's or a combination thereof	When performed	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	10 days	N/A	N/A	10 days	4
13.31	Environmental Wells	Coordinate with and provide access to LA DOTD for inspection and maintenance of environmental wells in accordance with the Technical Provisions	Technical Provisions	Quarterly	Performance Requirement achieved	Failure to coordinate or provide access to environmental wells in accordance with the Technical Provisions	N/A	N/A	5 days	N/A	N/A	5 days	3

Notes to accompany Exhibit 22-1:

1. Where noted in Category 13 –Miscellaneous, the mitigation timeframe is the time allowed to initiate corrective action to the immediate issue which caused the Noncompliance Event. The temporary repair timeframe is provided to review and revise the implementation of the Project Management Plan requirements and take appropriate action towards permanent remedy by mutual agreement. The permanent repair shall be the full remedy for the initial Noncompliance Event.
2. Please see Exhibit 22-3 for details regarding assets that are the responsibility of the Developer to maintain
3. Exception to Accrual of Noncompliance Points is listed in Section 1.05 (h) of Exhibit O.

Exhibit 22-2 O&M Performance Requirements for Operating Period Exhibit

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
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1.) Roadways (See Note 4 following this table)													
1.1	Pavements (including bridge decks, covers, gratings, frames, and boxes)	Roadways are safe for travel	Visual inspection	Monthly	Roadway surfaces are free from distresses posing immediate hazardous conditions for travel	Roadway surfaces contain distresses posing immediate hazardous conditions for travel	1 hour	12 hours	3 days	1 hour	12 hours	3 days	5
1.2	Pavement condition	All travel lanes, including ramps, have a smooth ride quality	Ride quality: per International Roughness Index (**"IRI"**) according to LA DOTD Standards	Yearly	100% of Performance Sections < 170 in/mi	Less than 100% of Performance Sections < 170 in/mi	N/A	N/A	4 months	N/A	N/A	4 months	5
1.3	Pavement condition	All travel lanes, including ramps, have a smooth ride quality	Ride quality: per International Roughness Index (**"IRI"**) according to LA DOTD Standards	Yearly	75% of Performance Sections < 100 in/mi	Less than 75% of Performance Sections <100 in/mi	N/A	N/A	4 months	N/A	N/A	4 months	3
1.4	Pavement condition	All travel lanes have an adequate skid resistance	Skid resistance: ASTM E 274 Standard Test Method for Skid Resistance Testing of Paved Surfaces at 50 MPH using a full scale smooth tire meeting the requirements of ASTM E 524	Yearly	100% of Performance Sections > 30	Less than 100% of Performance Sections > 30	N/A	5 days to place warning sign	4 months	N/A	5 days	4 months	5
1.5	Pavement condition	All ramps have an adequate skid resistance	Skid resistance: ASTM E 274	Yearly	100% of Performance Sections > 30	Less than 100% of Performance Sections > 30	N/A	5 days to place warning sign	4 months	N/A	5 days	4 months	5

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
			Standard Test Method for Skid Resistance Testing of Paved Surfaces at 50 MPH using a full scale smooth tire meeting the requirements of ASTM E 524										
1.6	Pavement condition	All travel lanes, including ramps, have an adequate skid resistance	Skid resistance: ASTM E 274 Standard Test Method for Skid Resistance Testing of Paved Surfaces at 50 MPH using a full scale smooth tire meeting the requirements of ASTM E 524	Yearly	90% of Performance Sections > 35	Less than 90% of Performance Sections > 35	N/A	5 days to place warning sign	4 months	N/A	5 days	4 months	5
1.7	Pavement condition	All pavement is free from Defects and MFs including and resulting from deleterious material such as oil, antifreeze, gasoline or other liquids spilled from vehicles onto roadway.	Visual inspection of all pavement by the Developer, LA DOTD or both	Yearly	No deleterious material and/or resulting pavement MFs or Defects greater than 30 square feet in area	Deleterious material and/or resulting pavement MFs or Defects greater than or equal to 30 square feet in area	N/A	24 hours	4 months	N/A	24 hours	4 months	3

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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1.8	Pavement condition	All asphalt surfaced pavement is free from structural and functional cracking	Cracking percent rated as Item 52 of HPMS Field Manual density (flexible surface) – 0.1 mile x one lane; per AASHTO PP 67 using images collected following AASHTO PP 68 "Standard Practice for Collecting Images of Pavement Surfaces for Distress Detection"; data processed by LA DOTD.	Yearly	100% of asphalt surfaced Performance Sections < 20	Less than 100% of asphalt surfaced Performance Sections < 20	N/A	N/A	4 months	N/A	N/A	4 months	4
1.9	Pavement condition	All jointed concrete pavement is free from structural and functional cracking	Cracking percent rated as Item 52 of HPMS Field Manual density (rigid surface) – 0.1 mile x one lane; per AASHTO PP 67 and based on functional cracks using images collected following AASHTO PP 68; data processed by LA DOTD.	Yearly	100% of jointed concrete Performance Sections < 15	Less than 100% of jointed concrete Performance Sections < 15	N/A	N/A	4 months	N/A	N/A	4 months	4
1.10	Pavement condition	All continuously reinforced concrete pavement is free	Cracking percent rated as Item 52 of HPMS Field Manual density	Yearly	100% of continuously reinforced concrete	Less than 100% of continuously reinforced concrete	N/A	N/A	4 months	N/A	N/A	4 months	4

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		from structural and functional cracking	(rigid surface) – 0.1 mile x one lane; per AASHTO PP 67 and based on functional cracks using images collected following AASHTO PP 68; data processed by LA DOTD.		Performance Sections < 10	Performance Sections < 10							

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
1.11	Pavement condition	All pavement is from rutting	Rutting (flexible surfaces) – 0.1 mile x one lane per AASHTO R 48 “Standard Practice for Determining Rut Depth in Pavements” and AASHTO PP 70 “Standard Practice for Collecting the Transverse Pavement Profile” using data collected according to AASHTO PP 69 “Standard Practice for Determining Pavement Deformation Parameters and Cross Slope from Collected Transverse Profiles”;	Yearly	100% of Performance Sections < 0.30”	Less than 100% of Performance Sections < 0.30”	N/A	N/A	4 months	N/A	N/A	4 months	5
1.12	Pavement condition	All pavement is free from potholes/fatigue cracking	Potholes/fatigue cracking (flexible surface); measure per the Strategic Highway Research Program’s Long-Term Pavement Performance (LTPP) Program Distress	Yearly	No medium or high severity potholes or high severity fatigue cracking greater than 1 square foot in area	Medium or high severity potholes or high severity fatigue cracking greater than 1 square foot in area	N/A	24 hours	4 months	N/A	24 hours	4 months	5

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
			Identification Manual										
1.13	Pavement condition	All pavement is free from edge cracking	Edge cracking (flexible surface); measure per LTPP Distress Identification Manual	Yearly	No medium or high severity edge cracking	Medium or high severity edge cracking exists	N/A	N/A	4 months	N/A	N/A	4 months	3
1.14	Pavement condition	All pavement is free from faulting,	Faulting (rigid surface) – 0.1 mile x one lane; per AASHTO R 36 “Standard Practice for Evaluating Faulting of Concrete Pavements” using equipment meeting the requirements of ASTM E 950 “Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with an Accelerometer-Established Inertial Profiling Reference:	Yearly	100% of Performance Sections < 0.15”	Less than 100% of Performance Sections < 0.15”	N/A	N/A	4 months	N/A	N/A	4 months	4

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
1.15	Pavement condition	All pavement is free from durability, longitudinal and transverse cracking	Durability, longitudinal and transverse cracks (rigid surfaces) – 0.1 mile x one lane; measure per LTPP Distress Identification Manual	Yearly	< 25' Longitudinal Cracks < 4 Transverse Cracks	> 25' Longitudinal Cracks exist > 4 Transverse Cracks exist	N/A	N/A	4 months	N/A	N/A	4 months	1
1.16	Pavement condition	All pavement is free from durability, longitudinal and transverse cracking	Durability, longitudinal and transverse cracks (rigid surfaces); measure per LTPP Distress Identification Manual	Yearly	No medium or high severity cracks No slabs broken into 3 or more pieces	Medium or high severity cracks exist. Slabs broken into 3 or more pieces	N/A	N/A	4 months	N/A	N/A	4 months	3
1.17	Pavement condition	All pavement is free from corner breaks and spalling	Corner breaks and spalling (rigid surfaces); measure per LTPP Distress Identification Manual	Yearly	No medium or high severity corner breaks or spalls	Medium or high severity corner breaks or spalls exist	N/A	24 hours for high severity	4 months	N/A	24 hours for high severity	4 months	4
1.18	Pavement condition	All pavement must be free from localized deficiencies such as pop outs or scaling (ridged surfaces)	Localized deficiencies such as pop outs or scaling (rigid surfaces); measure per LTPP Distress Identification Manual	Yearly	No localized deficiencies greater than 2 inches wide, or to a depth of 0.50 inch, or greater than 6 inches long	Localized deficiencies exist greater than 2 inches wide, or to a depth of 0.50 inch, or greater than 6 inches long	N/A	N/A	4 months	N/A	N/A	4 months	1
1.19	Pavement drainage (underdrain, trench drains, catch basins, inlets, outlets)	Each Element of the drainage system is maintained and functions correctly (travel way is free from standing water following a rain event)	Visual inspection or measurement of standing water within traveled lanes or paved shoulder	Yearly	Pavement drainage systems to stay free and clear	Failure for pavement drainage systems to stay free and clear	N/A	4 hours	4 months	N/A	4 hours	4 months	5

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
2.) Drainage													
2.1	Drainage systems, including pipes and channels	Drainage systems and all component elements maintained in proper function	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	2
2.2	Drainage treatment	Drainage treatment systems function correctly	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	2
2.3	Pumps and sumps	Pumps and sumps function correctly	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	2
2.4	Travel ways	Travel ways are free from water that could be a hazard to users	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	3
2.5	Discharge systems	Discharge systems function correctly	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	24 hours	7 days	4 hours	24 hours	3 days	2
3.) Structures													
3.1	Structures	Structures are safe for travel	Visual inspection and NBIS Inspections	Monthly	Structures free from distresses posing immediate hazardous conditions for travel	Structures containing distresses posing immediate hazardous conditions for travel	1 hour	12 hours	7 days	1 hour	12 hours	3 days	5
3.2	Structural systems and components	Structures are maintained in a satisfactory condition	Visual inspection and NBIS Inspections	Yearly	All deck, superstructure, substructure, and culverts NBIS condition ratings are seven or above; and all element level condition states, in accordance with the AASHTO Manual for Bridge Element	Occurrence of NBIS Inspection condition rating below seven for any deck, superstructure, or substructure; or culverts occurrence of any element level condition state, in accordance with the AASHTO Manual for Bridge Element	N/A	1 month	6 months	N/A	1 month	1 month	5

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
					Inspection, are one or two.	Inspection, of three or four. Instances of condition of any element not meeting general performance requirements as determined in accordance with Good Industry Practice.							
3.3	Structures	Structures are free from scour, damage to scour protection, and impact damage	Visual inspection and NBIS Inspections	Yearly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 week	1 month	6 months	1 week	1 month	1 month	2

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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3.4	Structures	Structures are properly maintained	Visual inspection and NBIS Inspections	Yearly	Structures free from: • debris, bird droppings, and vegetation • loose anchorage or fasteners • MFs in joint components including seals Joints, bearings, and bearing shelves are clean and functioning properly, including: • bearings allow for translation and rotation as designed • sliding and roller surfaces are clean and properly lubricated • bearing and joint manufacturers' recommendations are followed Special finishes are clean, performing to the appropriate standards, and are uniform in appearance.	Structures contain: • debris, bird droppings, and vegetation • loose anchorage or fasteners • MFs in joint components including seals Joints, bearings, and bearing shelves are not clean or functioning properly, including: • bearings do not allow for translation or rotation as designed • sliding and roller surfaces are not clean or properly lubricated • bearing and joint manufacturers' recommendations are not followed Special finishes are not clean, performing to the appropriate standards, or uniform in appearance.	24 hours	7 days	1 month	24 hours	7 days	1 month	3

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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3.5	Bridge wearing surface	Bridge wearing surface is in a structurally sound condition,	Visual inspection: • concrete cover measured at 10 ft intervals • cracks measured within designated 1,500 SF measurement areas on the surface of the deck prior to 3 hours after sunrise at concrete age greater than 28 days NBIS Inspections	Yearly	Wearing surface thickness is greater than 50% of design value Less than 150 linear feet of unsealed cracking with crack width greater than 0.020 inches within any 1,500 square foot measurement area 99% free of delamination and spalling	Occurrence of any instance where wearing surface thickness is less than 50% of design value Presence of more than 150 linear feet of unsealed cracking with crack width greater than 0.020 inches within any 1,500 SF measurement area. Presence of de-lamination or spalling greater than 1% of total wearing surface area	N/A	1 month	6 months	N/A	1 month	1 month	3
3.6	Drainage devices (including deck drains, scuppers, pipes, weep holes, weep pipes, manholes, and chambers)	Drainage system functions properly	Visual inspection	Monthly	Drainage devices 90% unobstructed and functioning properly Large items to be removed immediately.	Drainage devices more than 10% obstructed or not functioning properly	6 hours Immediately for items 24 inches wide or 0.50 inches deep	24 hours	7 days	12 hours	24 hours	7 days	3

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3.7	Mechanical and electrical systems and components	Mechanical and electrical systems and components are functioning properly and maintained in a satisfactory condition	Visual inspection	Monthly	All mechanical and electrical systems and components function properly, meet general performance requirements, and are properly maintained as determined in accordance with manufacturers' recommendations and Good Industry Practice.	Mechanical or electrical systems or components not functioning properly, not meeting general performance requirements, or not properly maintained as determined in accordance with manufacturers' recommendations and Good Industry Practice	24 hours	7 days	3 months	24 hours	7 days	1 month	3

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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3.8	Corrosion protection	Corrosion protection systems are intact and operating in line with design intent including: • Paint systems for steel • Concrete surface protection systems • Sacrificial protection systems such as zinc (metalizing, galvanizing, etc.)	Visual Inspection	Yearly	Less than 1% of total coated surfaces exhibits failure of coating system down to bare metal or instances of repair / removal of overcoat that damages an underlying metallized coating. Less than 1% of zinc coated surfaces exhibit loss of zinc coatings. Corrosion protection element level condition states, in accordance with the AASHTO Manual for Bridge Element Inspection, are one or two.	Instances of failure of coating system down to bare metal greater than 1% of coated surface area or instances of repair / removal of overcoat that damages an underlying metallized coating. Loss of zinc coating greater than 1% of surface area Noncompliance with manufacturer's recommendations for the maintenance and re-application of coatings Corrosion protection level condition states, in accordance with the AASHTO Manual for Bridge Element Inspection, are three or four.	24 hours	1 month	6 months	24 hours	1 month	3 months	3
3.9	Lightning protection	Lightning protection systems are intact and operating in line with design intent.	Inspection and assessment in accordance with the requirements of Underwriters Laboratories, Inc. (UL) 96, NFPA 780,	Monthly	Compliance with applicable standards. Lighting protection system operating as intended.	Noncompliance with applicable standards. Instances of lightning protection system not operating as intended.	24 hours	1 month	6 months	24 hours	1 month	3 months	3

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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
			and Lightning Protection Institute (LPI) 175.										
3.10	Load ratings	All structures maintain the design load capacity	Load rating calculations in accordance with the Manual for Bridge Evaluation and the LA DOTD Bridge Inspection Manual and per the Technical Provisions	As needed and following NBIS Inspections	Required load rating performed in a timely manner and structures do not require load restrictions	Required load ratings not performed in a timely manner or structures with load restrictions for Louisiana legal loads (including legally permitted vehicles)	24 hours	1 month	6 months	24 hours	1 month	3 months	5
3.11	Access points	All hatches and points of access are fully secured and are permitting access to designated personnel	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	1 month	6 months	24 hours	1 month	3 months	3
3.12	Retaining walls and all associated elements (including MSE walls)	Protect and maintain retaining walls and associated elements (including MSE walls)	Visual inspection	Monthly	Protect and maintain walls in accordance with the Contract Documents and Good Industry Practice	Failure to protect and maintain walls in accordance with the Contract Documents or Good Industry Practice	24 hours	1 week	1 month	24 hours	1 week	1 month	3

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4.) Pavement Markings and Delineators													
4.1	Pavement markings (striping, raised markers, etc.)	Pavement markings in compliance with MUTCD and LA DOTD Standards and are: clean and visible; whole and complete; and of the correct color, type, width, length; and in compliance with retroreflectivity requirements	As specified in the MUTCD and LA DOTD Standards measured retroreflectivity using retroreflectometer	Yearly	Performance Requirement achieved	More than 5% loss of area of material at any point or length with spread more than 10% of specified dimensions. Less than 90% of each symbol functioning as intended. More than 5% not meeting minimum retroreflectivity levels per MUTCD and LA DOTD Standards or failure to otherwise achieve Performance Requirement	N/A	30 days	90 days	N/A	30 days	30 days	3
4.2	Object markers and delineators	Markers and delineators are: clean and visible; of the correct color and type; legible and reflective in accordance with MUTCD and LA DOTD Standards; and straight and vertical	Visual inspection	Monthly	Performance Requirement achieved	More than 10% over 100’ section length markers or delineators defective or missing. Damage such that the color may be misconstrued or unknown or failure to otherwise achieve Performance Requirement	N/A	N/A	60 days	N/A	N/A	14 days	1

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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
5.) Guardrails, safety barriers, and impact attenuators													
5.1	Guardrails and safety barriers	All guardrails and safety barriers, including concrete barriers, are free of MFs, and undesirable vegetation, appropriately placed and correctly installed at the correct height and distance from roadway or obstacles and providing intended safety function	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	1 month	24 hours	3 days	1 month	2
5.2	Impact Attenuators	All impact attenuators appropriately placed and correctly installed and providing intended safety function	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	8 hours	7 days	1 month	8 hours	3 days	1 month	5

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6.) Permanent Signs													
6.1	Permanent signs	Signs are clean, correctly located, clearly visible, legible and reflective and meet requirements of MUTCD and kept free from face damage including dirt, dents, wrinkled reflective/non-reflective sheeting, and peeling reflective/non-reflective sheeting	Visual inspection and physical measurements Part 2 of MUTCD	Monthly	Performance Requirement achieved	Any signs: **22)** with face damage rendering the sign illegible, day or night b) containing face damage exceeding 5% of the sign area **22)** that do not meet MUTCD requirements, including legend size, layout, or font d) that otherwise fail to meet the Performance Requirement	24 hours	N/A	2 months	24 hours	N/A	30 days	2
6.2	Permanent Signs	Meet the visibility distances stated in the requirements of Part 2 of MUTCD and are located in accordance with the requirements of the Contract Documents	Visual inspection and physical inspection per Part 2 of MUTCD	Monthly	Performance Requirement achieved	Any signs that do not meet the required sign spacing/visibility distance, are otherwise improperly located; do not meet the required bottom of sign or lateral offset minimum requirements; or otherwise fail to	24 hours	N/A	2 months	24 hours	N/A	30 days	2

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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
						meet the Performance Requirement							
6.3	Permanent signs	Remove obsolete and redundant signs	Visual inspection and physical inspection per Part 2 of MUTCD	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	1 week	24 hours	N/A	30 days	2
6.4	Permanent signs	Sign information is in the correct; location and type is correct	Visual inspection and physical inspection per Part 2 of MUTCD	Monthly	Performance Requirement achieved	Any sign that does not meet MUTCD requirements or otherwise fails to meet the Performance Requirement	24 hours	N/A	4 months	24 hours	N/A	30 days	2
6.5	Permanent Signs	Signs meet minimum retroreflectivity requirements	Visual inspection and measured sign retroreflectivity per Part 2 of MUTCD	Yearly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	1 month	24 hours	N/A	30 days	3
7.) Lighting, ITS, etc.													
7.1	Roadway lighting	Maintain functionality of roadway lighting system	Visual inspection	Monthly	Maintain functionality of at least 90% of all roadway luminaires at all times. Ensure the light levels meet criteria established in the Contract Documents	< 90% of all roadway lighting luminaires functioning in a 1 mile section, or more than one in 10 consecutive lights is not functioning	N/A	1 week	3 months	N/A	1 week	3 months	2
7.2	Roadway lighting	Maintain functionality of roadway lighting system	Visual inspection	Monthly	No more than 2 consecutive roadway luminaires shall be inoperable.	More than 2 consecutive roadway luminaires inoperable	N/A	1 week	3 months	N/A	1 week	3 months	2
7.3	Sign lighting	Maintain functionality of sign lighting system	Visual inspection	Monthly	Maintain functionality of at least 80% of all	<80% of all sign lighting luminaires functioning or more	N/A	N/A	14 days	N/A	N/A	14 days	2

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					sign luminaires at all times. Ensure the light levels meet criteria established in the Contract Documents.	than two in 10 consecutive sign lights are not functioning							
7.4	Roadway lighting electrical components	Maintain functionality of electrical system	Documentation of testing performed and included in the Monthly O&M Report	Monthly	Conduct routine inspections, testing and maintenance of all electrical components, including: control and distribution equipment, lighting control cabinets, and internal equipment including: panel board, lighting contactor, photoelectric control unit, circuit breakers, thermostat, and fan. All roadway lighting control cabinets must have rodent protection. Document the Inspection, testing, and maintenance that has occurred over each monthly period. Documentation	Missed routine inspection, testing, or maintenance or failure to otherwise meet the Performance Requirement	7 days	N/A	30 days	7 days	N/A	30 days	2

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					must include photographs.								
7.5	Underpass lighting	Maintain functionality of underpass lighting system	Visual inspection	Monthly	Maintain functionality of at least 90% of all underpass luminaires at all times. Ensure the light levels meet the criteria established in the Contract Documents	<90% of all underpass luminaires functioning at any individual underpass	N/A	1 week	3 months	N/A	1 week	3 months	2
7.6	Poles and supports (light, ITS, utility, etc.)	All poles and supports are functional, upright, correctly founded, visually acceptable, and structurally sound	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	1 month	24 hours	7 days	1 month	5
7.7	Cameras, traffic control devices, and ITS equipment on poles	All cameras, traffic control devices, and ITS equipment remain fully functional, fully communicating, undamaged, unobstructed, and properly fastened	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	12 hours	24 hours	1 week	12 hours	24 hours	1 week	5
8.) Fences													
8.1	Boundary fences	Integrity and structural condition of fences is maintained	Visual inspection	Monthly	Performance Requirement achieved and does not allow access to the highway	Failure to achieve Performance requirement or allows access to the highway	24 hours	7 days	1 month	24 hours	24 hours	2 weeks	3

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9.) Roadside Management													
9.1	Landscaped areas	Grass is mowed and maintained to an appropriate height	Visual inspection	Monthly	Maintain height of grass and weeds between 5 and 18 inches	Failure to maintain height of grass and weeds between 5 to 18 inches	24 hours	N/A	1 month	24 hours	N/A	2 weeks	3
9.2	Vegetated areas	Vegetation is maintained within appropriate condition	Visual inspection	Monthly	Spot mowing maintains visibility of appurtenances and sight distance	Failure for spot mowing to maintain visibility of appurtenances and sight distance	24 hours	N/A	1 month	24 hours	N/A	2 weeks	3
9.3	Vegetated areas	Vegetation is maintained within appropriate condition	Visual inspection	Monthly	Grass or vegetation does not encroach into or on paved shoulders, lanes, sidewalks, islands, riprap, traffic barrier, or curbs.	Grass or vegetation encroaches into or on paved shoulders, lanes, sidewalks, islands, riprap, traffic barrier, or curbs.	24 hours	N/A	1 month	24 hours	N/A	2 weeks	3
9.4	Landscape elements including trees, shrubs, and other plantings	Maintain and replace landscape elements in accordance with Good Industry Practice and the Contract Documents	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 week	N/A	6 months	1 week	N/A	3 months	2
9.5	Bike and pedestrian facilities	Maintain pathways and adjacent vegetation on any Bike/ped facility within the O&M Limits in accordance with the Contract Documents	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 week	2 weeks	1 month	1 week	2 weeks	1 month	2

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9.6	Sidewalks and Americans with Disabilities Act (ADA) access points	Maintain sidewalks and ADA access points in a manner that provides well-drained and compliant surfaces	Visual inspections and physical measurements	12 months or less	Sidewalks and ADA access points are well-drained, and meet or exceed ADA compliance requirements	Sidewalks or ADA access points are not well-drained, or do not meet ADA compliance requirements	2 hours	2 weeks	1 month	1 hour	2 weeks	1 month	3
10.)	Earthworks, Embankments and Cuttings												
10.1	Slopes	Slopes are maintained in general conformance to the original graded cross-sections and all eroded materials removed and disposed	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	7 days	1 month	24 hours	24 hours	2 weeks	3
10.2	Slopes	Landscaping materials are maintained and slopes are reseeded and re-vegetated for erosion control purposes as appropriate	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	1 month	24 hours	N/A	2 weeks	3

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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
11.) User and Third Party Responsiveness														
11.1	Respond to inquiries and/or complaints	Respond to inquiries and complaints effectively and in a timely manner a.) Contact the party within 2 business days following being notified of or receiving initial inquiry b.) All Work resulting from requests is scheduled within 2 business days of contact/ notification c.) Follow-up contact with the party within 3 business days of initial inquiry/ notification d.) All concerns/requests are resolved within 2 weeks of the initial inquiry/ notification	Visual inspection / report submission	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	2 business days	N/A	N/A	2 business days	N/A	N/A	3
11.2	Inquiry / complaint / comment log	Maintain a log of inquiries, complaints, and Developer responses throughout the Operating Period	Report submission	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	30 days	N/A	N/A	14 days	3
12.) Sweeping and Cleaning														
12.1	Roadway obstructions	Roadway free from obstructions and hazardous debris	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	N/A	2 hours	N/A	N/A	1 hour	5

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
12.2	Debris removal	Clear and remove debris from traffic lanes, hard shoulders, verges and central reservations, including animal carcasses. Keep areas under structures free from debris, stored materials, etc.	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	1 hour	N/A	2 hours	N/A	N/A	1 hour	3
12.3	Sweeping	Keep all channels, hard shoulders, gore areas, ramps, intersections, islands and other roads swept clean	Visual inspection	Monthly	No accumulated buildup of dirt, debris, and litter. On roadways or bridges greater than 24 inches wide or 0.50 inches deep	Failure to achieve Performance Requirement	24 hours	N/A	14 days	24 hours	N/A	24 hours	2
12.4	Sweeping	Remove all sweepings without stockpiling in the right of way and dispose of at approved tip	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	14 days	24 hours	N/A	24 hours	3
12.5	Litter removal	Keep the right of way in a neat condition and remove litter regularly, and dispose of all litter and debris collected at an approved solid waste site	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	14 days	24 hours	N/A	24 hours	3
12.6	Litter removal	Pick up large litter items before mowing operations	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	14 days	24 hours	N/A	24 hours	4

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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12.7	Graffiti	Remove all graffiti and in a manner and using materials that restore the surface to a like appearance similar to adjoining surfaces	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	24 hours	30 days	24 hours	N/A	7 days	2
13.)	Tolling												
13.1	Customer response – response to inquiries	Provide timely and effective response to customer inquiries and complaints.	Non-automated contact with the customer within 2 days following initial customer inquiry.	Monthly	Percentage of responses within specified times in each Performance Section. Demonstrated by O&M Records	Failure to meet target of 100%	2 business days	N/A	N/A	2 business days	N/A	N/A	3
			All work resulting from customer requests is scheduled within 2 days of customer contact.			Failure to meet target of 100%							3
			Follow-up contact with the customer within 3 days of initial inquiry.			Failure to meet target of 100%							3
			All customer concerns/requests requiring escalation to dispute resolution are resolved to LA DOTD's satisfaction within 30 days of the initial inquiry.			Failure to meet target of 100%							3
13.2	Customer complaints	Provide the LA DOTD with weekly reports of customer comments and complaints related to tolling regardless of	Report submission	Weekly	Provide the LA DOTD with weekly reports of customer comments, complaints, and	Failure for the Developer to provide the LA DOTD with weekly reports of customer comments,	N/A	N/A	7 days	N/A	N/A	7 days	2

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		how received, and Developer resolution			Developer resolution	complaints, and Developer resolution							
13.3	Customer response – customer contact line	Telephone line staffed during business hours and 24-hour availability of automated messaging system.	Instances of inaccessibility of staffed line and automated messaging system	Ongoing	Number of operations records showing non availability of the customer contact line in each Performance Section including complaints from public.	Failure to meet target of zero non availability for manned business hours or failure to provide 24-hour availability of messaging system 99.9% of the time	24 hours	N/A	7 days	24 hours	N/A	7 days	2
13.4	Customer satisfaction	Achieve a high level of customer satisfaction through providing good customer service and account management.	Developer shall encourage customers to provide feedback at the various customer touch points. Customers shall be asked to rate their customer service experience as “Unsatisfied”, “Satisfied”, or “Very Satisfied”. Customer survey methods must be reviewed and approved by LA DOTD	Monthly	Count the number of customers rating their customer service experience as “Satisfied” or better divided by the total number of surveys completed.	Failure to meet minimum standards described below: Ramp up Period: 0 to 12 months from Service Commencement. Achieve minimum of 70% Satisfied or better. After Ramp Up: Months 13+ from Service Commencement. Achieve minimum of 90% satisfied or better.	N/A	N/A	30 days	N/A	N/A	30 days	5
13.5	Average speed of answer	Customers shall have access to customer service representatives by phone. Developer shall strive to reduce the time customers are on-hold after	Sum of the number of seconds each customer during a week actually waits after requesting to speak to a live	Monthly	O&M Monthly Report	Failure to meet minimum standards described below: 80% of calls get answered within 60 seconds	N/A	N/A	30 days	N/A	N/A	30 days	2

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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		requesting to speak to a representative in-person.	customer service representative, divided by total number of calls requesting a live customer service representative during that week.										
13.6	Tolling account website availability	The tolling account website must be operational and available to users.	Scheduled maintenance shall only occur between the hours of 2AM and 5AM weekdays or between the hours of 12AM and 5AM weekends, and not occur on successive days. Measurement of uptime percentage is over the total minutes in the calendar month and excludes scheduled maintenance.	Monthly	O&M Monthly Report	Failure to meet uptime of greater than 99.9%	24 hours	N/A	30 days	24 hours	N/A	30 days	2

13.7	Errors in account management	Fees, penalties, and other charges assessed to customers or posted to accounts shall be accurate. Developer shall accurately post customer payments and other credits, to accounts. An Error in Account Management is any inappropriate or inaccurate posting of a fee, penalty, payment, or other debit or credit of a customer or violator account by a customer service representative or the customer service account management system. This excludes toll transactions which are governed by separate KPIs from lane systems. Developer shall provide reporting for the number of toll transactions, fees, penalties, and payments posted inaccurately to customer accounts. Payments, credits, and adjustments to pre-paid toll balances must be accurate.	Errors shall be counted monthly from two sources, removing duplicates: -Number of account management complaints regarding errors in account management reported to LADOTD. -Number of transaction reversals, toll rate adjustments due to system or developer error as reported in daily, and other corrections reported in monthly auditable reports.	Monthly	O&M Monthly Report	Failure to meet minimum standards described below: Errors < $100: No more than 1 error per 1000 transactions Errors >= $100: No more than 1 error per 1,000,000 transactions	N/A	N/A	30 days	N/A	N/A	30 days	3

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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13.8	Transponder order processing	Developer shall process and mail transponder orders in a timely fashion	Instances exceeding the expected processing time window starting with the time the request was received	Monthly	O&M Monthly Report	>5 Business Days	5 business days	N/A	N/A	5 business days	N/A	N/A	1
13.9	Received mail processing	Developer shall process mailed correspondence in a timely fashion	Instances exceeding the expected processing time window starting with the time the mail was received (time stamped)	Monthly	O&M Monthly Report	>5 Business Days	5 business days	N/A	N/A	5 business days	N/A	N/A	1
13.10	Statement and invoice processing and mailing	Developer shall process account statements and invoices in a timely fashion	Instances exceeding the expected processing and posting/email/mail time window starting with end of the statement period	Monthly	O&M Monthly Report	>5 Business Days	5 business days	NA	NA	5 business days	NA	NA	1
13.11	Toll Rate Sign	Toll Rate Sign must be operating and displaying the correct information 99.95% of the time.	Developer report submission Measurement method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	< 99.95%	8 hours	N/A	12 hours	8 hours	N/A	12 hours	5
13.12	Vehicle detection system	Vehicle detection system must be operating and collecting accurate traffic data 99.5% of the time	Developer report submission Measurement method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	< 99.95%	24 hours	N/A	7 days	24 hours	N/A	7 days	1

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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13.13	Vehicle detection system data accuracy	≥ 99.9% of all vehicles are accurately classified and counted and vehicle speeds are accurately measured with speed error tolerance of no more than +/-10%	Developer report submission Measurement method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	< 99.9%	24 hours	N/A	7 days	12 hours	N/A	7 days	1
13.14	CCTV system	The CCTV system must be operating (where PTZ is present, operating includes that the PTZ functions are working) and transmitting video to all required agencies/applications > 99% of time	Developer report submission Measurement method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	< 99%	24 hours	N/A	7 days	12 hours	N/A	7 days	1
13.15	RTCS vehicle classification accuracy	≥ 98% of all vehicles passing through the toll point(s) or Toll Zone(s) shall be classified correctly	Developer statistical analysis of toll transactions shall be reviewed to verify classification accuracy. Analysis method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	< 98%	24 hours	N/A	7 days	24 hours	N/A	7 days	2
13.16	Image association	99.95% of images shall be associated with the correct toll transaction	A statistically significant sampling of Toll Transactions shall be reviewed to verify images are correctly	Monthly	O&M Monthly Report	< 99.95%	24 hours	N/A	7 days	24 hours	N/A	7 days	1

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
			associated with toll transactions upon User concern. Test scripts to test this function shall be developed by the Developer and as Approved by LA DOTD										
13.17	AVI read accuracy	Correctly read and write to 99.9% of first read or priority Transponder, measured in each lane, for all accepted Transponder protocols, at any vehicular speed up to 100 mph (write functions are only needed for time-division multiplexing feedback Transponders)	Developer statistical analysis submission of AVI Toll Transactions shall be conducted across multiple toll lanes to verify read/write accuracy. Transponder read hierarchy to be defined in business rules approved by LA DOTD. Test scripts to test this function shall be developed by the Developer and as Accepted by LA DOTD	Monthly	Factory acceptance testing / testing / certification / recertification reports and LA DOTD observations	Correctly read and write < 99.9% of all Transponders, measured in each lane, for all accepted Transponder protocols, at any vehicular speed up to 100 mph	24 hours	N/A	7 days	24 hours	N/A	7 days	1
13.18 (See Note 3 following this table)	Image-based transactions	99.0% of all Image-Based Transactions shall include readable images and complete and correct information in the lane transaction message	Developer report submission Analysis method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	< 99.0% of Toll Transactions have readable images or correct information	24 hours	N/A	7 days	24 hours	N/A	7 days	2

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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13.19	License plate attributes	99.5% of all readable license plate attributes for Imaged-based transactions (characters, state, plate type, etc.) be correctly captured	Developer report submission Analysis method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	< 99.5%	24 hours	N/A	7 days	24 hours	N/A	7 days	1

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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13.20	Toll transaction processing	All Toll Transactions completed and Home Toll Transactions posted to customer accounts and Away Transactions transmitted to the IOPA within 96 hours	Developer report submission Analysis method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	<100% of all Toll Transactions processing completed within 96 hours	24 hours	N/A	7 days	24 hours	N/A	7 days	1
13.21	Interoperable toll transaction processing	All Home Transactions received from the IOPA to be acknowledged and posted to customer accounts within 12 hours of receipt	Developer report submission Analysis method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	<100% of all Home Interoperable Toll Transactions processing completed within 12 hours	24 hours	N/A	7 days	24 hours	N/A	7 days	1
13.22	Interoperable TVL/LVL processing	All Transponder or License Plate Validation Lists (TVL/LVL) from Away Accounts received from the IOPA shall be processed and transmitted to the RTCS within 15 minutes of receipt All TVL/LVL from Home Accounts shall be transmitted to the IOPA at least daily.	Developer report submission Analysis method to be Approved by LA DOTD during the DB Period	Monthly	O&M Monthly Report	<100% of all status files processed within 15 minutes	N/A	N/A	8 hours	N/A	N/A	8 hours	1
13.23	Toll transaction accuracy	Toll Transactions (including assigned toll rates and discounts) shall be 100% accurate 99.5% of the time.	Developer report submission Analysis method to be Approved by LA DOTD	Monthly	O&M Monthly Report	<99.5% of Toll Transactions are 100% accurate.	24 hours	N/A	7 days	24 hours	N/A	7 days	4

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
			during the DB Period										
13.24	Toll gantries	Toll Gantries are structurally sound and free of: • MFs in surface protection systems • Loose nuts and bolts	Visual inspection	Monthly	Number with MFs in surface protection system. Number with loose nuts and bolts.	Failure to meet target of zero MFs in surface protection system and zero loose nuts and bolts	24 hours	28 days	6 months	24 hours	28 days	6 months	4
14.)	Miscellaneous												
14.1	General	Provide accurate, complete, and timely reporting of the Noncompliance Events and Noncompliance Points assessed and accrued in accordance with the Contract Documents.	Report	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	3 days	N/A	N/A	24 hours	4
14.2	Submittals	Provide Submittals not otherwise expressly specified in this table in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	7 days	N/A	N/A	24 hours	3
14.3	Submittals	Provide all required schedules during the Operating Period in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	3
14.4	Submittals	Provide or update any Developer prepared management Plans	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	7 days	N/A	N/A	24 hours	3

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		or Sub-Plans as prescribed and in accordance with the Contract Documents											
14.5	Submittals	Provide or update the Maintenance Management Plan in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	7 days	N/A	N/A	24 hours	3
14.6	Meetings	Schedule and attend all required meetings in the time prescribed and in accordance with the Contract Documents	Meeting attendance record	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	2
14.7 (see Note 1 following this table)	General	Comply with all Developer prepared management Plans or Sub-Plans in accordance with the Contract Documents	Visual inspection / as specified in the Plans or Sub-Plans	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	24 hours	7 days	24 hours	24 hours	7 days	4
14.8 (see Note 1 following this table)	General	Comply with the requirements of the Maintenance Management Plan	Visual inspection / as specified in the Maintenance Management Plan	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	24 hours	7 days	24 hours	24 hours	7 days	4
14.9	General	Continually inspect all areas within the O&M Limits to identify any potential safety hazards and act in accordance with Developer's Safety Plan with regard to responding to safety hazard issues during the O&M Period	Visual inspection / as specified in the Developer's Safety Plan	Monthly	Act in accordance with Developer's Safety Plan with regard to responding to safety hazard issues during the Operating Period	The Developer fails to act in accordance with Developer's Safety Plan with regard to responding to safety hazard issues during the Operating Period	N/A	N/A	15 days	N/A	N/A	15 days	5

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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14.10 (See note 1 following this table)	General	Perform maintenance activities in a manner that does not represent a hazard to workers or the general public and in accordance with the Safety Plan and/or the O&M Safety Plan	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	5 minutes	1 hour	24 hours	1 minute	1 hour	24 hours	5
14.11 (See note 1 following this table)	General	Remediate in accordance with Good Industry Practice and any other terms of the Contract Documents any condition within the maintenance limits that represents a material hazard to workers or the general public	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	5 minutes	24 hours	7 days	5 minutes	24 hours	7 days	5
14.12	General	Provide notice to LA DOTD of damage to any Element of the Work including the causation of and contributing factors to the damage	Visual inspection / issuance of notice to LA DOTD	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	2
14.13	General	Meet all required work zone safety, management, MOT, and detour routes during maintenance operations in accordance with the Contract Documents	Visual inspection / as specified in the Contract Documents	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	15 days	N/A	N/A	24 hours	2
14.14	Inspections	All inspectors to have proper certification in	Report submission	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	14 days	N/A	N/A	30 days	4

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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		accordance with applicable standards and specifications and in accordance with the Contract Documents											
14.15	Inspections	All MFs must be properly identified in the Inspection reports, Operations and Maintenance Plan, Annual Operations and Maintenance Report, and/or Work undertaken in accordance with the Contract Documents	Visual inspection / report submission	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	3 days	N/A	N/A	15 days	4
14.16	Inspections	Identified MFs to be repaired in accordance with the Operations and Maintenance Plan and the Contract Documents	Visual inspection / report submission	Yearly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	14 days	N/A	N/A	30 days	3
14.17	Work hours	Comply with work restrictions in place during regular time	Visual inspection / as specified in the Contract Documents and in accordance with Permits issued	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	4
14.18	Work hours	Comply with work restrictions in place during holidays	Visual inspection / as specified in the Contract Documents and in accordance with Permits issued	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	4
14.19	Access	Maintain access for businesses and pedestrians in	Visual inspection	Ongoing	Performance Requirement achieved	Failure to achieved Performance Requirement	15 minutes	N/A	24 hours	15 minutes	N/A	24 hours	4

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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		accordance with the Contract Documents											
14.20	Public information	Use appropriate methods to issue factually correct information to the public in accordance with the Public Information and Communication Plan and Contract Documents	Visual inspection / publicly disseminated information	Ongoing	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	15 days	1 hour	N/A	30 days	4
14.21	Permits	Obtain and comply with all required Permits; do not perform Work without Permits being active or approved	Visual inspection / as specified by Permits	When applicable	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	Immediately	N/A	N/A	24 hours	5
14.22	USDOT and FMSCA Regulations	Developer to follow all USDOT and Federal Motor Carrier Safety Administration (FMSCA) CDL regulations	Visual inspection / report submission	Ongoing / as reported	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	Immediately	N/A	N/A	24 hours	5
14.23	Utilities	Follow all requirements for all subsurface utilities maintained by Developer in accordance with Louisiana OneCall	Visual inspection / as established by Louisiana OneCall	Monthly	Performance Requirement achieved	Less than 100% of Developer utilities marked when required or failure to achieve Performance Requirement	N/A	N/A	48 Hours	N/A	N/A	24 hours	2
14.24	Utilities	Maintain access to all external Stakeholder utilities at all times	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	24 hours	N/A	2 weeks	24 hours	N/A	2 weeks	3
14.25	Payments	Issue payments to subcontractors in the time prescribed and in accordance with	Visual inspection	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	48 hours	N/A	N/A	24 hours	3

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
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										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		the Contract Documents											
14.26	Payments	Submit specified subcontractor payment reports in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	3
14.27	Payments	Submit accurate payrolls to LA DOTD in the time prescribed and in accordance with the Contract Documents	Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	3 days	N/A	N/A	24 hours	5
14.28	Payments	Submit missing or corrected payrolls to LA DOTD within 10 days of notice by LA DOTD	Monthly report	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	24 hours	N/A	N/A	24 hours	2
14.29	As-Built Plans	Developer to provide As-Built Plans and checklists in the time prescribed and in accordance with the Contract Documents	Visual inspection / Submittal	Monthly	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	15 days	N/A	N/A	15 days	2
14.30	Audits and reviews performed by LA DOTD or other Governmental Entity	Provide information required to complete audit or review and comply with audit findings or address review comments in a timely manner	Audit, review, Contract Documents, third party facility MOU's or a combination thereof	When performed	Performance Requirement achieved	Failure to achieve Performance Requirement	N/A	N/A	10 days	N/A	N/A	10 days	4
14.31	Environmental wells	Coordinate with and provide access to LA DOTD for inspection and maintenance of environmental wells in accordance with	Technical Provisions	Quarterly	Performance Requirement achieved	Failure to coordinate or provide access to environmental wells in accordance with the Technical Provisions	N/A	N/A	5 days	N/A	N/A	5 days	3

EXHIBIT 22-2 O&M PERFORMANCE REQUIREMENTS FOR OPERATING PERIOD EXHIBIT													
ID #	ELEMENT	PERFORMANCE REQUIREMENT	INSPECTION AND MEASUREMENT METHOD	INSPECTION FREQUENCY	PERFORMANCE MEASUREMENT RECORD	DESCRIPTION OF NONCOMPLIANCE EVENT	MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	RECURRENCE INTERVALS			APPLICABLE NON-COMPLIANCE POINTS
										MITIGATION	TEMPORARY REPAIR	PERMANENT REPAIR	
		the Technical Provisions											

Notes to accompany Exhibit 22-2:

1. Where noted in Category 14 – General, the mitigation timeframe is the time allowed to initiate corrective action to the immediate issue which caused the Noncompliance Event. The temporary repair timeframe is provided to review and revise the implementation of the Project Management Plan requirements and take appropriate action towards permanent remedy by mutual agreement. The permanent repair shall be the full remedy for the initial Noncompliance Event.
2. Please see Exhibit 22-3 for details regarding assets that are the responsibility of the Developer to maintain
3. ID #13.18 excludes ineligible vehicles which are those for which an image is obtained that due only to one or more of the following conditions cannot be reliably read by the human eye:
    a. The vehicle either has no license plate or it is not mounted in the legally required position
    b. The license plate is covered by dirt or snow rendering it unreadable
    c. The license plate is damaged, bent or broken rendering it unreadable
    d. The license plate is blocked by an object carried by the vehicle (such as a plate frame, overhanging cargo or a trailer towing ball)
    e. The license plate is blocked by something in the lane such as a person or another vehicle.
    f. Extreme weather conditions are such that the license plate is rendered unreadable.
4. Roadway smoothness as required in ID #1.2 and 1.3 shall be measured for the entire continuous roadway surface within the O&M Limits, but the data from 50 feet prior to and 50 feet after any bridge approach shall be excluded from the Performance Requirement.
5. Exception to Accrual of Noncompliance Points is listed in Section 1.05 (h) of Exhibit O.

Exhibit 22-3 O&M Responsibility Matrix

Maintenance Activity	DB Period		Operating Period		Comments
	Developer	LA DOTD/ AHJ	Developer	LA DOTD / AHJ	
Traffic Assets					
Traffic Signals at Ramp Termini		X		X	
Traffic Signal at Sampson St. and Sulphur Ave.		X		X	
Overhead Sign Structures	X		X		
Ground Mount Signs Supports	X		X		
Sign Panels	X		X		
Required permanent advanced signing outside DB Limits (inclusive of all supports and ancillary components)	X			X	
Roadway Lighting	X		X		
Electric equipment (devices, poles, cabinets, conduit, cables, manholes, power feeds, etc.)	X		X		Excludes ITS associated equipment
Electrical Supply (Including Roadside Systems)	X		X		
Data Communications	X		X		
Intelligent Transportation Systems (ITS)					
Existing LA DOTD ITS Equipment (devices, poles, cabinets, conduit, cables, manholes, power feeds, Dynamic Message Signs etc.) regardless of location – See note 1 & 4 following this table		X		X	
Developer Project ITS equipment – See note 5 following this table	X		X		
Developer installed LA DOTD ITS equipment	X			X	
Tolling					
All equipment (devices, poles, cabinets, cables, manholes, power feeds, signs etc.) regardless of location	X		X		
Tolling Back Office System	X		X		
Pavement Marking Striping					
Mainline Striping	X		X		

Maintenance Activity	DB Period		Operating Period		Comments
	Developer	LA DOTD/ AHJ	Developer	LA DOTD / AHJ	
Ramp Striping	X		X		
Striping for Non-Interstate Roads (Outside O&M Limits)	X			X	
New & Reconstructed Pavement					
Pavement, ramps, shoulders	X		X		
Non-Interstate Roads outside O&M Limits	X			X	
Roadway Condition					
Ride Surface for Lanes and Ramps	X				
Pavement	X				
Major Renewal Decking on all Structures			X		
Major Renewals of Pavement Lanes and Associated Ramps			X		
Storm Water Management Facilities					
Aboveground/Surface	X		X		
Existing Pump Stations		X		X	
Pump Stations constructed by Developer	X		X		
Offsite Facilities (any facility not within the ROW)					
All offsite facilities, including any associated Stormwater conveyance systems		X		X	
Storm Water Conveyance Systems					
Inlets, Structures, Ditches and Pipes accessible	X		X		
Environmental					
Inspection and maintenance of environmental wells		X		X	
Wetland & Stream Mitigation					
Standard warranty work following construction (i.e. plant survivability/replacement)	X		X		

Maintenance Activity	DB Period		Operating Period		Comments
	Developer	LA DOTD/ AHJ	Developer	LA DOTD / AHJ	
Long-term maintenance (following warranty or upon agency acceptance of site)		X		X	
Structures					
Maintenance of Existing Bridge		X	X		Developer responsibility from the time all traffic is transferred off the Existing Bridge until Final Acceptance
Maintenance of the New Bridge	X		X		
Maintenance of other structures	X		X		
Sampson St. Structure and Ramps	X		X		
Ryan St. Structure	X			X	
Bilbo St. Structure	X			X	
I-210 Structure (WB I-210 to WB I-10)	X			X	
NBIS Inspections		X		X	
Renewal Work for structures including New Bridge			X		
Fences, Walls, and Sound Abatement	X		X		
MSE/Retaining Walls	X		X		
Earthwork and Embankments	X		X		
Guardrail and Safety Barriers	X		X		
Bayou Verdine Box Culvert	X		X		
Miscellaneous					
Incident management		X		X	
Traffic Enforcement		X		X	
MAP (see note 2 following this table)		X		X	
Graffiti Removal	X		X		
Facilities and Maintenance Yards	X		X		

Maintenance Activity	DB Period		Operating Period		Comments
	Developer	LA DOTD/ AHJ	Developer	LA DOTD / AHJ	
Landscaping	X		X		
Routine Litter and Debris Disposal, Sweeping	X		X		
Debris removal, including after Incidents	X		X		
Reoccurring electrical consumption charges, excluding LA DOTD ITS	X		X		
Severe Weather/Hurricane Response upon Emergency Declaration					
Initial Push		X		X	
Debris Removal (Emergency Declared Debris)		X		X	
Winter Maintenance (see note 3 following this table)		X		X	

Notes to accompany Exhibit 22-3:

1. If Developer moves/impacts/replaces existing LA DOTD ITS equipment within the DB Limits, Developer will maintain such equipment until such time it is handed over to LA DOTD.
2. LA DOTD operates MAP, Developer may elect to supplement these services if they so choose.
3. LA DOTD provides Winter Maintenance. The Developer has no obligations for Winter Maintenance within the DB Limits or O&M Limits. LA DOTD Winter Maintenance procedures are detailed in the Reference Documents.
4. For ITS equipment impacted by the Developer outside the DB Limits, LA DOTD will retain maintenance responsibilities once equipment is reconnected and operational.
5. Developer Project ITS equipment would be any additional equipment installed by the Developer beyond the existing LA DOTD ITS equipment.
6. The LA DOTD is responsible for all DB Period O&M Work related to the Existing Bridge in accordance with Section 22.9.

ARTICLE 23.

HANDBACK

Section 23.1 General Requirements

The Developer shall turn the Project over to the LA DOTD at the end of the Term in accordance with the requirements of the Contract Documents. The Developer shall identify areas that may need major or minor Renewal Work to meet the Handback requirements and include these items in the Handback Work Plan. The Developer shall identify these items of Work and properly plan for this Work to be accomplished.

Section 23.2 Handback Work Plan

The Developer shall prepare a Handback Work Plan that contains the methodologies and activities that will be undertaken or employed to ensure that the Handback requirements are achieved at the end of the Term. The Developer shall include a Residual Life Methodology in the Handback Work Plan for Approval. The Developer shall submit the preliminary Handback Work Plan six months prior to Partial Acceptance for Review and Comment and then annually thereafter. The Developer shall submit a final Handback Work Plan for Approval at least 60 months before the anticipated expiration of the Term or earlier termination of the Term. The Handback Work Plan shall set out the proposed processes for:

(a) Assessment of the condition, performance, and Residual Life of Elements;

(b) Renewal Work through maintenance, repair, reconstruction, rehabilitation, restoration, rehabilitation, or replacement of Elements such that the Elements comply with the criteria that measure the condition, performance, and specified life of the respective Elements remaining at the end of the Term;

(c) Plan for the transition of O&M responsibilities to the LA DOTD (including ITS and all other systems, technology, buildings, and infrastructure related to the O&M of the Elements) and acceptance of the Elements and O&M responsibilities upon satisfaction of the acceptance criteria; and

(d) LA DOTD staff training on all O&M manuals, systems, and procedures for the continued O&M by the LA DOTD after the end of the Term.

The Developer shall coordinate all aspects of the development and execution of the Handback Work Plan with the LA DOTD, including conducting maintenance, independent or joint inspections of the Elements, and performing the acceptance tests that measure the condition, performance, and Residual Life of the respective Elements remaining at the end of the Term.

The Handback Work Plan shall include the scope, schedule, detailed tests and inspection procedures, required processes and evaluations, acceptance criteria, and acceptance measures to be used to verify and demonstrate to the LA DOTD that all facilities, equipment, and systems function as specified; comply with applicable codes and standards set forth in the

Contract Documents; and meet Residual Life requirements specified in these Technical Provisions.

This includes test verification and documentation of material grades and quality as specified in Exhibit 23-1, Residual Life.

The Handback Work Plan shall include all test and inspection procedures including industry or other information used to justify and support the testing, inspection, and asset evaluation process, with any updates to standards that occurred during the Term.

The list of Elements to be handed back, developed for the Handback Work Plan, shall be used to determine which inspections and tests are required. Inspections and testing are to be performed with appropriate coverage such that the results are representative of the Relevant Infrastructure. The Handback Work Plan shall include an Inspection and Testing Schedule.

The Handback Work Plan shall include the methods and tests that will be used during condition and performance assessments, the acceptance criteria, acceptance measures or limits that must be satisfied, and the conditions and data that will be used to calculate Residual Life of all Elements included in the Relevant Infrastructure.

23.2.1 Handback Work Plan Approach

The Handback Work Plan shall detail the approach to performing O&M Work, repair, reconstruction, rehabilitation, overhaul, and replacement of the Elements so that they meet operational, performance, and Residual Life requirements in the Handback Work Plan. Develop the Handback Work Plan based on:

(a) Assessment of the performance and Residual Life of Relevant Infrastructure; and

(b) Assumptions for operating and maintaining the assets in accordance with the Contract Documents for the remainder of the Term to include:

(i) a proposed schedule for implementation of O&M, repair, reconstruction, Renewal, overhaul, or replacement of Relevant Infrastructure Elements;

(ii) details of the cost of executing Handback Work; and

(iii) any areas that are under remedial Work.

The Developer shall retain all remediation responsibility (and liability) until such time that the Developer submits to the LA DOTD a full description of remedial Work and results of such Work and receives from the LA DOTD acceptable documentation indicating that the Developer has complied with all directives and fulfilled and completed its remediation obligations.

23.2.2 Execution of Handback Work Plan

After receiving Approval of the Handback Work Plan, the Developer shall execute the Handback Work in accordance with the Handback Work Plan and the requirements of the Contract Documents. All references to Work in other portions of the Contract Documents shall also apply to the Handback Work.

The Developer shall:

(a) Perform all inspections and Work necessary to meet or exceed the Residual Life requirements by the time of Handback of the Relevant Infrastructure to the LA DOTD;

(b) Perform all Handback Condition Inspections and prepare and submit Handback Condition Reports to facilitate the calculation of Handback Work Costs; and

(c) At the point of Handback, certify that all Relevant Infrastructure complies with the Residual Life requirements defined in the Contract Documents.

Section 23.3 Project Handback Conditions Reports

Sixty-one (61) months prior to the end of the scheduled expiration of the Term, the Developer shall, conduct jointly with the LA DOTD inspections of all Relevant Infrastructure that will be handed back to the LA DOTD at the end of the Term.

The Developer shall produce and deliver to the LA DOTD Project Handback Condition Reports, at intervals detailed below, that summarizes the inspections and the Handback Work requirements in accordance with the Handback Work Plan. The Developer shall update and amend the Handback Work Plan to include Work identified in the Project Handback Condition Reports that has not been previously identified.

The Developer shall provide the LA DOTD the opportunity to witness any of the inspections or tests. Provide a minimum of 14 days' notice to the LA DOTD prior to the performance of any such inspections or tests. The Developer shall deliver to the LA DOTD, within 30 days after it is created, the output data arising from any testing, any interpretation, and recommendations for remedial measures thereof made by the testers as part of the Handback Condition Report.

The Developer shall provide Preliminary, Prefinal, and Final Project Handback Condition Reports as described in the following sections for Approval.

23.3.1 Preliminary Project Handback Condition Report

Not less than 61 months before the end of the Term, the Developer shall perform a Preliminary Project Handback Condition Inspection for the Relevant Infrastructure.

Within 30 days following performance of this inspection, the Developer shall submit a Preliminary Project Handback Condition Report that presents the findings of the inspection, including Residual Life test results, the report of the independent testing organization(s), the Developer's Residual Life calculations, the Developer's calculation of Residual Life at Handback for all Elements, and the calculation of the Handback Work Cost.

23.3.2 Prefinal Project Handback Conditions Report

The Developer shall perform jointly with the LA DOTD a Prefinal Project Handback Condition Inspection of Relevant Infrastructure, and produce and submit an updated Handback Condition Report, entitled Prefinal Project Handback Condition Report, on the first anniversary of the date of the Preliminary Project Handback Condition Report.

The Developer shall submit to the LA DOTD an amount equal to the Handback Work Costs in accordance with Section 19.03 (a) of the Agreement.

23.3.3 Final Project Handback Condition Report

The Developer shall perform a Final Project Handback Condition Inspection of Relevant Infrastructure, whether or not the Developer has undertaken Renewal Work for a particular Element in the period since the Preliminary and Prefinal Condition Inspection.

Within 60 days following the end of the Term, the LA DOTD, Governmental Entities, and the Developer shall perform a joint inspection of all Relevant Infrastructure. The Developer shall submit a Final Project Handback Condition Report within 15 days following the inspection for Approval that summarizes the findings of the inspection, including Residual Life test results, the report of the independent testing organization(s), the Developer's Residual Life calculations, and the Developer's calculation of Residual Life at Handback for all Elements. The Final Project Handback Condition Report shall include calculations and condition distress surveys that address both pavement functional and structural requirements. The Final Project Handback Condition Report shall also document any Handback Work remaining to be performed and its associated Handback Work Costs.

Section 23.4 Residual Life Requirements

The Residual Life for individual Elements that are designed and constructed by the Developer is described in the following sections and as shown in Exhibit 23-1 based on the 50-year Operating Period. The Developer shall prepare and submit, subject to Approval by the LA DOTD, a Residual Life Methodology in conjunction with the Handback Work Plan.

The Residual Life Methodology requirements identified in these Technical Provisions are minimum requirements. The Developer shall include the evaluation and calculation criteria to be adopted for the calculation of the Residual Life at Handback of all Relevant Infrastructure. The Developer shall include the proposed scope of any Residual Life testing, together with a list of all independent Residual Life testing organizations proposed. The Developer shall submit the names of the organizations for Approval, along with third party quality certifications, and certifications that the organizations are financially independent of the Developer and not an Affiliate.

An NBIS condition rating of 7 is an equivalent tradeoff for the Residual Life of Bayou Verdine stipulated in Exhibit 23-1.

Approval of the Residual Life Methodology, including the scope and schedule of inspections, is required before commencement of Handback Condition Inspections.

23.4.1 Design Life

Where a Design Life as specified in these Technical Provisions exceeds the Term, the Residual Life at Handback shall be calculated as the Design Life minus the years of the Term. In no case shall the Residual Life be less than 3 years at the end of the Term unless specified otherwise in the Contract Documents.

Where the Design Life of an Element, as specified in these Technical Provisions, has been extended through planned or unplanned Renewal Work, the Residual Life shall be calculated as the Design Life minus the years remaining in the Term once the Renewal Work has been completed. In no case shall the Residual Life be less than 3 years at the end of the Term unless specified otherwise in the Contract Documents.

23.4.2 Residual Life

The Residual Life created at the time of an Element's last reconstruction, rehabilitation, restoration, renewal, or replacement before the end of the Term shall be equal to or greater than the period set forth in Exhibit 23-1. The Handback Condition Report shall estimate the cost of the next Renewal Work (after the end of the Term) on the assumption that such Renewal Work will be performed to create a new Useful Life of the same duration.

23.4.2.1 Residual Life of Pavement

The Developer shall use data and analysis of pavement to determine the Work that needs to occur to meet the Residual Life values as shown in Exhibit 23-1 and requirements below.

The pavement surface, including lanes and shoulders, shall be free of any evidence of functional or structural pavement distresses. All cracks and joints shall be sealed with a sealant acceptable to LA DOTD. The pavement surface shall be free and clear of dirt, sand, and other debris.

23.4.2.2 Pavement Structural Requirements

The structural capacity of all travel lanes shall be such that no rehabilitation will be required for 10 years as of the date LA DOTD assumes responsibility for the roadway. The 10-year traffic loading will be determined based on traffic estimates at the time. In no instance, shall it be less than 10 million equivalent single axle loads for any lane of the mainline interstate system and ramps.

Pavement strength testing to determine the structural capacity and the rehabilitation needed for the requirement above will be completed by the Developer and according to LA DOTD pavement design policy and Approved by LA DOTD. The Developer shall provide all traffic accommodation to allow pavement strength testing or other testing (either destructive or non-destructive), as required.

Section 23.5 Submittals

See Article 24 for list of submittals.

Exhibit 23-1 Residual Life

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Traffic	Traffic signals	25	10	Performance Testing and Inspection	Must meet O&M Performance Requirements
Traffic	Overhead sign structures	30	10	Inspection	Must meet O&M Performance Requirements
Traffic	Ground mount sign supports	10	10	Inspection	Must meet O&M Performance Requirements
Traffic	Sign panels	20	10	Inspection	Must meet O&M Performance Requirements
Traffic	Roadway lighting (luminaires, lamps, emergency lighting, photometers, light poles, mountings, high-mast poles, high-mast lowering device	30	10	Performance Testing and Inspection	Must meet O&M Performance Requirements
Traffic	Electric supply (including roadside systems)	25	10	Performance Testing and Inspection	Must meet O&M Performance Requirements
Traffic	Data communications	25	10	Performance Testing and Inspection	Must meet O&M Performance Requirements

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Traffic	Dynamic Message Signs (DMS)	15	5	Performance Testing and Inspection	Must meet O&M Performance Requirements
Traffic	Closed-circuit television systems	15	15	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, equipment operating history
Traffic	Highway advisory radio systems	3	3	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, equipment operating history
Traffic	Two-way radio systems for Emergency personnel	3	3	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, equipment operating history
Traffic	ITS	15	10	Performance Testing and Inspection	LA DOTD TEM,[1] MUTCD, manufacturer's recommended life, equipment maintenance records, equipment operating history

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Traffic	Pavement marking/striping	5	5	Performance Testing and Inspection	Must meet O&M Performance Requirements
Traffic	Guardrails and safety barriers	Concrete barrier: 40 Traffic barrier W-beam: 20	Concrete barrier: 30 Traffic barrier W-beam: 10	Inspection	Must meet O&M Performance Requirements
Tolling	ETCS	10	0	Review and test system functionalities, including roadside toll collection equipment, and Toll Transactions transferred to the LA DOTD back-office system.	Remove ETCS at end of Term
Pavement	New pavement/reconstruction at Handback	N/A If they meet the annual condition	25	Inspection	Must meet O&M Performance Requirements

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Pavement	Pavement not replaced at Handback	N/A If they meet the annual condition	15	Inspection	Must meet O&M Performance Requirements
Pavement	Rehabilitated pavement between Sta. 2587+00 to Sta. 2594+40	N/A If they meet the annual condition	15	Inspection	Must meet O&M Performance Requirements
Storm water management facilities	Aboveground/surface facilities	50	25	Performance Testing and Inspection	Testing analysis and Inspection Report
Storm water management facilities	Underground structural facilities, such as vaults	100	50	Performance Testing and Inspection	Testing analysis and Inspection Report
Storm water management facilities	Facilities having mechanical infrastructure (pumps)	50	25	Performance Testing and Inspection	Testing analysis and Inspection Report

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Storm water management facilities	Dams	50	25	Performance Testing and Inspection	Testing analysis and Inspection Report
Storm water management	Storm drains	50	25	Performance Testing and Inspection	Testing analysis and Inspection Report
Storm water management	Storm drains under roadways	100	25	Performance Testing and Inspection	Testing analysis and Inspection Report
Storm water management	Pipes, manholes, inlets, etc.	50	25	Performance Testing and Inspection	Testing analysis and Inspection Report
Storm water management	Pipes, manholes, inlets, etc. under roadways	100	50	Performance Testing and Inspection	Testing analysis and Inspection Report
Structures	Bridges, retaining walls, other walls/fences, and culverts	75	25	Performance Testing and Inspection	Testing analysis and Inspection Report

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Structures	Bayou Verdine	Rehabilitated	10	Performance Testing and Inspection	Testing analysis and Inspection Report
Structures	New Bridge	100	50	Performance Testing and Inspection	Testing analysis and Inspection Report
Structures	Deck joints, bearings, and protective coatings	25	10	Performance Testing and Inspection	Testing analysis and Inspection Report
Structures	Supports for signs, ITS equipment, cameras, signals, tolling gantries, high-mast lighting, and low-level lighting	30	10	Performance Testing and Inspection	Testing analysis and Inspection Report
Buildings	Buildings for O&M activities	50	10	Performance Testing and Inspection	Testing and Inspection reports
Additional Non-Roadway Systems (If Necessary)					
Mechanical systems	Ventilation fans, ancillary sensory and instrumentation	20	10	Perform Airflow Induced Vibration Testing; Visual Inspection	Design airflow requirements, manufacturer's recommended life, average time between failures, equipment maintenance records

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Mechanical systems	HVAC system – Commercial split system or packaged units	15	10	Performance Testing and Inspection	American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Service Life Estimate, equipment maintenance records, equipment operating history
Mechanical systems	HVAC system – packaged chiller and chilled water coils	20	10	Performance Testing and Inspection	ASHRAE Service Life Estimate, equipment maintenance records, equipment operating history
Mechanical systems	HVAC system – boiler and heating coils	24 (boiler) 20 (coils)	10	Performance Testing and Inspection	ASHRAE Service Life Estimate, equipment maintenance records, equipment operating history

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Mechanical systems	Air terminals (diffusers and grilles, variable air volume (VAV) boxes, fan coil units)	27 (diffusers and grilles)	10	Performance Testing and Inspection	ASHRAE Service Life Estimate, equipment maintenance records
Mechanical systems	Duct systems	30 (ductwork)	10	Performance Testing and Inspection	ASHRAE Service Life Estimate, equipment maintenance records
Mechanical systems (not otherwise listed)	Systems and components not otherwise listed	10	10	Performance Testing, Functional Testing, Inspection	Manufacturer's recommended life, equipment maintenance records, equipment operating history
HVAC Piping systems	Pumps, piping, and controls	20 (pumps and piping) 15 (controls	Controls: 3 pumps and piping: 10	Performance Testing, Functional Testing, Inspection	ASHRAE Service Life Estimate, equipment maintenance records, equipment operating history

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Fire protection systems	Standpipe systems and fire pumps	25	10	Performance Testing and Inspection	National Fire Protection Association (NFPA) 25 requirements, manufacturer's recommended life, equipment and maintenance records, equipment operating history
Fire protection systems	Fire extinguishers	5	3	Inspections	NFPA 10 requirements, manufacturer's recommended life, equipment maintenance records, equipment operating history
Fire protection systems	Sprinkler systems, fire panel, and fire pumps	25 (pumps and piping) 15 (fire panel) 10 (sprinklers)	10	Performance Testing and Inspection	NFPA 25 requirements, manufacturer's recommended life, equipment maintenance records, equipment operating history

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Fire protection systems	Clean agent systems	5	4	Performance Testing and Inspection	NFPA 2001 requirements, manufacturer's recommended life, equipment maintenance records, equipment operating history
Electrical distribution system	Motor control system	30	10	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history
Electrical distribution system	Transformers	30	10	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Electrical distribution system	Switchgear	30	10	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history
Electrical distribution system	Service equipment	30	10	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history
Electrical distribution system	Switchboards	30	10	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Electrical distribution system	Surge protection devices	10	5	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history
Electrical distribution system	Panelboards and circuit breakers	30	10	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history
Electrical distribution system	Low voltage conductors	50	10	Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Electrical equipment	Lights	20	5	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history
Standby power systems	Uninterruptable power supply, batteries, etc.	10	5	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history
Standby power systems	Engine generator sets	20	10	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Standby power systems	Automatic transfer switch	20	10	Performance Testing and Inspection	Manufacturer's recommended life, equipment maintenance records, average time between failures, equipment operating history
Landscaping	Turfgrass/turfgrass sod establishment	Meet the LA DOTD stabilization requirements	See Note 2	Visual Inspection	Manufacturer's recommended life
Landscaping	Meadow establishment	Meet the LA DOTD stabilization requirements	See Note 2	Visual Inspection	Manufacturer's recommended life
Landscaping	Shrub seeding establishment	Meet the LA DOTD Stabilization Requirements	See Note 2	Visual Inspection	Manufacturer's recommended life

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Landscaping	Trees	30	10	Visual Inspection	Manufacturer's recommended life
Landscaping	Shrubs	20	10	Visual Inspection	Manufacturer's recommended life
Landscaping	Perennials	10	10	Visual Inspection	Manufacturer's recommended life
Landscaping	Annuals and bulbs	3	3	Visual Inspection	Manufacturer's recommended life
Siding	Wood, metal, vinyl	30	20	Visual Inspection	Manufacturer's recommended life
Plumbing Systems	Backflow preventers	5	3	Inspection by licensed plumber	Manufacturer's recommended life
Plumbing Systems	Domestic water piping	30	20	Functional Testing and Inspection	Manufacturer's recommended life
Plumbing Systems	Faucets	7	3	Functional Testing and Inspection	Manufacturer's recommended life
Plumbing Systems	Flush valves	12	5	Functional Testing and Inspection	Manufacturer's recommended life

Asset Category	Description	Design Life (Years)	Residual Life (Years)/Performance Requirement	Handback Evaluation Tasks	Evaluation Criteria at Handback
Plumbing Fixtures	Water closets, urinals, lavatories, sinks	30	20	Functional Testing and Inspection	Manufacturer's recommended life
Plumbing Systems	Electric water heaters	10	5	Functional Testing and Inspection	Manufacturer's recommended life

Notes:

1. TEM: LA DOTD Traffic Engineering Manual
2. Need to provide a minimum of 95% coverage and plant establishment.

ARTICLE 24.

SUBMITTALS

Section 24.1 General

This Article and Section 10.05 of the Agreement describe the submittal process and review procedures for all Developer Submittals to the LA DOTD, third parties, and Utility Owners for the Project Work. The requirements of this section apply to the DB Period and the Operating Period of the Project.

Section 24.2 Submittal Content

Each Submittal provided by the Developer to the LA DOTD shall:

(a) Be accurate, complete, and in conformity with the Contract Documents;

(b) Include a completed transmittal form in a format agreed to by the LA DOTD and the Developer; and

(c) Include all necessary information and documentation concerning the subject matter and any additional information reasonably requested by the LA DOTD.

Section 24.3 Submittal Types and Time Periods

24.3.1 Technical Content

Article 2 describes the various Submittal stages for the Design Documents. Additionally, the discipline-specific Technical Provisions describe the information to be included with each Submittal. The Developer may propose, subject to Approval, different information be shifted into an earlier or later Submittal.

The Developer shall be responsible for coordinating the requirements for and the timing of all Submittal reviews required by (a) Governmental Entities (other than the LA DOTD), and (b) Utility Owners in connection with the Project Work and shall comply with that entity's submittal requirements and review process.

24.3.2 Submittal Certification

With each Submittal, the Developer shall certify in writing that the Submittal meets the requirements of the Contract Documents and has been coordinated among all requirements of the Contract Documents, including at a minimum, DB Work and O&M Work.

For RFC design Submittal (except for test results) include signatures recommending certification from, at a minimum, the following authorized personnel:

(a) Developer's Project Manager;

(b) Design Manager;

(c) Construction Manager;

(d) Construction Quality Acceptance Manager;

(e) Design Quality Manager; and

(f) Maintenance Manager.

24.3.3 Quality Control Certification

Utilize, through the Developer's QMP, a technical approval and certification system for every Submittal to the LA DOTD, Utility Owner, and third party. Provide a quality control certification letter with each Submittal.

24.3.4 Other Certifications

Provide any other certification(s) required by applicable Law, third party agreements, and Utility Owner agreements with Submittal, as necessary.

Section 24.4 Submittal Format

All Submittals shall be made in the English language using U.S. customary units. All Submittals are made in .pdf format, except where otherwise specified by the Contract Documents and third-party Agreements.

All plans and drawings shall be submitted true to scale as required by Article 2 and the LA DOTD per the level of design Submittal required and in accordance with the LA DOTD's CADD standards, and for any Submittals to be reviewed by other Governmental Entities, as required by that Governmental Entity.

Each Submittal shall include a signed transmittal letter indicating the date of the transmittal, the type, stage where applicable, review type, entities to perform review, and review period for each entity.

The Developer shall upload Submittals to LA DOTD's Document Control website in .pdf format and native file format as appropriate.

If a Submittal is too large to submit to the LA DOTD's Document Control website or is submitted to the LA DOTD by other means, a cover letter shall be uploaded for the Submittal to the LA DOTD's Document Control website, providing Submittal information, including how the Submittal is submitted to the LA DOTD.

Work within the parameters of LA DOTD's Document Control website to ensure that the LA DOTD receives Project information notifications via e-mail. The LA DOTD reserves the right to limit security levels. The Developer is responsible for information provided to the LA DOTD by their personnel via the Project website. A training session for the LA DOTD's Document Control website will be provided by the LA DOTD, if requested by the Developer.

Section 24.5 Submittal List and Submittal Schedule

The Developer shall identify, schedule, and manage the Submittals necessary to meet the requirements of the Contract Documents.

The Contract Documents specify the minimum required Submittals, types, and content required by the LA DOTD. Identify any additional Submittals required by the PMP, and any agreements with third parties, including Utility Owners.

The time frames set forth in this Article and the Agreement apply only to Submittals to the LA DOTD. The Developer shall be responsible for obtaining all required approvals from and coordination regarding requirements and review time frames for Submittals to (a) Governmental Entities other than the LA DOTD; (b) Utility Owners; and third parties to comply with the Project Schedule.

Maintain a list of all anticipated Submittals to the LA DOTD, third parties, and Utility Owners. For each Submittal, the list shall include:

(a) Submittal title;

(b) Document control number;

(c) A brief description of the Submittal;

(d) Design stage per Article 2;

(e) The reviewing entity or entities (the LA DOTD, third parties, Utility Owners);

(f) The type of review for each reviewing entity per this Article 24;

(g) The review period for each reviewing entity per this Article 24 and the discipline-specific Article of the Technical Provisions;

(h) Planned Submissions date;

(i) Actual submission date;

(j) Status of responses(s) to the Submittal; and

(k) Resubmittal dated as applicable.

Section 24.6 Submittal Schedule

Submit the initial Submittal list no later than 30 days after NTP. In addition, provide the following:

(a) A preliminary Submittal schedule for the DB Work showing dates when all Design Documents required by the Contract Documents are submitted. Coordinate this preliminary DB Work Submittal schedule with dates shown on the Project Schedule;

(b) Provide an Approved final Submittal list and Approved Submittal schedule no later than 60 days after NTP; and

(c) Each month, submit an updated Submittal list and Submittal schedule For Information in coordination with the progress report. The updated Submittal list and Submittal schedule shall include revised submission dates, actual submission dates, and status of response(s) to the Submittal.

Section 24.7 Submittal Process

24.7.1 Transmittal

Provide Submittals electronically via LA DOTD's Document Control website. Enter all Submittals, Requests for Information (RFIs), or other Project-related documents through LA DOTD's Document Control website. In the case of sample or mock-up Submittals, include information describing where the sample or mock-up Submittal can be examined.

A Submittal will be returned without review if the Submittal requirements have not been met. The LA DOTD reserves the right to determine that Submittal requirements have not been met at any time in the Submittal review process under Section 10.05 of the Agreement.

Section 24.8 Submittal Types and Review Periods

24.8.1 Submittal Types

Submittals provided by the Developer to the LA DOTD shall consist of the following types:

(a) Submittals For Information – Submittals for LA DOTD Information do not include any deadline for the LA DOTD to respond. The LA DOTD may provide comments at any time or not at all;

(b) Submittals for Review and Comment – the LA DOTD responses include: (i) Reviewed with no Comments; (ii) Reviewed with Comments, resubmittal not required; or (iii) revise and resubmit. Submittals shall be subject to Review and Comment unless either the Contract Documents or the Developer's approved Submittal schedule contemplates a different type of review; and

(c) Submittals for Approval – the LA DOTD responses include: (i) Approved; (ii) Approved as noted, resubmittal not required; (iii) Approved as noted, resubmittal required; (iv) revise and resubmit; and (v) rejected.

24.8.2 Review Periods – Definition and Exceptions

The timeline for LA DOTD Submittal response is set out in Section 10.05 of the Agreement. In addition, the following cut-off times apply:

(a) Submittals received complete through the LA DOTD's Document Control website before 12:00 pm Central Time shall be considered received the same day. Submittals received after 12:00 pm Central Time shall be considered received the next day. The review period commences on the day following receipt;

(b) Review period ends and responses shall be transmitted through the LA DOTD's Document Control website by 12:00 pm Central Standard Time; and

(c) If the timeframe end date for the LA DOTD response to a submittal falls on a non-Business Day, the end date for a response will be 12:00 pm Central Time of the next Business Day.

24.8.3 Submittal Response

The LA DOTD's Document Control website shall be used for the receipt, review, and disposition of all Submittals required to be submitted to the LA DOTD. The LA DOTD provides written responses in accordance with the defined review types and review periods noted in section 24.8.

24.8.4 Resubmittal Process

Resubmittal of Submittals may be required if deemed necessary by either the Developer's design quality assurance staff or the LA DOTD.

The Developer shall address all comments received from a prior Submittal in a manner satisfactory to the commenting party in each resubmittal. Indicate the changes made to plans, specifications, and documents from previous Submittals, for ease of review when resubmittals are made. In addition:

(a) The Developer shall resubmit the Submittal (as well as any other required design resubmittal) as many times as necessary to address the LA DOTD comments;

(b) The Developer may continue its design activities, at its sole risk, during the resubmittal process. Such continuation in no way relieves the Developer of the responsibility to incorporate the comments arising out of the resubmittal process into the Design Documents; and

(c) If a Submittal is subject to Approval, the Developer may not proceed with Work on that Element of the Project without an Approved response.

24.8.5 Developer's Obligation to Coordinate

The Developer shall transmit any response or other correspondence received from a third party or Utility Owner with respect to Submittals to the LA DOTD.

The Developer shall identify and resolve any conflicting comments and work with all parties to achieve resolution.

24.8.6 Amended Submittals

If the Developer determines that any Submittal previously provided to the LA DOTD is required to be amended or is identified to be outdated, incomplete, contain errors, or is no longer sufficient to cover DB Work, the Developer shall revise the Submittal and resubmit for the same type of review as specified for the initial Submittal. Specific changes made since the previous Submittal shall be identified.

Section 24.9 Summary of Submittals

Table 24-1 is a summary of Submittals described in the Technical Provisions that are to be submitted to the LA DOTD. It is not meant to be an all-inclusive list. The Developer is responsible for creating a full and complete Submittal list, including all Submittals required to be submitted to the LA DOTD by the Contract Documents even if not referenced in Table 24-1.

Table 24-1. Summary of Submittals

ID	Article/Section	Description	Action
1	Section 2.2	Project Management Plan (PMP), including all sub plans and components of the PMP	Approval
2	Section 2.2.5	Updates to the PMP	Approval
3	Section 2.3	Project Administration Plan	Approval
4	Section 2.3.1.3	Design Workshop agenda	Review and Comment
5	Section 2.3.2.1	Preliminary Project Baseline Schedule (Preliminary PBS)	Review and Comment
6	Section 2.3.2.2	Project Baseline Schedule	Approval
7	Section 2.3.2.4	Project Schedule Monthly Updates	Approval
8	Section 2.3.2.5	Revised Project Schedule	Approval
9	Section 2.3.2.7	Project Recovery Schedule	Approval
10	Section 2.3.2.8	Final Project Schedule	Approval
11	Section 2.3.4.1	Format of the Monthly Progress Report	Approval
12	Section 2.3.4.1	Monthly Progress Reports	Review and Comment
13	Section 2.4.1	Design Management Plan	Approval
14	Section 2.4.4	Design Unit Reports	Review and Comment
15	Section 2.4.7	Design Review Plan	Review and Comment
16	Section 2.4.9 & 2.4.10	Definitive Design	Review and Comment
17	Section 2.4.9 & 2.4.11	Interim Design	Review and Comment
18	Section 2.4.9 & 2.4.12	Final Design	Review and Comment
19	Section 2.4.13	RFC Documents	Review and Comment

ID	Article/Section	Description	Action
20	Section 2.4.13	Comment resolution form	Review and Comment
21	Section 2.4.13.2	RFC Design Calculations	Review and Comment
22	Section 2.4.13.3	Product cut sheet information	For Information
23	Section 2.4.13.4	Major Temporary Components Design Documents	For Information
24	Section 2.4.13.5 & 2.4.14.5	As-Built Plans	Review and Comment
25	Section 2.4.14.4	Design Review report and all Design Documents pertinent to the Design Review	For Information
26	Section 2.4.15	Request for Design Deviations	Approval
27	Section 2.4.19.1	Design Quality Manager monitoring reports	For Information
28	Section 2.4.20.1	Design Quality Manager monthly reports	For Information
29	Section 2.4.21	Final Design Report	Review and Comment
30	Section 2.4.21.4	Project Specifications	Review and Comment
31	Section 2.5.1	Construction Management Plan	Review and Comment
32	Section 2.5.3	Baseline Element Conditions Report and associated video recording	For Approval
33	Section 2.5.4	Shop and Working Drawing Documents	For Information
34	Section 2.5.5	Product Data	For Information
35	Section 2.5.6	Utility Tracking Report	Review and Comment
36	Section 2.5.7	Geotechnical Instrumentation and Monitoring Plan	Review and Comment
37	Section 2.5.7	Settlement Monitoring Plan (if Geotechnical Instrumentation and	Review and Comment

ID	Article/Section	Description	Action
		Monitoring Plan requires settlement instrumentation)	
38	Section 2.5.8	Sewer Inspection Videos	Review and Comment
39	Section 2.5.9	Demolition and Removal Work Plan	Review and Comment
40	Section 2.5.10	Survey Records and Reports	Review and Comment
41	Section 2.6	Maintenance Management Plan (MMP)	Approval
42	Section 2.7	Occupational and Public Safety Plan (Safety Plan)	Approval
43	Section 2.7.7	Hazardous Materials and Wastes Management Plan (HM/WMP)	Approval
44	Section 2.7.8	Emergency Action Plan	Approval
45	Section 2.7.9	Incident investigation plan	Review and Comment
46	Section 2.7.9	Incident investigation reports	For Information
47	Section 2.7.10	Construction Safety Report	For Information
48	Section 2.8	Transportation Management Plan (TMP)	Approval
49	Section 2.9	Public Information and Communications Plan (PICP)	Approval
50	Section 2.10	Environmental Compliance and Mitigation Plan (ECMP)	See ID 61
51	Section 2.11	Quality Management Plan (QMP)	Approval
52	Section 2.11.1	Design Quality Management Plan	See ID 51
53	Section 2.11.1	Construction Quality Management Plan	See ID 51
54	Section 2.11.1	Maintenance Quality Management Plan	See ID 51
55	Section 2.11.3	Quality Reports	Review and Comment
56	Section 2.11.3.1	Updates to QMP	Approval

ID	Article/Section	Description	Action
57	Section 2.12	Disadvantaged Business Enterprise Outreach and Participation Plan (DBE Plan)	Approval
58	Section 2.13	Handback Work Plan	Approval
59	Section 2.14	Workforce Development Plan	Approval
60	Section 3.3	Comprehensive Environmental Protection Program (CEPP)	Approval
61	Section 3.3.2	Environmental Compliance and Mitigation Plan (ECMP)	Approval
62	Section 3.3.3.3	Environmental Protection Training Plan Outline	Approval
63	Section 3.3.4	Construction Monitoring Plan (CMP)	Approval
64	Section 3.4.1	Erosion and Sediment Control Plan	Review and Comment
65	Section 3.4.2	Materials Management Plan	Approval
66	Not Used	Not Used	Not Used
67	Not Used	Not Used	Not Used
68	Not Used	Not Used	Not Used
69	Section 3.5.3	Copies of permits issued to the Developer	For Information
70	Section 4.4	Preliminary ROW cost estimate	For Information
71	Section 4.4	ROW Acquisition Services Plan	Approval
72	Section 4.4.1	Title Research Reports	Review and Comment
73	Section 4.4.2	Boundary Survey	Review and Comment
74	Section 4.4.2	Title Updates	Review and Comment
75	Section 4.4.4.1	Base ROW Maps	Review and Comment
76	Section 4.4.4.2	Final ROW Map	Approval

ID	Article/Section	Description	Action
77	Section 4.4.5	Title Take-Off	Review and Comment
78	Section 4.4.6	Appraisal Binder	Review and Comment
79	Section 4.4.7	Appraisal plan	Approval
80	Section 4.4.7	Final appraisal report and appraisal review report	For Information
81	Section 4.4.10.1	Acquisition Documentation	Approval
82	Section 4.4.10.2	Acquisition counteroffers	Approval
83	Section 4.4.11	ROW Stage Relocation Plan	Approval
84	Section 5.3.1.4	Utility Adjustment Concept Plans	Review and Comment
85	Section 5.3.1.3	Utility Conflict Matrix	Review and Comment
86	Section 5.3.1.8	Utility Adjustment Plans	Review and Comment
87	Section 6.5	Construction and Maintenance Agreement	Review and Comment
88	Section 6.5	Preliminary Engineering Agreement	Review and Comment
89	Section 6.5	Servitude Agreement	Review and Comment
90	Section 6.5	Railroad Right of Entry Agreements	Review and Comment
91	Section 7.3.1	Additional Geotechnical Investigations memo	For Information
92	Section 7.4	Vibration monitoring plan	Review and Comment
93	Section 7.3.3	Global stability calculations	Review and Comment
94	Section 7.6	Blasting plan(s)	Approval
95	Section 7.6.1	Geotechnical Planning Report	Review and Comment

ID	Article/Section	Description	Action
96	Section 7.6.2	Geotechnical Design Reports	Review and Comment
97	Section 7.6.3	Geotechnical Instrumentation and Monitoring Plan	Review and Comment
98	Section 7.6.3.1	Geotechnical Instrumentation and Monitoring Interim Report	Review and Comment
99	Section 7.6.3.2	Geotechnical Instrumentation and Monitoring Final Report	Review and Comment
100	Section 8.4	Property Owner Notification Letter	Approval
101	Section 8.4	Field survey	Review and Comment
102	Section 8.4	Files associated with ROW mapping	Review and Comment
103	Section 8.4.1	Survey Control Package	Review and Comment
104	Section 9.1	Demolition Photographs	For Information
105	Section 9.3	Demolition and Abandonment Plan	Approval
106	Section 9.4.1.1	Sounding information from sweep survey prior to commencement of Construction Work for the specific applicable Design Unit(s)	Review and Comment
107	Section 9.4.1.1	Sounding information from sweep survey whenever debris is known or suspected to have fallen into the channel	Review and Comment
108	Section 9.4.1.1	Sounding information from sweep survey following completion of demolition work	Review and Comment
109	Not used	Not used	Not used
110	Not used	Not used	Not used
111	Section 11.3.1	Draft Pavement Design Report	Review and Comment
112	Section 11.3.1	Pavement Design Report	Review and Comment

ID	Article/Section	Description	Action
113	Section 11.3.3	Pavement Life Cycle Plan	Review and Comment
114	Section 11.4.1	Designs for new pavements	Review and Comment
115	Section 13.3.1.1	Nontraditional Bridge and Foundation Types (if needed)	Approval
116	Section 13.3.1.7	As-built Bridge Load Rating Reports and as-built plans	Review and Comment
117	Section 14.3	Draft Aesthetic Concept Plan	Review and Comment
118	Section 14.3	Final Aesthetic Concept Plan	Approval
119	Section 14.3.4	Draft Aesthetic Alternative Simulations (Visualizations)	Review and Comment
120	Section 14.3.4	Final Aesthetic Alternative Simulations (Visualizations)	Review and Comment
121	Section 14.3.5	Draft Video Simulation	Review and Comment
122	Section 14.3.5	Final Video Simulation	Review and Comment
123	Section 14.4.1.5	Draft Lighting Layout Plan	Review and Comment
124	Section 14.4.1.5	Final Lighting Layout Plan	Review and Comment
125	Section 14.4.1.6	Concept plans and material samples for control buildings	Approval
126	Section 14.4.2	Construction Mockups and samples	Approval
127	Section 15.4	Design Analysis	Approval
128	Section 15.5	Visualizations	Review and Comment
129	Section 15.6	Environmental Impact Report	Review and Comment
130	Section 15.7	Maintenance Manuals	Review and Comment

ID	Article/Section	Description	Action
131	Section 16.3.1.9	Lighting Analysis Report	Review and Comment
132	Section 16.3.1.10	Electrical Analysis	Review and Comment
133	Section 16.3.1.11	Lighting System Plan	Review and Comment
134	Section 16.3.2.2	Lighting Shop Drawings	Review and Comment
135	Section 16.3.2.2	Lighting layout	Review and Comment
136	Section 16.3.3.1	Lighting Maintenance Manual	Review and Comment
137	Section 17.3.1	Sign Layout Plan	Review and Comment
138	Section 17.3.1	Sign Shop Drawings	Approval
139	Section 17.3.1	Overhead Sign Structures	Review and Comment
140	Section 17.3.1	Overhead Sign Structure Shop drawings	Approval
141	Section 17.3.1	Engineering Reasoning and Decision Document (ERDD)	Approval
142	Section 17.3.2	Permanent Pavement Marking Plan	Review and Comment
143	Section 17.3.2	Pavement Marking Shop Drawings	Approval
144	Section 17.3.3.1	Signal Shop Drawings	Approval
145	Section 17.3.3.3	Final signal timing plans	For Information
146	Section 17.3.3.2	Permanent signal location layout	Review and Comment
147	Section 17.3.3.2	Traffic Signal Inventory document	For Information
148	Section 17.3.3.4	Traffic Signal Shop Drawings	Approval
149	Section 17.3.3.6	Temporary traffic signal plans	Approval
150	Section 18.3	Transportation Management Plan	Approval

ID	Article/Section	Description	Action
151	Section 18.3	Work Zone Light Plan	Review and Comment
152	Section 18.4	Mitigation and Limitation of Liability/Claims Plan	Approval
153	Section 18.6.1.1	Traffic Control Plan(s)	Approval
154	Section 18.6.1.1	TCP Concept Presentation	Approval
155	Section 18.6.2.1	Work Zone Personnel names and phone numbers	For Information
156	Section 18.6.2.3	AM/PM/off-peak LOS analysis (as necessary)	Review and Comment
157	Section 18.6.2.4	Traffic Interruption Request (TIR)	Approve
158	Section 19.3	Initial ADA Compliance and Feasibility Report	Review and Comment
159	Section 19.3	Final ADA Compliance and Feasibility Report	Approval
160	Section 19.3	Draft Bicycle and Pedestrian Study and Report	Review and Comment
161	Section 19.3	Final Bicycle and Pedestrian Study and Report	Approval
162	Section 20.4.1.1	ITS Inventory	Review and Comment
163	Section 20.4.1.2	ITS Master Plan	Approval
164	Section 20.4.1.2	Updated ITS Master Plan	Approval
165	Section 20.4.2.1	Complete list of objects implemented as part of portable CCTV equipment deployment	Approval
166	Section 20.6.1	ITS Testing Plan	Review and Comment
167	Section 20.6.1	ITS Test Results Package	For Information
168	Section 20.6.2	Plans-of-Record (As-Built Plans)	Approval
169	Section 21.2.3	Toll Concept Plan and Business Rules	Approval
170	Section 21.3	Toll Management Plan (TOMP)	Approval

ID	Article/Section	Description	Action
171	Section 21.3 & 21.5.4	Factory Acceptance Testing Plan, Results, and Reports	Review and Comment
172	Section 21.3 & 21.5.4	Controlled Environment Testing Plan, Results, and Reports	Review and Comment
173	Section 21.3 & 21.5.4	Onsite Integration Testing Plan, Results, and Reports	Approval
174	Section 21.3 & 21.5.4	System Acceptance Testing Plan, Results, and Reports	Approval
175	Section 21.3	On-going performance reports	Review and Comment
176	Section 21.3	Final training plan(s)	Review and Comment
177	Section 21.3	User manuals	Review and Comment
178	Section 21.3	Final partial acceptance and operations plan	Review and Comment
179	Section 21.3	Final performance monitoring plan	Review and Comment
180	Section 21.3	Final maintenance plan	Review and Comment
181	Section 21.3	Training manuals	Review and Comment
182	Section 21.4.1.2	Data Security Plan	Review and Comment
183	Section 21.4.1.2	Toll Operations Audit Reports	Review and Comment
184	Section 21.4.3.3	Transponder branding and marketing materials (as needed)	Approval
185	Section 21.4.4.2	Toll System installation plans	Approval
186	Section 21.4.4.3	Master Test Plan (MTP)	Review and Comment
187	Section 21.4.4.3	Detailed Test Plans and procedures	Approval
188	Section 21.4.4.3	List of software and hardware versions	Review and Comment

ID	Article/Section	Description	Action
189	Section 21.4.4.4	Training Plan	Review and Comment
190	Section 21.4.4.4	Training Manual	Review and Comment
191	Section 21.4.4.5	Inventory listing of all spare parts	For Information
192	Section 21.4.4.5	Disaster Recovery and Business Continuity Plan	Approval
193	Section 21.4.4.5	Disaster Recovery and Business Continuity Procedures	Approval
194	Section 21.5.1	Toll Deployment Schedule	Review and Comment
195	Section 21.5.5	O&M User and Training Manuals	Review and Comment
196	Section 22.4	Final DB Limit Drawings	Review and Comment
197	Section 22.4	Draft O&M Limit Drawings	Review and Comment
198	Section 22.4	Final O&M Limit Drawings	Approval
199	Section 22.5.1	Updated DB Period O&M Plan (Annually)	Review and Comment
200	Section 22.5.2	Operating Period O&M Plan	Approval
201	Section 22.5.2	Updated Operating Period O&M Plan (Annually)	Review and Comment
202	Section 22.6	Safety Plan (Updated)	Approval
203	Section 22.7	O&M Quality Plan	Approval
204	Section 22.7.2	Draft O&M Report	Review and Comment
205	Section 22.7.2	Final O&M Report	Review and Comment
206	Section 22.7.3	Annual Operations and Maintenance Report	Approval
207	Section 22.9	Video of Elements within DB Limits and Inspection Report	Approval

ID	Article/Section	Description	Action
208	Section 22.12.1.1	Draft Renewal Work Plan	Review and Comment
209	Section 22.12.1.1	Final Renewal Work Plan	Approval
210	Section 22.12.1.1	Updated Renewal Work Plan (Annually)	Review and Comment
211	Section 22.12.1.2	Annual Renewal Work Schedule	Approval
212	Section 22.12.1.2	Monthly Renewal Work Schedule	Approval
213	Section 22.12.2	Draft Renewal Work Report (Monthly)	Review and Comment
214	Section 22.12.2	Final Renewal Work Report (Quarterly)	Review and Comment
215	Section 22.13.3	Condition Survey Report	Approval
216	Section 22.13.4	Results of Special Bridge Inspection	Review and Comment
217	Section 22.13.5	Performance Section Plans	Review and Comment
218	Section 23.3	Output data arising from any testing made as part of the Handback Conditions Report	Review and Comment
219	Section 23.2	Preliminary Handback Work Plan	Review and Comment
220	Section 23.2	Final Handback Work Plan	Approval
221	Section 23.3.1	Preliminary Project Handback Condition Report	Approval
222	Section 23.3.2	Prefinal Project Handback Condition Report	Review and Comment
223	Section 23.3.3	Final Project Handback Condition Report	Approval
224	Section 23.4	Residual Life Methodology	Approval