

**MARCH 30, 2011 CTRMA BOARD OF DIRECTORS MEETING
Summary Sheet**

AGENDA ITEM # 7

Approve a comprehensive development agreement with Central Texas Mobility Constructors to design and construct the Manor Expressway

Department: Engineering

Associated Costs: \$207,297,859.00

Funding Source: TxDOT Toll Equity / Revenue Bonds

Board Action Required: Yes

Description of Matter:

On February 23, 2011, the CTRMA Board of Directors authorized a Committee led by Director of Engineering Wesley M. Burford, P.E. to commence negotiations with the Best Value Proposer, Central Texas Mobility Constructors, regarding the Comprehensive Development Agreement for the design and construction of the Manor Expressway Project.

CTRMA staff and Central Texas Mobility Constructors have completed these negotiations. CTRMA staff now seeks Board approval to grant the Executive Director the authority to execute the Design/Build Comprehensive Development Agreement following its review and acceptance by the Attorney General of Texas.

Attached documentation for reference:

“CTRMA Manor Expressway Design/Build Comprehensive Development Agreement Summary of Key Elements”

Contact for further information:

Wesley M. Burford, PE, Director of Engineering

**CTRMA Manor Expressway
Design/Build Comprehensive Development Agreement
Summary of Key Elements**



Project Description

The proposed Manor Expressway Project is an approximately 6.2-mile section of the US 290 corridor located between US 183 and to just east of State Highway (SH) 130 in eastern Travis County. Currently this section of US 290 exists as a four-lane divided highway. The Manor Expressway Project will widen the existing highway by fully reconstructing it to include a controlled access freeway facility consisting of three tolled mainlanes and three non-tolled frontage road lanes in each direction.

Design/Build Comprehensive Development Agreement Scope

The D/B CDA Developer's scope includes the design, construction, and utility relocations for the project.

Price

- **\$207,272,859** - Development Price
- **\$25,000** - Recommended Value Add Concept (VAC) #1 - provisions for potential future abutment shaft locations
- **\$207,297,859** - Development Price inclusive of recommended VAC #1

Schedule

- Deadline for completion of interim development work is **487** calendar days after the issuance of NTP
- Deadline for construction to be substantially complete is **955** calendar days after issuance of NTP
- Deadline for final acceptance is **120** calendar days after substantial completion

Escalation

If NTP has not been issued by the CTRMA as of **9/1/11**, the D/B CDA Developer is entitled to an adjustment in the Development Price. If NTP has not been issued by **2/3/12**, the D/B CDA Developer may seek to negotiate a Change Order, including an extension in time for issuance of NTP, and an increase in the Development Price mutually acceptable to the D/B CDA Developer and the CTRMA.

Liquidated Damages

- **\$10,000** for each calendar day after the interim completion deadline
- **\$90,000** for each calendar day after the substantial completion deadline
- **\$5,000** for each calendar day after the acceptance deadline

Incentive Payment

- **\$45,000** per day up to an aggregate amount of **\$2,700,000** for early substantial completion
- **\$5,000** per day up to an aggregate of **\$900,000** for early interim completion

DBE Requirements

- The DBE participation goal with respect to design services is **12.2%**
- The DBE participation goal with respect to all other Development Work is **12.2%**

Warranty information

- **5 years** on pavement, buildings, structures, toll structures, gantries, structural concrete, steel paint system, settlement of roadway grade, and settlement of noise and retaining walls
- **2 years** on signing, traffic signals, and lighting
- **1 year** on turf establishment

**GENERAL MEETING OF THE BOARD OF DIRECTORS
OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

RESOLUTION NO. 11-___

**Approve a Comprehensive Development Agreement with Central Texas
Mobility Constructors to Design and Construct the Manor Expressway**

WHEREAS, by Resolution No. 11-013 approved February 23, 2011, the executive director was authorized to finalize a Design/Build Comprehensive Development Agreement with Central Texas Mobility Constructors for development of the Manor Expressway Project and to present that final proposed agreement to the Board for its approval; and

WHEREAS, the Authority staff and its consultants have negotiated a final proposed Design/Build Comprehensive Development Agreement with Central Texas Mobility Constructors, and the executive director recommends Board approval of the proposed Design/Build Comprehensive Development Agreement set forth in Attachment "A" to this Resolution.

NOW THEREFORE, BE IT RESOLVED, that the Board of Directors approves the proposed Design/Build Comprehensive Development Agreement with Central Texas Mobility Constructors set forth as Attachment "A" to this Resolution; and

BE IT FURTHER RESOLVED, that Board of Directors authorizes the Executive Director to complete and execute the Design/Build Comprehensive Development Agreement on behalf of the Authority in the form or substantially the same form set forth in Attachment "A" to this Resolution, and

BE IT FURTHER RESOLVED, that Board of Directors authorizes the Executive Director to issue a Notice to Proceed in accordance with the Design/Build Comprehensive Development Agreement, subject to compliance with of all necessary financial and legal prerequisites to the issuance of the Notice to Proceed.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 30th day of March, 2011.

Submitted and reviewed by:

Approved:

Andrew Martin
General Counsel for the Central
Texas Regional Mobility Authority

Ray A. Wilkerson
Chairman, Board of Directors
Resolution Number: 11-___
Date Passed: 3/30/11

ATTACHMENT “A” TO RESOLUTION 11-

**Design/Build Comprehensive Development Agreement with
Central Texas Mobility Constructors**

[Following Pages]

Execution Copy

290 East Toll Project

DESIGN/BUILD COMPREHENSIVE DEVELOPMENT AGREEMENT

Dated as of _____ __, 2011

By and Among

Central Texas Regional Mobility Authority,
a regional mobility authority operating pursuant to
Texas Transportation Code Chapter 370

and

Central Texas Mobility Constructors, LLC (“D/B CDA Developer”)

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**DESIGN/BUILD COMPREHENSIVE DEVELOPMENT AGREEMENT
(290 East Toll Project)**

This **DESIGN/BUILD COMPREHENSIVE DEVELOPMENT AGREEMENT** (“**Agreement**”) is made and entered into as of _____ __, 2011, by and between the **CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY** (the “**CTRMA**”), a regional mobility authority created by certain counties located in northeastern Texas and operating pursuant to Chapter 370 of the Texas Transportation Code, and **CENTRAL TEXAS MOBILITY CONSTRUCTORS, LLC**, a Texas limited liability company (“**D/B CDA Developer**”), with reference to the following facts:

A. The CTRMA desires to develop as a toll road a portion of existing US 290 East in Travis County, Texas, extending approximately 6 miles from east of US 183 to east of Parmer Lane (such roadway and alignment including its intersections with other highways and roads, bridges and other facilities, including toll gantries and other toll facilities, as more specifically described in the Scope of Work, are the “**Project**”).

B. The CTRMA has determined that it is in the best interests of the CTRMA and the public to contract with a single entity to develop, design and construct the Project.

C. Pursuant to Chapter 370 of the Texas Transportation Code (the “**Act**”), 43 Tex. Admin. Code, Chapter 26 (the “**Rules**”), and the CTRMA’s Policies and Procedures Governing Procurement of Goods and Services (“**CTRMA Procurement Policies**”), the CTRMA issued a Request for Qualifications on June 13, 2010 (the “**RFQ**”). The RFQ was supplemented by information posted on the CTRMA website.

D. On July 16, 2010, the CTRMA received qualification submittals (“**Qs**”) from prospective D/B CDA Developers in response to the RFQ.

E. On July 28, 2010, the CTRMA’s Board of Directors (the “**Board**”), in accordance with the recommendation of an RFQ evaluation committee, shortlisted prospective D/B CDA Developers based upon their Qs.

F. On November 4, 2010, pursuant to the Act, the Rules, and the CTRMA Procurement Policies, the CTRMA issued a Request for Detailed Proposals (“**RFDP**”) to the prospective D/B CDA Developers shortlisted by the Board.

G. The CTRMA received four (4) responses to the RFDP on February 3, 2011.

H. After review and analysis and in accordance with applicable law, rules, policies, and the RFDP, an RFDP evaluation committee comprised of CTRMA staff and consultants

determined that D/B CDA Developer was the proposer which best met the selection criteria contained in the RFDP and that its proposal was the one which provided the best value to the CTRMA.

I. On February 23, 2011, the CTRMA Board accepted the recommendation of the CTRMA Project Director and the RFDP evaluation committee and authorized the CTRMA staff to negotiate and finalize this Agreement.

J. The Project Director of the CTRMA has been authorized to enter into this Agreement pursuant to a resolution of the CTRMA Board dated _____, 2011.

K. D/B CDA Developer's team includes: Webber, LLC, a Texas limited liability company, and Texas Sterling Construction Co., a Delaware corporation.

L. The Parties intend for this Agreement to be a fixed price, lump sum contract obligating D/B CDA Developer to perform all work necessary to complete the Development Work by the deadlines set forth in the Agreement and in a manner satisfactory to the CTRMA, for the Development Price, subject only to certain specified limited exceptions set forth herein. D/B CDA Developer submitted with its Proposal a fixed price for the Project, and the Contract Documents provide that the CTRMA has no liability for any portion of the Development Work for which a notice to proceed ("NTP") has not been issued. In order to allow the CTRMA to budget for and finance the Project and to reduce the risk of cost overruns, this Agreement includes restrictions affecting D/B CDA Developer's ability to make claims for an increase to the Development Price or an extension of the Completion Deadline or the Acceptance Deadline herein.

M. If D/B CDA Developer fails to complete the Development Work within the time limitations set forth in the Contract Documents, then the CTRMA will suffer substantial losses and damages which are impracticable and extremely difficult to ascertain. The Contract Documents therefore provide that D/B CDA Developer shall pay the CTRMA substantial Liquidated Damages in the event such completion is delayed, on the conditions provided herein.

N. The Reference Documents include a Schematic Plan and certain preliminary Existing Design Plans for the design of the Project. The CTRMA and D/B CDA Developer both intend for D/B CDA Developer to assume full responsibility and liability with respect to development of a Project Design of the Project, including correction of any errors, omissions, inconsistencies or other defects in the Schematic Plan or Existing Design Plans affecting constructability, and for D/B CDA Developer to indemnify, defend and hold each of the Indemnified Parties harmless with respect to any defects in the Project which may relate to errors, omissions, inconsistencies or other defects in the Schematic Plan or Existing Design Plans.

NOW, THEREFORE, in consideration of the sums to be paid to D/B CDA Developer by the CTRMA, the foregoing promises and the covenants and agreements set forth herein, the Parties hereby agree as follows:

1. CONTRACT COMPONENTS.

1.1 Certain Definitions.

Initially capitalized terms not otherwise defined in the body of this Agreement shall have the definitions set forth in Exhibit A of this Agreement.

1.2 Order of Precedence.

Each of the Contract Documents is an essential part of this Agreement. The Contract Documents are intended to be complementary and to describe and provide for a complete Agreement. In the event of any conflict among the Contract Documents or between the Contract Documents and other documents, the order of precedence shall be as set forth below.

1.2.1 For design and construction related standards and requirements, the order of precedence shall be:

- (a) Change Orders and Agreement amendments;
- (b) This Agreement (including Exhibit A but exclusive of other exhibits, unless specifically referred to in the body of the Agreement);
- (c) The Proposal, to the extent that it meets or exceeds the requirements of the other Contract Documents. In other words, if the Proposal includes statements that can reasonably be interpreted as offers to provide higher quality items than otherwise required by the Contract Documents or to perform services in addition to those otherwise required, or otherwise contains terms which are more advantageous to the CTRMA than the requirements of the other Contract Documents, D/B CDA Developer's obligations hereunder shall include compliance with all such statements, offers and terms. In no event, unless specifically provided herein, shall the Proposal supercede a higher standard or obligation contained elsewhere in the Contract Documents.
- (d) Scope of Work, as modified by any ATCs accepted by the CTRMA (Exhibit B to this Agreement);
- (e) Technical Provisions, as modified by any ATCs accepted by the CTRMA (Exhibit C to this Agreement);

(f) TxDOT Standards and Specifications (including TxDOT Austin Standards); and

(g) AASHTO Guidelines.

Certain of the Appendices to Exhibit D which are listed as Reference Documents are referenced in the Contract Documents for the purpose of defining requirements of the Contract Documents. Each such Appendix shall be deemed incorporated in the Contract Documents to the extent that it is so referenced, with the same order of priority as the highest level Contract Document in which the reference occurs. Additional details and more stringent requirements contained in a lower priority document will control unless the requirements of the lower priority document present an actual conflict with the requirements of the higher level document. Notwithstanding the order of precedence among Contract Documents set forth in this Section 1.2, in the event of a conflict within a Contract Document or set of Contract Documents with the same order of priority (including within documents referenced therein), the CTRMA shall have the right to determine, in its sole discretion, which provision applies. D/B CDA Developer shall request the CTRMA's determination respecting the order of precedence among such provisions promptly upon becoming aware of any such conflict.

1.3 Referenced Standards.

1.3.1 Unless otherwise specified by the CTRMA, any reference in the Contract Documents to a described publication affecting any portion of the Development Work shall be deemed to mean the latest edition or revision thereof, and amendments and supplements thereto, in effect on the Proposal Date.

1.3.2 In interpreting Referenced Standards:

- (a) References to the Project owner shall mean the CTRMA; and
- (b) References to “**plan(s)**” shall mean the Design Documents.

2. GENERAL FRAMEWORK AND OUTLINE OF TRANSACTION.

2.1 Public-Private Transaction.

This Agreement creates a public-private transaction to develop, design, permit, construct and insure the Project (with the quality and durability contemplated in the Contract Documents).

2.2 Role of Parties to Transaction.

2.2.1 D/B CDA Developer's Role.

2.2.1.1 Prior to the issuance of the NTP, D/B CDA Developer may, at its sole option and risk, carry out certain CTRMA activities, including assisting and cooperating with the CTRMA, as it may request, in connection with the closing of the Project financing, including Bond financing and applications for State and federal assistance, by providing any reasonably requested information about D/B CDA Developer's organization and business.

2.2.1.2 From the issuance of NTP through Project Final Acceptance, D/B CDA Developer shall complete and manage the Development Work at a fixed price (with certain limited exceptions thereto set forth in Section 14 of this Agreement) in a manner satisfactory to the CTRMA and in accordance with the Project Schedule, including:

(a) Preparing or causing to be prepared all plans and specifications in accordance with TxDOT and FHWA approvals and other Governmental Approvals, applicable Law, this Agreement and the other Contract Documents, and any amendments thereto;

(b) Acquiring any required D/B CDA Developer Designated ROW and performing coordination services with respect to the CTRMA's or TxDOT's acquisition of any Schematic ROW which has not been acquired as of the date of issuance of NTP;

(c) Performing Utility Adjustment Work in accordance with the Contract Documents;

(d) Obtaining (if not previously obtained by the CTRMA) and complying with all necessary Governmental Approvals;

(e) Completing the Development Work in accordance with the Design Documents and the Project Schedule;

(f) Monitoring and ensuring quality completion by all members of the D/B CDA Developer Group of all aspects of the Development Work;

(g) Providing quality control and material quality assurance with respect to the Development Work, subject to CTRMA quality acceptance, oversight, testing and involvement and directives;

(h) Providing the Payment Bond and the Performance Bond in accordance with this Agreement;

(i) Maintaining or causing to be maintained in place insurance policies which satisfy the insurance requirements set forth in this Agreement;

(j) Warranting the Development Work, to the extent required under this Agreement;

(k) Continuing to assist and cooperate with the CTRMA, as it may request, in connection with the Project financing by providing any reasonably requested information; and

(l) Complying with any requirements of the CTRMA applicable to the Project, that are contained in the Project Development Agreement (the “PDA”) between the CTRMA and TxDOT with respect to the Project, a copy of which is contained in Exhibit D-__.

2.2.2 CTRMA’s Role.

2.2.2.1 Prior to the issuance of NTP, the CTRMA shall have the right to carry out certain financing-related and pre-construction activities, including:

(a) Participating in the negotiation of, and approving, the terms and conditions for the issuance of any Bonds and other financing instruments, including all related documents, that may be issued; and

(b) Acquiring the Schematic ROW.

2.2.2.2 From the date on which the CTRMA issues NTP through Project Final Acceptance, the CTRMA shall carry out certain design and construction-related activities, including:

(a) Undertaking and/or completing any of the activities set forth in Section 2.2.2.1 that are not completed as of the date on which the CTRMA issues NTP.

(b) Coordinating with TxDOT in acquiring title to and, as necessary and appropriate, condemning Final ROW, as required for the Project;

(c) Overseeing the completion of the Development Work in accordance with this Agreement;

(d) Performing design quality acceptance and certain construction quality acceptance, testing and oversight services in connection with the Development Work;

(e) Applying proceeds of the Bonds and any other Project financing toward, among other things, the payments under this Agreement;

(f) Acknowledging the occurrence of Interim Completion, Substantial Completion and Final Acceptance;

(g) Performing quarterly audit of processes, procedures and files to ensure compliance with the Uniform Act and State laws, rules and regulations; and

(h) Administering this Agreement.

2.2.2.3 From and after the commencement of tolling operations of the Project following Interim Completion and Substantial Completion thereof, the CTRMA shall have the right to carry out certain operations activities, including:

(a) Imposing tolls and fixing toll rates for use of the Project;

(b) Applying toll revenues to the purposes and in the priority set forth in a trust indenture and as otherwise permitted under Law;

(c) Administering this Agreement; and

(d) Enforcing the Warranties and any other Project warranties and guarantees.

2.3 Partnering.

2.3.1 Purpose; Scope.

The CTRMA intends to encourage the foundation of a cohesive public/private partnership with D/B CDA Developer and its Subcontractors. The objectives include effective and efficient performance and completion of the Development Work within budget, in accordance with the Project Schedule, and in accordance with the Contract Documents. An integral aspect of the public/private partnering is the resolution of issues in a timely, professional and non-adversarial manner. The parties acknowledge that one of the keys to the success of these major projects is to build trust between the parties through communication and understanding. It is the CTRMA's belief that a strong partnering program will assist in promoting and maintaining an amicable working relationship.

2.3.2 Schedule; Participation.

Pursuant to Technical Provision 1.1.3.3, within 30 Days after issuance of NTP, the D/B CDA Developer shall select a third-party facilitator (with the approval of the CTRMA) to conduct the partnering meetings. All cost associated with the partnering program including the facilitator and meeting space shall be paid by D/B CDA Developer. Partnering meetings may be conducted at the office of the CTRMA or at such location as otherwise agreed upon by the Parties. Persons who should attend the partnering meetings include Key Personnel and executives of the Parties.

2.3.3 Confidentiality.

Subject to the requirements of the Public Information Act, no statements made or materials prepared during or relating to partnering meetings, including any statements made or documents prepared by the facilitator, shall be admissible or discoverable in any judicial or other dispute resolution proceeding.

3. SCOPE OF DEVELOPMENT WORK; ROLE OF THE PARTIES AND LOCAL AGENCIES; EFFECT OF TESTS AND INSPECTIONS.

3.1 Development Work Scope.

The Development Work includes D/B CDA Developer's obligation to furnish a complete design for the Project meeting all requirements of the Contract Documents, to construct the Project as designed and in accordance with all requirements of the Contract Documents and otherwise to comply with all of the requirements in this Agreement. D/B CDA Developer acknowledges that the CTRMA's designs of certain Project elements have been advanced to different stages of development and are generally conceptual in nature and complete enough to support the Environmental Document. The Reference Documents are provided as guidelines and programs to assist D/B CDA Developer in performing the Development Work. D/B CDA Developer acknowledges that D/B CDA Developer is not entitled to rely on and has not relied on (i) the Reference Documents or (ii) any other documents or information provided by the CTRMA, except to the extent specifically permitted in the Contract Documents.

3.2 Project Location and Description.

A general description of the Project is set forth in Section 1 of the Scope of Work, and the Project is described in more detail throughout the Scope of Work.

3.3 Project Management Plan.

D/B CDA Developer shall plan, schedule, and execute all aspects of the Development Work and shall coordinate its activities with all parties who are directly impacted by the Development Work. D/B CDA Developer shall document and report all Development Work in accordance with the requirements set forth herein and in an approved Project Management Plan. Within 30 Days after the issuance of NTP, D/B CDA Developer shall submit the detailed Project Management Plan, which shall update and expand the project management plan contained in D/B CDA Developer's Proposal to meet the requirements contained in Technical Provisions 1 and 2 including provision of a detailed work schedule for the Development Work, to the CTRMA for approval.

3.4 CTRMA's Role.

The CTRMA, or its designee, intends to oversee performance of the Development Work for the purpose of confirming that the Development Work meets the requirements of the Contract Documents. CTRMA responsibilities include design reviews and acceptance, construction inspection and acceptance, oversight of materials, acceptance of the Development Work in accordance with Section 20, and establishment of priorities for the purpose of ensuring timely receipt of revenues. The CTRMA's role in oversight of D/B CDA Developer's design and construction quality is detailed in Technical Provision 2. The CTRMA will also serve as a liaison with regulatory agencies in connection with D/B CDA Developer's application for Environmental Approvals and/or amendments or re-evaluations for which D/B CDA Developer is responsible, provided that the ultimate responsibility for obtaining such Environmental Approvals shall remain with D/B CDA Developer. The CTRMA will provide the CTRMA-Provided Approvals in accordance with the Contract Documents. The CTRMA will assist D/B CDA Developer in efforts to obtain any required TxDOT and FHWA approvals, provided that the ultimate responsibility for such reviews and approvals shall remain with D/B CDA Developer. The CTRMA, or its designee, will also administer this Agreement, including: review and approval of progress payments; Project Schedule review and approval; performance evaluation; Change Order negotiation; and dispute resolution. The CTRMA will designate a Project Engineer to assist the CTRMA with the administration and oversight of the Development Work. The Project Engineer is not authorized to waive any requirements or provisions of this Agreement.

3.5 Local Agency Role.

Elements of the Development Work on local roads may be subject to review, approval, inspection, testing, and/or acceptance by local agencies. In addition, certain environmental mitigation measures identified in the Environmental Document may require coordination with local agencies. D/B CDA Developer shall take such actions as are necessary to obtain all needed

local Governmental Approvals and ensure coordination with local agencies, in each case, as required to undertake and complete the Development Work, but D/B CDA Developer shall not make any commitment or enter into any obligations that will affect or impact the CTRMA or TxDOT without the written consent of the CTRMA and/or TxDOT, as the case may be.

3.6 D/B CDA Developer Obligations.

3.6.1 D/B CDA Developer shall design and construct the Project in conformity with the Basic Configuration and in general conformity with the Schematic Plan, in accordance with all professional engineering principles and construction practices generally accepted in the State as the standard in the industry, in a good and workmanlike manner, free from defects and in accordance with the terms and conditions set forth in the Contract Documents. Except as otherwise specifically provided in the Contract Documents, all materials, services and efforts necessary to achieve Substantial Completion on or before the Completion Deadline and Final Acceptance on or before the Acceptance Deadline shall be D/B CDA Developer's sole responsibility; and the cost of all such materials, services and efforts are included in the Development Price. D/B CDA Developer acknowledges that it shall maintain the Development Work until Substantial Completion, including repair of damage caused by accidents or vandalism, and that the cost of maintenance services for the Project prior to Substantial Completion is included in the Development Price except as otherwise specified in the Contract Documents.

3.6.2 D/B CDA Developer shall furnish all design and other services, provide all supervision, labor, equipment and materials and undertake all efforts necessary or appropriate (excluding only those materials, services and efforts which the Contract Documents specify will be undertaken by other Persons) to construct the Project, achieve Interim Completion on or before the Interim Completion Deadline, achieve Substantial Completion on or before the Completion Deadline and Final Acceptance on or before the Acceptance Deadline and maintain the Development Work during construction. In so doing, D/B CDA Developer shall comply with the requirements of the Contract Documents, the Project Schedule, all Governmental Approvals, the approved Project Management Plan, the approved Design Quality Management Plan, the approved Construction Quality Management Plan, the Quality Assurance Program, the approved Safety and Health Plan and applicable Laws, and shall take into account the boundaries of the Schematic ROW, the Additional Properties and other physical constraints affecting the Project. Unless Utilities are relocated at the expense of a Utility Owner or a local government, D/B CDA Developer shall be responsible for reimbursing any railroad and Utility Owners for Adjustments that they perform. D/B CDA Developer shall also be responsible for coordinating construction and other activities with any railroad and Utility Owners and other contractors involved with the Project, and/or projects adjacent to the Project in order to ensure that the Project is able to open to the public and commence toll revenue service on or before the Completion Deadline.

3.6.3 D/B CDA Developer shall, at all times, provide a Project Manager approved in writing by the CTRMA, in its sole discretion, who will have full responsibility for the prosecution of the Development Work and will act as a single point of contact in all matters on behalf of D/B CDA Developer. D/B CDA Developer shall not change the Project Manager or any other Category A Personnel, as described in Technical Provision 1, except for the reasons specified in Section 19.1.4 (i)–(iii), without the prior written approval of the CTRMA, in its sole discretion. If D/B CDA Developer fails to obtain the CTRMA’s approval of a replacement within 30 Days after the existing Project Manager or Category A Person leaves, the CTRMA shall have the right to withhold payments under this Agreement until such time as an approved replacement has started work. In such event, the provisions of Sections 19.1.4 shall also apply.

3.6.4 D/B CDA Developer shall obtain and pay the cost of obtaining all Governmental Approvals except CTRMA-Provided Approvals. Prior to beginning any construction activities for any portion of the Project, D/B CDA Developer shall furnish the CTRMA with fully executed copies of all Governmental Approvals required for such portion of the Project and provide the CTRMA with all bonds required under this Agreement.

3.6.5 Except as provided in Sections 7.5.2 and 7.6, D/B CDA Developer shall, at its expense, undertake and properly perform all actions required by, and all actions necessary to maintain in full force and effect, all Governmental Approvals, including performance of all environmental mitigation and compliance measures required by the Contract Documents, Environmental Approvals and applicable Law.

3.6.6 D/B CDA Developer shall perform construction inspection, material sampling and testing in accordance with the Contract Documents and D/B CDA Developer’s approved Construction QMP and the CTRMA’s Quality Assurance Program.

3.6.7 D/B CDA Developer shall provide and maintain field offices as described in Technical Provision 1, which facilities shall be for the joint use of D/B CDA Developer, the CTRMA, the Project Engineer and other Persons reasonably designated by the CTRMA.

3.6.8 D/B CDA Developer shall cooperate with the CTRMA and its agents and designated representatives in connection with all matters relating to the Project, including review of the design of the Project and conducting inspections during the construction of the Project.

3.6.9 D/B CDA Developer shall mitigate delay to the Project and mitigate damages due to delay in all circumstances, at no cost to the CTRMA except as otherwise specified herein, to the extent reasonably possible, including by resequencing, reallocating or redeploying its forces to other work, and obtaining additional personnel, equipment and materials, as necessary.

3.6.10 D/B CDA Developer shall, at all times, deliver design submittals in accordance with the Scope of Work and the Technical Provisions. D/B CDA Developer shall deliver to the

CTRMA a written certification by the DQCM of the Final Design Plans for the Project in accordance with Technical Provision 2. If D/B CDA Developer fails to deliver such certification and approval to the CTRMA in accordance with the provisions of Technical Provision 2, the CTRMA shall have the right to withhold payments under this Agreement until such time as the Final Design Plans have been approved by the DQCM and the CTRMA, in its design quality acceptance role, in accordance with Technical Provision 2.

3.6.11 D/B CDA Developer shall, at its expense, provide for acquisition and relocation services to implement the acquisition of D/B CDA Developer Designated ROW, including the actual real property cost.

3.7 Effect of Reviews, Inspections, Tests and Approvals.

D/B CDA Developer shall not be relieved of any obligations to perform the Development Work in accordance with the Contract Documents by reviews, tests, inspections or approvals performed by any Persons, or by any failure of any Person to take such action. The reviews, inspections, tests and approvals conducted or provided by the CTRMA and others do not constitute approval of the materials or Development Work reviewed, tested or inspected, and the CTRMA may reject or accept any Development Work or materials, request modifications or corrective actions, and/or identify additional Development Work which must be done to bring the Project into compliance with the requirements of the Contract Documents at any time prior to Project Final Acceptance, whether or not previous reviews, inspections, tests or approvals were conducted by any such Persons; provided that CTRMA may not require D/B CDA Developer to change Development Work to comply with requirements of the Contract Documents if CTRMA has previously approved a specific deviation from such requirements in writing.. Notwithstanding any design oversight, construction oversight, environmental oversight or other Project oversight activities by the CTRMA or any of the Indemnified Parties, the DQCM, the MQAM, or the Resident Engineer, D/B CDA Developer shall be solely responsible for the quality, safety and operability of the Project, through its compliance with the requirements of the Contract Documents, the Governmental Approvals and applicable Law.

4. INFORMATION SUPPLIED TO D/B CDA DEVELOPER; ACKNOWLEDGMENT BY D/B CDA DEVELOPER.

4.1 Information Supplied.

Exhibit D to this Agreement contains the list of Reference Documents that have been made available to D/B CDA Developer, and D/B CDA Developer acknowledges and agrees that it has reviewed all such documents.

4.2 Acknowledgment by D/B CDA Developer.

D/B CDA Developer agrees that it has full responsibility for the design of the Project and that D/B CDA Developer will furnish the design of the Project regardless of the fact that certain conceptual design work occurred and was provided to D/B CDA Developer prior to the Effective Date. D/B CDA Developer agrees that it has diligently reviewed and verified the Schematic Plan and the Existing Design Plans for errors, inadequacies, inaccuracies, omissions, inconsistencies or other defects which may affect constructability, durability, conformance with acceptable design standards and efficient and safe operation and has incorporated into the Development Price all costs associated with Development Work to correct said errors, inadequacies, inaccuracies, omissions, inconsistencies and other defects. D/B CDA Developer specifically acknowledges and agrees that:

(a) The Schematic Plan and the Existing Design Plans are preliminary and conceptual in nature.

(b) D/B CDA Developer is not entitled to rely on any documents or information provided by the CTRMA, including the RFDP Documents and the Reference Documents, except for overall conceptual guidance and then only to the extent expressly provided to the contrary herein.

(c) Subject to the oversight rights of the CTRMA under this Agreement, D/B CDA Developer shall correct any errors, inadequacies, inaccuracies, omissions and defects in the Schematic Plan and the Existing Design Plans which can be corrected through the design and/or construction process and implement field changes serving the same purpose so long as such correction does not result in a material change in the Basic Configuration.

(d) The CTRMA shall have no liability for errors, inadequacies, inaccuracies, omissions and defects in the Schematic Plan or the Existing Design Plans. The foregoing shall not be deemed to limit the CTRMA's obligations with respect to Differing Site Conditions as set forth in Section 14.9, or D/B CDA Developer's right to receive any available insurance proceeds.

(e) The Warranties and indemnities hereunder given by D/B CDA Developer cover errors, omissions and defects in the Project, including those that may be related to errors, inadequacies, inaccuracies, omissions and defects in the Schematic Plan and the Existing Design Plans.

(f) D/B CDA Developer has independently determined that the Schematic Plan represents a feasible concept for the design of the Project which can and shall be used as the basis for the Project Design to be furnished by D/B CDA Developer, and agrees that it shall have no right to seek additional compensation or a time extension as a result of errors, omissions,

inadequacies or inaccuracies in the Schematic Plan and the Existing Design Plans, except as specifically permitted by Section 14.

(g) THE CTRMA DOES NOT REPRESENT OR WARRANT THAT THE INFORMATION CONTAINED IN THE SCHEMATIC PLAN, EXISTING DESIGN PLANS AND OTHER REFERENCE DOCUMENTS IS EITHER COMPLETE, CORRECT OR ACCURATE OR THAT SUCH INFORMATION IS IN CONFORMITY WITH THE REQUIREMENTS OF THE ENVIRONMENTAL APPROVALS, APPLICABLE LAW OR OTHER CONTRACT DOCUMENTS. D/B CDA DEVELOPER SHALL BE SOLELY RESPONSIBLE FOR VERIFYING THE ACCURACY AND COMPLETENESS OF SUCH INFORMATION AND SHALL HAVE NO RECOURSE AGAINST THE CTRMA OR ITS AGENTS OR REPRESENTATIVES IF SUCH INFORMATION AND/OR ANY ASPECT OF THE SCHEMATIC PLAN, EXISTING DESIGN PLANS OR OTHER REFERENCE DOCUMENTS PROVES TO BE INACCURATE, INCOMPLETE OR NOT IN CONFORMITY WITH THE ENVIRONMENTAL APPROVALS, APPLICABLE LAW OR OTHER CONTRACT DOCUMENTS.

(h) The CTRMA shall not be responsible or liable in any respect for any Loss suffered by any member of the D/B CDA Developer Group by reason of any use of any information contained in the Schematic Plan or the Existing Design Plans or any action or forbearance in reliance thereon. D/B CDA Developer further acknowledges and agrees that (i) if, and to the extent that any member of the D/B CDA Developer Group uses any of said information in any way, such use is made on the basis that D/B CDA Developer, not the CTRMA, has approved of such use and information and is responsible for said information, (ii) D/B CDA Developer is capable of conducting and is obligated hereunder to conduct any and all studies, analyses and investigations as it deems advisable to verify or supplement said information, and (iii) any use of said information is entirely at D/B CDA Developer's own risk and at its own discretion.

(i) The Schematic Plan is hereby incorporated by reference herein to the extent, and only to the extent, that it sets forth the Basic Configuration of the design of the Project. Accordingly, in general, D/B CDA Developer may deviate from the Schematic Plan as it deems advisable, provided that it must obtain prior written approval by the CTRMA and/or a Change Order hereunder with respect to any material change by D/B CDA Developer from the Basic Configuration. Furthermore, D/B CDA Developer's right to deviate from the Schematic Plan and the Basic Configuration is subject to D/B CDA Developer's compliance with all applicable requirements of the Contract Documents.

(j) The topography mapping, Utility characteristics (including ownership, types, sizes and locations) and the exploratory geotechnical investigations presented in the Reference Documents may or may not represent the actual subsurface conditions along the

present alignment of the Project. Except to the extent that Section 14 provides for an increase in the Development Price and/or extensions of the Interim Completion Deadline, Completion Deadline and/or Acceptance Deadline with respect to such matter, the CTRMA accepts no responsibility for the accuracy of the topographical mapping, Utility information or geotechnical information provided, or for information concerning the location or extent of Hazardous Materials, archaeological features, endangered species or vegetation or D/B CDA Developer's interpretation of any information provided. Furthermore, D/B CDA Developer acknowledges and agrees that the existing surface conditions, including Utility characteristics as specified above, may have changed or may be different from the surface conditions depicted in the Reference Documents. Except to the extent, if any, that Section 14 provides for an increase in the Development Price and/or extensions of the Interim Completion Deadline, Completion Deadline and/or Acceptance Deadline with respect to such matter, the CTRMA accepts no responsibility for the accuracy of any depiction of surface conditions in the Reference Documents or D/B CDA Developer's interpretation of any information provided.

(k) The Proposal, to the extent that it meets or exceeds the requirements of the other Contract Documents, as provided in Section 1.2.1(c) hereof, imposes obligations on D/B CDA Developer hereunder, provided such Proposal shall not supercede a higher standard or obligation contained elsewhere in the Contract Documents.

(l) D/B CDA Developer is obligated to comply with any TxDOT approval or other TxDOT requirements applicable to the Project, the CTRMA, or D/B CDA Developer contained in or required by the PDA.

4.3 Changes in Basic Configuration.

4.3.1 D/B CDA Developer shall not make any material change in the Basic Configuration except as approved by the CTRMA and authorized by a Change Order. Except as set forth in Section 4.3.3, a Change Order is required regardless of the reason underlying the change and regardless of whether the change increases, decreases or has no effect on D/B CDA Developer's costs. Any such Change Order shall be subject to the conditions and requirements contained in this Section 4.3, as well as the conditions and requirements which are generally applicable to Change Orders in Section 14 and subject to the limitations contained in Section 7.6.

4.3.2 D/B CDA Developer shall be responsible for any cost increases and/or delays which affect the duration of a Critical Path activity resulting from changes in requirements and obligations of D/B CDA Developer relating to the Project due to inaccuracies in the Schematic Plan. Any changes in the Basic Configuration shall be the responsibility of D/B CDA Developer with the exception of a CTRMA-Directed Change involving more than \$50,000 in additional costs or involving a delay to a Critical Path.

4.3.3 No Change Order shall be required for any non-material changes in the Basic Configuration which have been approved by the CTRMA, in writing. D/B CDA Developer acknowledges and agrees that constraints set forth in the CTRMA-Provided Approvals, TxDOT Standards and TxDOT Specifications and other Contract Documents, as well as site conditions and the Schematic Plan, will impact D/B CDA Developer's ability to make changes in the Basic Configuration.

5. TIME WITHIN WHICH PROJECT SHALL BE COMPLETED; PROJECT SCHEDULE AND PROGRESS.

5.1 Time of Essence.

Time is of the essence in connection with performance by D/B CDA Developer of its obligation to meet the Completion Deadline under Section 5.2 of this Agreement.

5.2 Guaranteed Completion.

5.2.1 Completion Deadline.

5.2.1.1 Subject to the adjustments of the Completion Deadline, Interim Completion Deadline, and Acceptance Deadline as provided in the Contract Documents, D/B CDA Developer shall achieve Substantial Completion of the Project no later than 955 Days after the issuance of NTP.

5.2.2 Interim Completion Deadline.

Subject to the adjustments of the Completion Deadline, Interim Completion Deadline, and Acceptance Deadline as provided in the Contract Documents, D/B CDA Developer shall achieve Interim Completion of the Interim Development Work by no later than 487 Days after the issuance of NTP. The deadline for Interim Completion is referred to herein as "**Interim Completion Deadline.**"

5.2.2.1 The deadline for Substantial Completion set forth above, as it may be extended hereunder, is referred to herein as the "**Completion Deadline.**"

5.2.3 Acceptance Deadline.

D/B CDA Developer shall achieve Final Acceptance of the Project within 120 Days after Substantial Completion of the Project. The deadline for Final Acceptance of the Project, as such deadline may be extended hereunder, is referred to herein as the "**Acceptance Deadline.**"

5.2.4 No Time Extensions.

Except as otherwise specifically provided in Section 14, the CTRMA shall have no obligation to extend the Interim Completion Deadline, Completion Deadline or Acceptance Deadline, and D/B CDA Developer shall not be relieved of its obligations to achieve (a) the milestones described in the Project Schedule; (b) Interim Completion of the Interim Development Work by the Interim Completion Deadline; (c) Substantial Completion of the Project by the Completion Deadline; or (d) Final Acceptance by the Acceptance Deadline.

5.3 Project Schedule.

The planning, design, construction, development and completion of the Development Work shall be undertaken and completed in accordance with the Project Schedule approved by the CTRMA in writing, as revised and updated from time to time. The Project Schedule shall be used by the Parties for planning and monitoring the progress of the Development Work and as the basis for determining the amount of monthly progress payments to be made to D/B CDA Developer.

5.4 Project Schedule Submittals.

D/B CDA Developer shall deliver the Project Schedule submittals described in Technical Provision 5.

5.5 Recovery Schedule.

5.5.1 In accordance with Technical Provision 5, a Recovery Schedule is required at the request of the CTRMA, whenever D/B CDA Developer's Development Work is delayed on any Critical Path deadline date for a period which exceeds the lesser of (a) 60 Days in the aggregate or (b) that number of Days which, in the aggregate, is equal to 10% of the Days remaining until the Completion Deadline for the Project.^{1/} In such event, D/B CDA Developer shall include, as part of the next Monthly Update revision submittal, a Recovery Schedule demonstrating D/B CDA Developer's program and proposed plan to address Project Schedule delays in order to achieve Interim Completion of the Interim Development Work by the Interim Completion Deadline, Substantial Completion of the Project by the Completion Deadline and Final Acceptance of the Project by the Acceptance Deadline.

^{1/} For example, if there are 70 Days remaining to the Completion Deadline for the Project, 10% of that number would be 7 Days. In that case, D/B CDA Developer would be obligated to provide a Recovery Schedule if D/B CDA Developer was behind schedule by more than 7 Days.

5.5.2 All costs incurred by D/B CDA Developer in preparing and implementing the Recovery Schedule shall be borne by D/B CDA Developer and shall not result in a change to the Development Price, except to the extent permitted in accordance with Section 14 or Section 5.5.3.

5.5.3 If a Recovery Schedule would be required in order to achieve Interim Completion of the Interim Development Work by the Interim Completion Date or Substantial Completion of the Project by the Completion Deadline as the result of an event described in Section 14 and D/B CDA Developer would be entitled under this Agreement to an increase in the Development Price to implement such Recovery Schedule, the CTRMA shall have the right, in its sole discretion, to decide whether to allow a time extension or to require implementation of the Recovery Schedule without such time extension, provided that provision by D/B CDA Developer of such a Recovery Schedule is commercially reasonable. In such event, D/B CDA Developer shall submit to the CTRMA at least two alternative Change Order forms, one of which shall include a Recovery Schedule and show the proposed Acceleration Costs associated with the Recovery Schedule, and the other of which shall provide for an extension of the Interim Completion Deadline or Completion Deadline without any increase in the Development Price (except as provided in Section 14). If the CTRMA elects to implement the Recovery Schedule in lieu of a time extension, the CTRMA shall issue a Change Order increasing the Development Price to account for and include the additional Acceleration Costs. If it is not feasible to regain the time lost under the Project Schedule so as to meet the Interim Completion Deadline or Completion Deadline or if D/B CDA Developer believes that the Acceleration Costs associated with such a recovery are prohibitive, then D/B CDA Developer shall recommend a time extension in the Change Order form.

5.5.4 If a Recovery Schedule is required hereunder, D/B CDA Developer shall provide such Recovery Schedule in writing within ten (10) Business Days of CTRMA's request..

5.5.5 Notwithstanding anything in the Contract Documents to the contrary, there shall be no Event of Default for D/B CDA Developer's unexcused delay in achieving the Interim Completion Deadline, Completion Deadline or Acceptance Deadline by the dates allowed under the Contract Documents or D/B CDA Developer's provision of a schedule showing an unexcused delay in achieving any such deadlines so long as (i) such delay is no greater than 180 Days and (ii) notwithstanding the liability cap contained in Section 18.3 hereof, the D/B CDA Developer pays Liquidated Damages to the CTRMA for each Day of actual delay beyond the applicable completion or acceptance deadline. Notwithstanding any approval rights that the CTRMA may have concerning a Recovery Schedule or anything else in the Contract Documents to the contrary, the amount of recovery and D/B CDA Developer's means and methods of recovery, shall be in the D/B CDA Developer's discretion so long as the D/B CDA Developer's unexcused delay meets the requirements set forth in the preceding sentence.

5.6 Float.

All Float contained in the Project Schedule shall be considered a Project resource available to either Party or both Parties, on an as-needed basis, to achieve Project Schedule milestones, interim completion dates, Substantial Completion by the Completion Deadline and/or Final Acceptance by the Acceptance Deadline. All Float shall be shown in the Project Schedule on each Project Schedule submittal. Identification of (or failure to identify) Float on the schedule shall be evaluated by the CTRMA in determining whether to approve the Project Schedule. Once identified, Float shall be monitored, accounted for and maintained in accordance with critical path methodology.

6. RIGHT OF WAY SERVICES.

6.1 Acquisition of Final ROW.

Acquisition of Final ROW shall be undertaken and completed in accordance with the requirements and obligations of this Section 6, the Scope of Work and, where applicable, Technical Provision 7.

6.2 Costs of Acquisitions.

6.2.1 The parties hereto acknowledge that, as between the CTRMA and D/B CDA Developer, CTRMA shall be responsible for the purchase price for (i) all parcels, exclusive of Existing Utility Property Interests, within the Schematic ROW, (ii) any real property outside of the Schematic ROW that must be acquired due to a CTRMA-Directed Change, and (iii) the Mitigation Site(s), and shall be responsible for all right of way engineering, administration, acquisition and related services for all such parcels, including all costs and expenses of negotiation and condemnation proceedings. Only TxDOT or the CTRMA may initiate condemnation proceedings.

6.2.2 D/B CDA Developer shall be responsible for all costs and expenses of performing the right of way services described in the Scope of Work and Technical Provision 7 in connection with acquiring all D/B CDA Developer-Designated ROW, Existing Utility Property Interests and New Utility Property Interests including the purchase price, and all costs and expenses of obtaining necessary Environmental Approvals, right of way engineering, administration, acquisition and related services. D/B CDA Developer shall pay all costs and expenses of D/B CDA Developer and all reasonable costs and expenses of the CTRMA (and TxDOT, if applicable) in connection therewith, whether the acquisition is by negotiation or condemnation, the reasonable costs for private counsel retained by the CTRMA (or TxDOT) for such purposes. If the CTRMA (or TxDOT) incurs any such costs and expenses on D/B CDA Developer's behalf, the CTRMA (or TxDOT) may submit any invoices for such costs and expenses to D/B CDA Developer, in which case D/B CDA Developer shall pay the invoices

prior to delinquency. If the CTRMA (or TxDOT) pays any such costs and expenses on D/B CDA Developer's behalf, D/B CDA Developer shall reimburse the CTRMA (or TxDOT, as applicable) within 10 Days of the submittal to D/B CDA Developer of an invoice for such costs and expenses. Alternatively, the CTRMA may deduct the amount of such costs and expenses from any sums owed by the CTRMA to D/B CDA Developer pursuant to this Agreement.

6.2.3 All costs and expenses for the acquisition of any temporary right or interest in real property that D/B CDA Developer determines necessary or desirable for its convenience in constructing the Project, such as for work space, contractor laydown areas, materials storage areas or temporary utility relocation, or for any permanent interest in real property that D/B CDA Developer may wish to acquire for its convenience which will not be part of the Final ROW, shall be D/B CDA Developer's sole responsibility, to be undertaken at D/B CDA Developer's sole cost and expense. The CTRMA shall have no obligations or responsibilities with respect to the acquisition, maintenance or disposition of such rights or interests, and is not required to use its powers of eminent domain in connection therewith. D/B CDA Developer will comply with all applicable Laws in acquiring and maintaining or disposing of any such property rights or interests. D/B CDA Developer shall cause the documentation of any such property interest to contain the grantor's express acknowledgment that the CTRMA shall have no liability with respect thereto.

6.2.4 D/B CDA Developer shall be responsible for all costs and expenses incurred by Utility Owners in acquiring New Utility Property Interests, excluding any such costs or expenses attributable to any Betterments.

6.3 Limiting Acquisition of Additional Properties.

D/B CDA Developer's recommendation regarding the acquisition of Additional Properties shall be subject to the following:

6.3.1 D/B CDA Developer shall use its best efforts to restrict and limit additional costs to the Project associated with CTRMA-Directed Changes. To the extent reasonably possible, consideration shall be given to using retaining walls or making other engineering adjustments as an alternative to the acquisition of Additional Properties. If it would be possible to use a retaining wall or other engineering adjustment to accommodate a CTRMA-Directed Change as an alternative to the acquisition of Additional Properties, D/B CDA Developer shall support its recommendation to acquire Additional Properties in lieu of constructing a retaining wall or otherwise modifying the Schematic Plan with an analysis demonstrating cost or time savings or other justification.

6.3.2 D/B CDA Developer shall not be entitled to any time extensions or cost increases for acquisition of D/B CDA Developer-Designated ROW unless there is a CTRMA-Caused Delay pursuant to subparagraph (b) of the definition of that term.

6.3.3 In all cases, D/B CDA Developer shall exercise particular care to avoid acquisition of land owned by a public entity and used for a use inconsistent with highway use.

6.4 Representations by D/B CDA Developer.

No member of the D/B CDA Developer Group shall represent him or herself as an agent of the CTRMA or TxDOT while communicating with any of the owners or occupants of the Final ROW, any property in which D/B CDA Developer seeks to obtain a temporary right or interest or a permanent right that will not be part of the Final ROW, or at any other time in connection with performing the services described in Section 7 of the Scope of Work and Technical Provision 7. No member of the D/B CDA Developer Group shall appear before any owner or occupant of any Final ROW for the purposes of completing any of the documentation required under Technical Provision 7 without first presenting to that owner or occupant a letter, executed by the CTRMA or TxDOT, stating that the D/B CDA Developer Group is working for the CTRMA or TxDOT, as the case may be, for the purposes of the acquisition of the Final ROW; provided, however, that the execution of, and approvals concerning, any relevant documentation shall be made by the CTRMA. The D/B CDA Developer Group shall not represent itself as an agent for the CTRMA or TxDOT. Each member of the D/B CDA Developer Group shall at all times conform with applicable Law (including, to the extent applicable, the Uniform Act) in all communications and actions with the owners or the occupants of the Final ROW or any other real property in which D/B CDA Developer seeks to obtain any right or interest. D/B CDA Developer shall send to each affected property owner by certified mail, return receipt requested, a copy of the latest version of the State of Texas Landowner's Bill of Rights as found on the website of the Office of the Attorney General of Texas.

6.5 Negotiations and Condemnation Proceedings Relative to the Acquisition of D/B CDA Developer Designated ROW.

Negotiations for any Final ROW shall be undertaken as set forth in the Scope of Work and Technical Provision 7. D/B CDA Developer shall obtain the CTRMA's written approval of any offer to be extended to an owner of any interest in D/B CDA Developer Designated ROW prior to making such offer, in accordance with Section 7 of the Scope of Work and Technical Provision 7. D/B CDA Developer shall notify the CTRMA in writing, for its concurrence, of the failure of negotiations with respect to the acquisition of any parcel of D/B CDA Developer Designated ROW and shall submit to the CTRMA for approval a condemnation package for the parcel as described in Technical Provision 7. The CTRMA shall have 15 Business Days either to (a) approve the package or (b) provide its comments and/or request for additional information to

D/B CDA Developer if the CTRMA determines that the condemnation package is incomplete or otherwise deficient. D/B CDA Developer shall incorporate any suggested changes and provide any additional information requested by the CTRMA and shall resubmit the condemnation package to the CTRMA for review and approval. The CTRMA shall have 10 Business Days to approve or provide comments to D/B CDA Developer on any resubmittals. Failure of the CTRMA to provide D/B CDA Developer with its approval or, in the event the condemnation package is incomplete or otherwise deficient, its comments and/or request for additional information, within 15 Business Days of the CTRMA's receipt of a condemnation packet shall be considered a CTRMA-Caused Delay. Condemnation proceedings for any D/B CDA Developer Designated ROW will be initiated by the CTRMA, within a reasonable time following approval by the CTRMA of a complete condemnation package for the parcel. At no additional cost to the CTRMA, D/B CDA Developer shall cooperate in all respects with the CTRMA and TxDOT and shall cause all expert witnesses, appraisers, surveyors and other consultants utilized by D/B CDA Developer in connection with the acquisition of the D/B CDA Developer Designated ROW subject to condemnation to be available to and assist the CTRMA and TxDOT in connection with the condemnation proceedings, including discovery, depositions, pre-trial preparation and trial testimony. Counsel engaged for negotiations and/or condemnation proceedings shall be designated by the CTRMA. Delays to the Critical Path due to failure of the CTRMA to make D/B CDA Developer Designated ROW available within 240 days after approval of a condemnation packet shall be considered a CTRMA-Caused Delay. The term "make available", as used herein, shall mean to make available for (a) relocation of occupants and personal property, for occupied parcels, (b) demolition, for unoccupied, improved parcels, or (c) construction, for unoccupied, unimproved parcels.

6.6 Physical Possession of Final ROW; Failure by CTRMA to Make Schematic ROW Available .

The CTRMA shall notify D/B CDA Developer of the availability of Schematic ROW, and provide access thereto, within five (5) Business Days after the CTRMA has received access to such Final ROW. D/B CDA Developer shall be responsible for being informed of and complying with any access restrictions that may be set forth in any documents granting access to any Schematic ROW, provided that the CTRMA has provided such documents to D/B CDA Developer. Upon obtaining knowledge of any anticipated delay in the dates for acquisition of any Schematic ROW, the Party obtaining knowledge shall promptly notify the other party in writing. In such event, D/B CDA Developer shall immediately determine whether the delay impacts the Critical Path and, if so, to what extent it might be possible to avoid such delay through alternative construction methods or otherwise. D/B CDA Developer shall promptly meet with the CTRMA to determine the best course of action and prepare a written report setting forth its recommendations, which recommendations shall be subject to the written approval of the CTRMA. Notwithstanding anything in this Agreement to the contrary, D/B CDA Developer may not make a claim for a Change Order to extend the Completion Deadline or the Acceptance

Deadline unless the CTRMA fails to make a parcel of Schematic ROW available for construction to D/B CDA Developer within 180 Days of the issuance of NTP and then only if such failure has a material adverse effect on the Critical Path. Any such failure by the CTRMA to make Schematic ROW available within 180 Days of issuance of NTP shall be considered a CTRMA Caused Delay. In no event shall D/B CDA Developer be entitled to a Change Order to increase the Development Price as a result of CTRMA's failure to make Schematic ROW available for construction to D/B CDA Developer. In no event shall D/B CDA Developer be entitled to a Change Order to increase the Development Price or extend the Interim Completion Deadline, the Completion Deadline or the Acceptance Deadline as a result of D/B CDA Developer's failure to make available any D/B CDA Developer-Designated ROW. All D/B CDA Developer - Designated ROW will be acquired in accordance with the procedures described in Technical Provision 7.

6.7 Rights of Early Access.

To the extent that D/B CDA Developer has not been provided with access to portions of the Schematic ROW prior to the date set forth on the Project Schedule, D/B CDA Developer shall work around such Schematic ROW with the goals of minimizing delay to the completion of the Project. Except for delays caused by the type of event described in clause (b) or clause (c) of the definition of "CTRMA-Caused Delay," D/B CDA Developer shall not be entitled to any time extension for delays caused by the failure or inability of the CTRMA to provide Schematic ROW. Where D/B CDA Developer makes a written request for access or rights of entry for any Schematic ROW for which access has not yet been acquired, D/B CDA Developer may, with the CTRMA's written consent, negotiate with property owners or occupants for early access or temporary use of land, provided there is no violation of applicable Law. D/B CDA Developer's negotiations with property owners or occupants for early rights-of-entry shall occur only under such terms and conditions as are stipulated by the CTRMA, with the proviso that the CTRMA's consent may be withheld or withdrawn at any time, in the CTRMA's sole discretion. The CTRMA shall not be bound by the terms and conditions agreed upon by D/B CDA Developer and any property owner or occupant until such time as the CTRMA has expressly so indicated in writing (and, then, only to the extent expressly set forth therein).

7. COMMENCEMENT OF CONSTRUCTION; CONSTRUCTION PROCEDURES; HAZARDOUS MATERIALS; NEW ENVIRONMENTAL APPROVALS.

7.1 Commencement of Construction.

D/B CDA Developer shall not commence construction of any portion of the Project prior to occurrence of all the following events, except with the prior written approval of the CTRMA, in its sole discretion:

7.1.1 The CTRMA shall have approved (a) the Safety and Health Plan; (b) the Hazardous Materials Management Plan; and (c) the Construction QMP.

7.1.2 All Governmental Approvals necessary for construction of the applicable portion of the Project shall have been obtained and all conditions of such Governmental Approvals which are a prerequisite to commencement of such construction shall have been performed.

7.1.3 All required insurance and bonds shall remain in full force and effect.

7.1.4 The CTRMA (either directly or through D/B CDA Developer) shall have acquired the real property upon which the construction will be conducted or the CTRMA or D/B CDA Developer shall have obtained approval to enter into physical possession of the property upon which work will be performed, including, where necessary, approval to enter by means of a right of entry; provided, however, that D/B CDA Developer shall not refrain from commencing construction on any portion of the Project based on any failure to obtain physical possession of one or more properties required for construction elsewhere on the Project.

7.1.5 D/B CDA Developer shall have completed all required investigations to establish and confirm the existence and location of Utilities in such portion of the Project.

7.1.6 The CTRMA shall have issued NTP for the Project.

7.1.7 D/B CDA Developer shall have submitted the Preliminary (30%) Design Submittal for the entire Project and such submittal shall have been accepted by the CTRMA in accordance with Technical Provision 2, including an adequate response by D/B CDA Developer to all CTRMA comments.

7.1.8 Except as otherwise provided in Technical Provision 2.3.11 regarding Early Start of Construction, the Design Documents for the applicable portion of the Project shall have been accepted by the CTRMA in accordance with Technical Provision 2, and shall have been through the Design QMP process.

7.1.9 D/B CDA Developer shall have met any other requirement specified in Technical Provisions 2 and 23 for Start of Construction.

7.2 Supervision and Construction Procedures.

7.2.1 D/B CDA Developer shall be solely responsible for and have control over construction means, methods, techniques, sequences, procedures and Site safety and for coordinating all portions of the Development Work under the Contract Documents, subject, however, to all requirements contained in the Contract Documents.

7.2.2 As between D/B CDA Developer and the CTRMA, D/B CDA Developer shall be solely responsible for implementing, maintaining and supervising the approved Safety and Health Plan in accordance with Technical Provision 25. D/B CDA Developer shall take all reasonable precautions and be solely responsible for the safety of, and shall provide protection to prevent damage, injury or loss to: (a) all employees of D/B CDA Developer and its Subcontractors performing the Development Work and other persons who are on the Site or would reasonably be expected to be affected by the Development Work; (b) the Development Work and materials and equipment to be incorporated therein; and (c) all other property within or adjacent to the Site; provided that D/B CDA Developer's responsibilities under this section are limited to those risks associated directly or indirectly with the Development Work.

7.2.3 D/B CDA Developer shall use commercially reasonable efforts to cause all of its activities and the activities of its employees, agents, officers and Subcontractors and all other Persons for whom D/B CDA Developer may be legally or contractually responsible to be undertaken in a manner that will minimize the effect on surrounding property and the public.

7.3 Inspection and Testing.

7.3.1 D/B CDA Developer shall perform the inspection, sampling and testing necessary to comply with its obligations under the Contract Documents, in accordance with its approved Construction QMP and the Construction Quality Assurance Program. At all points in performance of the Development Work at which specific inspections, acceptances or approvals by the CTRMA are required by the Contract Documents, D/B CDA Developer shall not proceed beyond that point until the CTRMA has completed such inspection, acceptance, or approval or waived its right to inspect, accept or approve, which waiver shall be in writing. Inspections shall be performed in accordance with the time limits specified in the Construction QMP and the Construction Quality Assurance Program.

7.3.2 As part of the CTRMA's Construction Quality Acceptance and oversight role as described in Technical Provision 2, all materials and each part or detail of the Development Work shall also be subject to inspection and testing by the CTRMA. When any Governmental Entity, Utility Owner or railroad is to accept or pay for a portion of the cost of the Development Work, its respective representatives have the right to inspect the work. Such inspection does not make such Person a party to this Agreement nor will it change the rights of the parties hereto. D/B CDA Developer hereby consents to such inspection and testing.

7.3.3 At all times before Final Acceptance, D/B CDA Developer shall remove or uncover such portions of the finished construction Development Work as directed by the CTRMA. After examination by the CTRMA, D/B CDA Developer shall restore the Development Work to the standard required by the Contract Documents. If the Development Work exposed or examined is not in conformance with the requirements of the Contract

Documents, then the cost of uncovering, removing and restoring the Development Work and of recovery of any delay to any Critical Path occasioned thereby shall be at D/B CDA Developer's expense. Furthermore, any Development Work done or materials used without adequate notice to and opportunity for prior inspection by the CTRMA, as required in Technical Provision 2, may be ordered uncovered, removed or restored at D/B CDA Developer's expense, even if the Development Work proves acceptable and in conformance after uncovering. Except with respect to Development Work done or materials used as described in the preceding sentence, if Development Work exposed or examined under this Section 7.3.3 is in conformance with the requirements of the Contract Documents, then any delay in any Critical Path from uncovering, removing and restoring Development Work shall be considered a CTRMA-Caused Delay, and D/B CDA Developer shall be entitled to a Change Order for the cost of such efforts and recovery of any delay to any Critical Path occasioned thereby, subject to the provisions of Section 14 hereof.

7.4 Correction of Nonconforming Work.

7.4.1 Subject to the CTRMA's unilateral right to accept or reject Nonconforming Work, rejected Nonconforming Work shall be removed and replaced so as to be acceptable to the CTRMA, at D/B CDA Developer's expense; and D/B CDA Developer shall promptly take all action necessary to prevent similar deficiencies from occurring in the future. The fact that the CTRMA may not have discovered the Nonconforming Work shall not constitute an acceptance of such Nonconforming Work. If D/B CDA Developer fails to correct any Nonconforming Work, or fails to provide an acceptable schedule to complete such Nonconforming Work and then begins such work, within five (5) Days of receipt of notice from the CTRMA requesting correction, then the CTRMA may (i) impose Liquidated Damages of \$2,500 per day until D/B CDA Developer corrects such Nonconforming Work or provides an acceptable schedule for its completion, (ii) issue a stop work order until such correction is made or acceptable schedule for completion is provided, and/or (iii) cause the Nonconforming Work to be remedied or removed and replaced and may deduct the cost of doing so from any moneys due or to become due D/B CDA Developer and/or obtain reimbursement from D/B CDA Developer for such cost (plus interest thereon at the maximum rate allowable under applicable Law). The procedures for correction of Nonconforming Work set forth in the Construction QMP shall be consistent with the requirements of this Section 7.4.

7.4.2 The CTRMA may, but shall not be obligated to, accept any Nonconforming Work without requiring it to be fully corrected. In such event, the CTRMA shall be entitled to reimbursement of a portion of the Development Price equal to the greater of (a) the diminution in value of the Project attributable to the Nonconforming Work, including the present value of future maintenance and repair costs that the CTRMA anticipates may be required as a result of the nonconformity, and (b) the difference between the cost of performing the work in question in accordance with the Contract Documents and the actual cost of performing the Nonconforming

Work. In the event that CTRMA determines that (b) is greater than (a) in the previous sentence, then CTRMA shall allow D/B CDA Developer the option (exercisable within ten (10) Business Days of written notice from CTRMA of such determination) to provide reimbursement or to correct the Non-Conforming Work, at D/B CDA Developer's expense. Such reimbursement by D/B CDA Developer shall be made within ten (10) Days of the CTRMA's submittal to D/B CDA Developer of an invoice therefor and shall accrue interest at the maximum rate allowable under applicable Law. Alternatively, the CTRMA may deduct the amount owing from any sum owed by the CTRMA to D/B CDA Developer pursuant to this Agreement. Where applicable, the CTRMA shall apply TxDOT Standard Specifications criteria in determining the amount of reduction in the Development Price related to the Nonconforming Work.

7.5 Hazardous Materials Management.

7.5.1 Procedures and Compensation for Hazardous Materials Management.

7.5.1.1 If during the course of the Development Work, D/B CDA Developer encounters material quantities of Hazardous Materials, D/B CDA Developer shall (a) promptly notify the CTRMA in writing and advise the CTRMA of any obligation to notify State or federal agencies under applicable Laws; and (b) take reasonable steps, including design modifications and/or construction techniques, to avoid excavation or dewatering in areas with Hazardous Materials. Where excavation or dewatering of Hazardous Materials is unavoidable, D/B CDA Developer shall utilize appropriately trained personnel and shall implement the most cost-effective approach to Hazardous Materials Management, as directed by the CTRMA. D/B CDA Developer's plan for Hazardous Materials Management shall be subject to the prior written approval of the CTRMA and shall be in accordance with Technical Provision 9. For purposes of this section, the term "material quantities" means only quantities that would require reporting or other action under Federal or State Law. Wherever feasible and consistent with applicable Laws, contaminated soil and groundwater shall not be disposed off-site. All Hazardous Materials shall be managed in accordance with applicable Laws, Governmental Approvals, the Hazardous Materials Management Plan, the approved investigative work plan described in Technical Provision 9, the approved site investigation report described in Technical Provision 9 and the Safety and Health Plan.

7.5.1.2 D/B CDA Developer shall afford the CTRMA the opportunity to inspect sites containing Hazardous Materials before any action is taken which would inhibit the CTRMA's ability to ascertain the nature and extent of the contamination.

7.5.1.3 Subject to the limitations and exceptions set forth in this Section 7.5, and Section 14, D/B CDA Developer shall be entitled to a Change Order providing for additional compensation and/or a time extension with respect to costs and delays directly attributable to the discovery of Hazardous Materials within the Schematic ROW, Mitigation Site, drainage

easements or any parcels added to the Site by a CTRMA-Directed Change or required due to a Force Majeure Event. The amount of additional compensation or extension of time in any Change Order allowed hereunder shall be determined in accordance with Section 14.8. Entitlement to compensation or a time extension shall be limited to costs of work performed pursuant to D/B CDA Developer's Hazardous Materials Management Plan, investigative work plan and site investigation report for such Hazardous Materials as approved by the CTRMA, in writing (provided that approval by the CTRMA shall not be required for costs incurred in connection with immediate or emergency response actions performed at the direction of the Environmental Team). No compensation or time extension shall be allowed with respect to (a) immaterial quantities of Hazardous Materials (for these purposes, quantities shall be considered immaterial if Direct Costs related to their removal would not reasonably exceed \$10,000), (b) any Hazardous Materials that could have been avoided by reasonable design modifications or construction techniques (provided the D/B CDA Developer shall be entitled to a Change Order for reasonable costs of redesign where the discovery of Hazardous Materials requires a change to D/B CDA's already existing design plans), (c) any costs that could have been reasonably avoided, or (d) Hazardous Materials on any other Additional Properties or New Utility Property Interests. To the extent that any proceeds of insurance are available to pay the cost of any Hazardous Materials Management, D/B CDA Developer shall rely on insurance to provide compensation, in lieu of requesting a Change Order for additional costs. Notwithstanding any other provision of this Agreement, the CTRMA shall have the right to direct D/B CDA Developer to allow the CTRMA or its designee to provide some or all Hazardous Materials management, in which case no Change Order for additional costs shall be issued for such work, but D/B CDA Developer may be entitled to a Change Order providing for a time extension in accordance with Section 14.8.

7.5.2 Hazardous Material Generator.

As between D/B CDA Developer and the CTRMA, and except as provided herein, the CTRMA shall be considered the generator of and arranger of (i) Hazardous Materials on the Final ROW properties as of the Effective Date and (ii) any Releases of Hazardous Materials on the Final ROW by CTRMA, and shall have the responsibility for all Hazardous Materials Management costs including assessment, containment and remediation expenses related thereto; provided, however, that the foregoing shall not preclude or limit any rights or remedies that the CTRMA may have against third parties and/or prior owners, lessees, licensees and occupants of the Final ROW. D/B CDA Developer shall be considered the generator of any Hazardous Materials which result from (a) Release(s) of Hazardous Material attributable to the negligence, willful misconduct, or breach of applicable Law or contract by any member of the D/B CDA Developer Group; and (b) Release(s) of Hazardous Materials arranged to be brought onto the Final ROW or elsewhere by any member of the D/B CDA Developer Group unless CTRMA is responsible for the Release of such Hazardous Materials pursuant to clause (ii) of the first

sentence of this Section 7.5.2; provided, however, that the foregoing shall not preclude or limit any rights or remedies that the D/B CDA Developer may have against third parties.

7.5.3 Hazardous Materials Releases Caused by D/B CDA Developer.

Hazardous Materials Management costs, including assessment, containment, and remediation expenses, which result from (a) Release(s) of Hazardous Materials attributable to the actions, omissions, negligence, willful misconduct, or breach of applicable Law or contract by any member of the D/B CDA Developer Group; or (b) Release(s) of Hazardous Materials arranged to be brought onto the Final ROW or elsewhere by any member of the D/B CDA Developer Group shall not be the responsibility of the CTRMA or compensable to D/B CDA Developer, regardless of the cause of the Release of Hazardous Materials. D/B CDA Developer shall be fully responsible for all Hazardous Materials Management costs associated with such Hazardous Materials.

7.5.4 Materials Brought to Final ROW by D/B CDA Developer.

D/B CDA Developer shall be solely responsible for: (a) compliance with all Laws applicable to Hazardous Materials brought onto the Site by any member of the D/B CDA Developer Group; (b) use, containment, storage, management, transport and disposal of all such Hazardous Materials in accordance with this Agreement and all applicable Laws and Environmental Approvals; and (c) payment of all penalties, expenses (including attorneys' fees and costs), costs, suits, judgments, claims, actions, damages (including damages to natural resources, property or Persons), delays and liability associated with, arising out of or related to such Hazardous Materials, including any of the foregoing incurred or suffered by the CTRMA.

7.5.5 Environmental Approvals Relating to Hazardous Materials.

It is the responsibility of D/B CDA Developer to obtain, on behalf of CTRMA, all Governmental Approvals relating to Hazardous Materials Management performed by D/B CDA Developer at the direction of CTRMA including federal and State surface water and groundwater discharge permits and permits for recycling or reuse of Hazardous Materials. D/B CDA Developer shall be solely responsible for compliance with such Governmental Approvals and applicable Laws, including those governing the preparation of waste profiles, waste manifests and bills of lading. CTRMA has exclusive decision-making authority regarding selection of the destination facility to which the pre-existing Hazardous Materials will be transported. With regard to pre-existing Hazardous Materials, CTRMA shall comply with the applicable standards for generators and arrangers including those found at 40 CFR, Part 262, including the responsibility to sign manifests for the transport of hazardous wastes. The foregoing shall not preclude or limit any rights, remedies or defenses that CTRMA or D/B CDA Developer may have against any Governmental Entity or third parties, including prior owners, lessees, licensees

and occupants of any parcel of land that is or becomes part of the Final ROW properties as of the Effective Date.

7.5.6 Indemnification

To the extent permitted by applicable Law, CTRMA shall indemnify, save, protect and defend D/B CDA Developer from third party claims, causes of action and Losses arising out of or related to generator or arranger liability for the pre-existing Hazardous Materials and Hazardous Materials from CTRMA Release(s) of Hazardous Material for which CTRMA is considered the generator and arranger pursuant to this Section, specifically excluding generator and arranger liability for actual and threatened D/B CDA Developer Releases of Hazardous Materials.

7.6 Environmental Compliance.

D/B CDA Developer shall be responsible for performance of all environmental mitigation measures (which term shall be deemed to include all requirements of the Environmental Approvals, including the CTRMA-Provided Approvals and similar Governmental Approvals, regardless of whether such requirements would be considered to fall within a strict definition of the term) for the Project (other than those which the CTRMA has expressly agreed to perform under the Contract Documents). The Development Price includes compensation for D/B CDA Developer's performance of all such mitigation measures provided, however, the Development Price does not include compensation for D/B CDA Developer's performance of environmental mitigation matters for which D/B CDA Developer is entitled to additional time and/or monetary compensation under Section 14 or for which the CTRMA is responsible under this Agreement, or Hazardous Materials of which the CTRMA is the generator under Section 7.5.2..

7.6.1 CTRMA's Responsibility for Approvals.

7.6.1.1 All mitigation requirements contained in the final CTRMA-Provided Approvals shall automatically be deemed included in the scope of the Development Work. In the event that the final CTRMA-Provided Approvals incorporate mitigation requirements addressing any modification in the Project Design from the original design concept included in the Environmental Document, such additional mitigation requirements shall be D/B CDA Developer's responsibility and shall not be considered a CTRMA-Directed Change or a Force Majeure Event.

7.6.1.2 D/B CDA Developer shall be responsible for obtaining any New Environmental Approvals required for the Project. In the event any New Environmental Approval is necessitated by a CTRMA-Directed Change or a Force Majeure Event, D/B CDA Developer shall be responsible for obtaining such New Environmental Approval and/or

performing any additional mitigation requirements of such New Environmental Approval only if directed to do so by a Directive Letter or a Change Order. The CTRMA shall cooperate with D/B CDA Developer and support its efforts to obtain any such New Environmental Approval. Any Change Order covering a CTRMA-Directed Change or a Force Majeure Event shall include compensation to D/B CDA Developer for additional costs incurred by D/B CDA Developer to obtain the New Environmental Approval and to implement any changes in the Development Work (including performance of additional mitigation measures) resulting from such New Environmental Approvals, as well as any time extension necessitated by the CTRMA-Directed Change or a Force Majeure Event, subject to the conditions and limitations contained in Section 14.

7.6.2 Approvals To Be Obtained by D/B CDA Developer.

Except as otherwise provided in this Section 7.6.2, if it is necessary to obtain a New Environmental Approval for any reason other than a Force Majeure Event or a CTRMA-Directed Change, D/B CDA Developer shall be fully responsible, at its sole cost and expense, for obtaining the New Environmental Approval and any other environmental clearances that may be necessary, and for all requirements resulting therefrom, as well as for any litigation arising in connection therewith.

8. DISADVANTAGED BUSINESS ENTERPRISE; CIVIL RIGHTS.

8.1 DBE Requirements.

8.1.1 The CTRMA has adopted a Disadvantaged Business Enterprise (“**DBE**”) Policy Statement and a Business Opportunity Program and Policy (“**BOPP**”) to facilitate and encourage the participation of disadvantaged and small businesses in CTRMA Procurements. The DBE Policy Statement and BOPP are attached as Exhibit H. Pursuant to the BOPP, all CTRMA contracts funded in whole or in part with federal funds received from the United States Department of Transportation (“**DOT**”), including funds received through the Federal Highway Administration (“**FHWA**”), or funded in whole or in part with such federal funds received by the CTRMA through TxDOT, are subject to the CTRMA’s DBE Program, adopted through a Memorandum of Understanding with TxDOT. The DBE Program provides DBEs full opportunity to participate in all CTRMA contracts in accordance with 49 C.F.R. Part 26. The goals for DBE participation are determined by the CTRMA and/or TxDOT in accordance with the requirements and formulas set forth in 49 C.F.R. Part 26 and applicable rules promulgated thereunder. D/B CDA Developer shall comply with all requirements set forth in (i) CTRMA’s DBE Program, and (ii) D/B CDA Developer’s FHWA approved DBE Performance Plan adopted by D/B CDA Developer in accordance with (i).

8.1.2 The DBE participation goal with respect to design services included in the Development Work is 12.2% of the Development Price attributable to design and other related professional services including ROW acquisition services. The DBE participation goal with respect to all other Development Work is 12.2% of the Development Price attributable to such work.

8.1.3 D/B CDA Developer shall include provisions to effectuate this Section 8 and Exhibit H in every Subcontract (including purchase orders and in every subcontract of any member of the D/B CDA Developer Group for Development Work), and shall require that they be included in all Subcontracts at lower tiers, so that such provisions will be binding upon each Subcontractor. In the event D/B CDA Developer intends to perform operations and maintenance work with respect to the Project, D/B CDA Developer agrees to use good faith efforts to encourage DBE participation in the performance of such work.

8.1.4 D/B CDA Developer shall not cancel or terminate any Subcontract with a DBE firm except in accordance with all requirements and provisions applicable to cancellation or termination of Subcontracts with DBE firms set forth in TxDOT's DBE Special Provision.

8.2 Civil Rights.

8.2.1 D/B CDA Developer shall not, and shall cause the Subcontractors to not, discriminate on the basis of race, color, national origin or sex in the performance of the Development Work under the Contract Documents. D/B CDA Developer shall carry out, and shall cause the Subcontractors to carry out, applicable requirements of 49 CFR Part 26 in the award and administration of FHWA-assisted agreements. Failure by D/B CDA Developer to carry out these requirements is a material breach of this Agreement, which may result in the termination of the Contract Documents or such other remedy as the CTRMA or TxDOT deems appropriate.

8.2.2 In all solicitations either by competitive bidding or negotiation made by D/B CDA Developer for Development Work to be performed by a Subcontractor, including procurement of materials or leases of equipment, D/B CDA Developer shall notify each potential Subcontractor of such Subcontractor's obligations under this Section 8.2 and of the federal regulations relative to nondiscrimination. D/B CDA Developer shall include Section 8.2.1 in every Subcontract (including purchase orders), and shall require that they be included in all Subcontracts at lower tiers, so that such provisions will be binding upon each Subcontractor. The CTRMA shall have the right to review all Subcontracts to assure compliance with this provision.

9. PERFORMANCE AND PAYMENT SECURITY.

D/B CDA Developer shall deliver to the CTRMA, and maintain in full force and effect at all times, security for performance of the Development Work as described below (or other assurance satisfactory to the CTRMA in its sole discretion).

9.1 Proposal Bond.

D/B CDA Developer has provided a Proposal Bond to the CTRMA in the amount of \$10,000,000. The Proposal Bond shall remain in place as security for performance of D/B CDA Developer's obligations under the Contract Documents during the period prior to issuance of NTP, including D/B CDA Developer's obligation to provide the Performance Bond and Payment Bond hereunder. Upon the CTRMA's receipt of the Performance Bond and the NTP Payment Bond and all other documents required to be provided to the CTRMA on or before issuance of NTP, the CTRMA shall release the Proposal Bond.

9.2 Performance Bond.

Upon the issuance by the CTRMA of NTP, D/B CDA Developer shall deliver to the CTRMA a performance bond in the amount of the lesser of the Development Price or \$250,000,000 and in the form attached hereto as Exhibit I (the "**Performance Bond**"). After Final Acceptance of the Project, the CTRMA shall provide a written release of the Performance Bond, provided that all of the following have occurred: (a) D/B CDA Developer is in compliance with the terms of the Contract Documents and is not in default thereunder; (b) no event has occurred that with the giving of notice or passage of time would constitute a default by D/B CDA Developer hereunder or under the Contract Documents; and (c) the CTRMA has received the Warranty Bond.

9.3 Payment Bond.

Upon the issuance by the CTRMA of NTP, D/B CDA Developer shall deliver to the CTRMA a labor and material payment bond in the amount of the lesser of the Development Price or \$250,000,000 and in the form attached hereto as Exhibit J (the "**Payment Bond**"). The CTRMA shall provide a written release of the Payment Bond the later of (a) one year after Final Acceptance, provided that D/B CDA Developer has delivered to the CTRMA (i) evidence satisfactory to the CTRMA that all Persons performing the Development Work have been fully paid, (ii) unconditional waivers of claims in form and substance satisfactory to the CTRMA, executed by all of such Persons, and (iii) the Warranty Bond; or (b) upon expiration of the statutory period for Subcontractors to file a claim against the bond for Development Work, provided that the CTRMA has received the Warranty Bond.

9.4 Warranty Bond.

After Final Acceptance and subject to the requirements herein, D/B CDA Developer may obtain a release of the Performance and Payment Bonds by providing a warranty bond which shall guarantee performance of the Development Work required to be performed during the Warranty period and which shall also constitute a payment bond guaranteeing payment to Persons performing such Development Work (“**Warranty Bond**”). The Warranty Bond shall be in the amount of \$20,000,000 and shall be in the form attached hereto as Exhibit K.

9.5 Surety Financial Requirements.

Any bond provided in accordance with this Section 9 shall be issued by a Surety with an A.M. Best and Company rating level of A-minus (A-) or better, Class VIII or better, or as otherwise approved in writing by the CTRMA, in its sole discretion.

9.6 Performance by Surety or Guarantor.

Performance by a Surety or a Guarantor of any of the obligations of D/B CDA Developer shall not relieve D/B CDA Developer of any of its obligations hereunder.

9.7 Guarantee.

9.7.1 If at any time during the course of the Agreement the total combined Tangible Net Worth of D/B CDA Developer, its equity members and any Guarantors, if any, is less than \$100,000,000 (excluding Tangible Net Worth in excess of any applicable limit of liability stated in the guarantee), D/B CDA Developer shall provide one or more guarantees making up the difference. Each such guarantee shall be in the form attached to the Instructions to Proposers as Form N together with appropriate evidence of authorization thereof, and the total liability thereunder shall be equal to or greater than the difference between \$100,000,000 and such total combined Tangible Net Worth. Each guarantee must be provided by (a) a parent corporation or a shareholder of D/B CDA Developer, or (b) a parent corporation or a shareholder of an equity member of D/B CDA Developer.

10. INSURANCE.

D/B CDA Developer shall purchase and continuously maintain in full force and effect through Project Final Acceptance, or such longer or shorter time as may be specifically provided below, the insurance coverages specified in this Section 10. These insurance coverage requirements are also subject to all other applicable sections of the Contract Documents. The insurance, except for professional liability and worker’s compensation, provided hereunder shall be available for the benefit of the CTRMA and D/B CDA Developer with respect to covered claims, but shall not be interpreted to relieve D/B CDA Developer of any obligations hereunder.

All insurance required hereunder shall be procured from insurance or indemnity companies with an A.M. Best and Company rating level of A- or better, Class VIII or better, or as otherwise approved by the CTRMA and authorized or approved to do business in the State. All limits of liability set forth below are in U.S. dollars.

10.1 [Reserved].

10.2 Insurance After Issuance of NTP.

During the period commencing with the date on which the CTRMA issues NTP and ending at Project Final Acceptance (unless otherwise specified herein), D/B CDA Developer shall provide and maintain insurance as specified in this Section 10.2.

10.2.1 Commercial General Liability Insurance.

(a) D/B CDA Developer shall provide and maintain commercial general liability coverage (for bodily injury, property damage, personal injury and advertising injury) during the period starting on the date on which the CTRMA issues NTP and ending on the date of expiration of the Warranty Period, using an ISO CG 00 01 (10/04) occurrence form (or equivalent), specifically including coverage for contractual liability per standard ISO policy terms, premises operations, independent contractors, products and completed operations, broad form property damage and hazards commonly referred to as "XCU," with limits of \$2,000,000 per occurrence and \$4,000,000 annual per project aggregate. The policy shall not include any professional liability exclusion as it relates to "means and methods" of construction. The definition of "Insured Contract" in the policy should be amended to state that "professional services" does not include "means and methods" of construction. The policy shall include the Limited Exclusion-Contractors-Professional Liability Endorsement CG22-80 or its equivalent. There shall be no exclusion for work performed on or within 50 feet of any railroad property. The definition of "Insured Contract" in the policy shall include that part of any contract or agreement that indemnifies a railroad for bodily injury or property damage arising out of construction or demolition operations on or within 50 feet of any railroad property. The policy shall include products and completed operations extended coverage in the amount of \$4,000,000, and this coverage shall be maintained for two (2) years after the end of the Warranty Period. D/B CDA Developer shall be the named insured and each of the Indemnified Parties, including the railroad(s), shall be additional insureds, on a primary and non-contributory basis. The policy deductibles shall be subject to the CTRMA's approval.

(b) If D/B CDA Developer's commercial general liability insurance or other form with a general aggregate limit is used, then the aggregate limits shall apply separately to the Project, or D/B CDA Developer may obtain separate project specific insurance to provide the required limit which shall not be subject to depletion because of claims arising out of any other project or activity of D/B CDA Developer. The policy terms, conditions, coverage and limit

requirements for the project specific policy are the same as referenced in (a) above. Notwithstanding any other provision of the Contract Documents, the project policy shall not be cancellable, except for non-payment of premium, fraud or material misrepresentation.

10.2.2 Umbrella Excess Liability.

(a) D/B CDA Developer shall provide and maintain umbrella excess liability coverage with limits of \$30,000,000 per occurrence and \$30,000,000 per project aggregate on the same basis as outlined in Sections 10.2.1 (a) or (b) above, 10.2.3 and 10.2.4. Any such umbrella excess insurance shall be at least as broad as D/B CDA Developer's primary insurance.

10.2.3 Workers' Compensation Insurance and Employer's Liability Insurance.

During the period commencing on the date on which the CTRMA issues NTP and ending on the date of Project Final Acceptance, D/B CDA Developer shall provide and maintain worker's compensation insurance in conformance with applicable Law and employer's liability insurance (for bodily injury or disease) with limits of \$1,000,000 per accident for all of its employees involved with the performance of the Development Work. D/B CDA Developer shall be the named insureds on these policies. The worker's compensation coverage will contain the following endorsements:

- (a) An endorsement extending the policy to cover the liability of the insureds under the Federal Employer's Liability Act.
- (b) A voluntary compensation endorsement.
- (c) An alternative employer endorsement.
- (d) An endorsement extending coverage to all states operations on an "if any" basis.

10.2.4 Business Automobile Liability Insurance.

D/B CDA Developer shall provide and maintain business automobile liability insurance, commencing on the date on which the CTRMA issues NTP and ending upon the date of Project Final Acceptance, covering the D/B CDA Developer's legal liability arising out of the ownership, operation, maintenance or use of all owned/leased, non-owned and hired vehicles used in the performance of the Development Work, including loading and unloading, with limits of not less than \$2,000,000 combined single limit for bodily injury and property damage liability; provided, however, that such coverage shall be maintained for vehicles used in performance of Warranty work until the expiration of the Warranties. D/B CDA Developer shall be the named insured and each of the Indemnified Parties shall be named as additional insureds, on a primary

and non-contributory basis, with respect to liability arising out of the acts or omissions of any member of the D/B CDA Developer Group, whether occurring on or off of the Site. The policy shall include auto pollution liability coverage. The policy deductibles shall be subject to the CTRMA's approval.

10.2.5 Professional Liability Insurance.

D/B CDA Developer shall provide and maintain or cause its lead design Subcontractor to provide professional liability coverage, through a specific project professional liability policy, with limits not less than \$10,000,000 per negligent act, error or omission limit and \$10,000,000 aggregate. The professional liability coverage shall protect against any negligent act, error or omission arising out of design or engineering services performed by the D/B CDA Developer's lead design Subcontractor or its lower tier design subcontractors or subconsultants. The policy shall have a retroactive date no later than the date on which the RFDP Documents are issued and shall have a five-year extended reporting period from the date of Final Acceptance with respect to claims or suits which were not made or brought during the term of the policy. The coverage shall include the D/B CDA Developer's lead design Subcontractor and its design subcontractors and subconsultants of any tiers. The policy shall include a Notice of Circumstance provision. The policy shall not contain any exclusion for cost estimates or delay in project completion. Notwithstanding any other provisions of the Contract Documents, the project policy shall not be cancellable, except for non-payment of premium, fraud or material misrepresentation. As an alternative to the project specific coverage described above, the Design/Builder may instead substitute the professional liability coverage that it or its lead design firm carries provided that (a) such coverage is in the amount of at least \$20,000,000 per negligent act, error or omission and \$20,000,000 aggregate, (b) such policy is maintained until at least five (5) years following Substantial Completion of the Project, and (c) the owner of the policy provides the CTRMA, on an annual basis, with a current certificate of insurance and a copy of its financial statements, including balance sheet, income statement, and statement of cash flow.

10.2.6 Pollution Liability Insurance.

D/B CDA Developer shall provide and maintain pollution liability coverage on an occurrence basis, through a Specific Project Pollution Liability Policy, with limits not less than \$5,000,000 per "pollution incident" and \$5,000,000 aggregate. The pollution liability coverage shall protect against the D/B CDA Developer's legal liability arising out of any construction and related activities with respect to the Project, including off site activities. The policy shall provide coverage from the date on which the NTP is issued until five (5) years from the date of Final Acceptance. The policy shall include coverage for damage (including loss of use of) to natural resources. Each of the Indemnified Parties shall be named as an additional insured, on a primary and non-contributory basis, to this policy with respect to liability arising out of the acts, errors, and omissions of any member of the D/B CDA Developer Group and Subcontractors whether

occurring on or off of the site. Notwithstanding any other provisions of the Contract Documents, the project policy shall not be cancellable, except for non-payment of premium, fraud or material misrepresentation.

10.2.7 Builder's Risk.

D/B CDA Developer shall procure and maintain builder's risk insurance for the Project as specified below. The insureds shall be D/B CDA Developer, all Subcontractors (excluding those solely responsible for design Development Work) of any tier, and each of the Indemnified Parties, as their interests may appear. The insurance shall be maintained during the period starting on the date of commencement of construction and ending on the date of Substantial Completion.

10.2.7.1 Minimum Scope: A blanket builder's risk insurance policy on an "all risk" basis for the entire Project including: (1) coverage for resulting property damage caused by faulty workmanship, Nonconforming Work materials, omission or deficiency in design or specifications; (2) coverage against damage or loss caused by the perils of fire (with extended coverage), earth movement, flood, theft, vandalism and malicious mischief and machinery accidents; (3) coverage for removal of debris, contaminants and pollutants (as defined in the policy) including demolition from the enforcement of any applicable local, state, or federal requirement, and insuring the buildings, structures, machinery, equipment, facilities, fixtures and all other properties constituting a part of the Project; (4) transit coverage, including ocean marine coverage (unless insured by the supplier), with sub-limits sufficient to insure the full replacement value of any key equipment item; (5) coverage with sub-limits sufficient to insure the full replacement value of any property or equipment stored either on or off the Site, and (6) coverage for architect and engineering fees required as a result of a covered loss. Such insurance shall be on a form acceptable to the CTRMA and shall have a limit equal to the probable maximum loss to replace the completed Project plus "soft cost expense cover," as defined in the policy (including, at a minimum, attorneys' fees and fees and other costs associated with such damage or loss and with any Governmental Approvals), with a limit of \$5,000,000 and shall include flood insurance with a \$25,000,000 minimum annual aggregate limit. There shall be no coinsurance penalty provision in any such policy. Ocean Marine coverage, if applicable, shall be provided through this insurance or separate Ocean Marine insurance. Deductibles or self-insured retentions shall be subject to the CTRMA's approval.

10.2.8 Valuable Papers.

D/B CDA Developer shall provide valuable papers insurance with a limit of not less than \$200,000 each loss. Such insurance shall assure the restoration of any Plans, drawings, computations, field notes, or other similar data relating to the Development Work and/or the Project in the event of loss or destruction until all such items and data are turned over to the

CTRMA. Such insurance may be provided separately or as part of D/B CDA Developer's Builders Risk policy.

10.3 General Insurance Requirements.

10.3.1 Premiums, Deductibles and Self-Insured Retentions.

D/B CDA Developer shall be responsible for payment of premiums for all insurance required under this Section 10. D/B CDA Developer shall be solely responsible for all other deductibles and self-insured retentions hereunder. D/B CDA Developer further agrees that for each claim, suit or action made against insurance provided hereunder, with respect to all matters for which D/B CDA Developer is responsible hereunder, D/B CDA Developer shall be solely responsible for amounts in excess of the coverage provided. With respect to all matters for which the CTRMA is responsible hereunder, the CTRMA shall remain fully responsible for amounts in excess of the coverage provided.

10.3.2 Verification of Coverage.

(a) D/B CDA Developer Policies. Concurrently with the date on which coverage is required to be procured under this Section 10, D/B CDA Developer will deliver to the CTRMA original certificates of insurance, which shall be completed by an agent authorized to bind the named underwriter(s) and their company to the coverage, limits and termination provisions shown thereon, and which shall furnish and contain all required information referenced or indicated thereon. The original certificate(s) must have the agent's original signature, including the signer's company affiliation, title and phone number, and be mailed directly from the agent to the CTRMA. The CTRMA shall have no duty to pay or perform under this Agreement until such certificate(s) shall have been delivered to the CTRMA. Upon the CTRMA's request, duplicate copies of each of the insurance policies (including all endorsements and amendments) required under Section 10 shall be provided to the CTRMA.

(b) Renewal Policies. When applicable, not less than 30 Days prior to the expiration date of any policy of insurance required by this Section 10, D/B CDA Developer shall deliver to the CTRMA a binder or certificate of insurance with respect to each renewal policy. If requested by the CTRMA from time to time, certified duplicate copies of the renewal policy shall also be provided.

10.3.3 Subcontractor Insurance Requirements.

D/B CDA Developer shall cause each Subcontractor to provide insurance that complies with requirements for D/B CDA Developer-provided insurance set forth in this Section 10 in circumstances where the Subcontractor is not covered by D/B CDA Developer-provided insurance and provided that D/B CDA Developer shall have sole responsibility for determining

the limits of coverage required to be obtained by Subcontractors, which determination shall be made in accordance with reasonable and prudent business practices. D/B CDA Developer shall cause each such Subcontractor to include each of the Indemnified Parties as additional insureds on a primary and non-contributory basis, under such Subcontractor's commercial general liability, umbrella excess liability, and business automobile liability insurance policies. D/B CDA Developer shall require each such Subcontractor to require that its insurer agree to waive any subrogation rights the insurers may have against the Indemnified Parties. The CTRMA shall have the right to contact the Subcontractors directly in order to verify the above coverage.

10.3.4 Endorsements and Waivers.

All insurance policies required to be provided by D/B CDA Developer hereunder shall contain or be endorsed to contain the following provisions, provided that, for the workers' compensation policy and the professional liability policy, only the following clause (d) shall be applicable:

(a) For claims covered by the insurance specified herein, said insurance coverage shall be primary insurance with respect to the insureds and additional insureds and shall specify that coverage continues notwithstanding the fact that D/B CDA Developer has left the Site. Any insurance or self-insurance beyond that specified in this Agreement that is maintained by an insured or additional insured shall be excess of such insurance and shall not contribute with such primary insurance.

(b) Any failure on the part of a named insured to comply with reporting provisions or other conditions of the policies, any breach of warranty, any action or inaction of a named insured or others, any foreclosure relating to the Project or any change in ownership of all or any portion of the Project shall not affect coverage provided to the other insureds or additional insureds.

(c) The insurance shall apply separately to each insured and additional insured against whom a claim is made or suit is brought, except with respect to the aggregate limits of the insurer's liability.

(d) Each policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, modified or reduced in coverage or in limits except after 30 days' prior written notice has been given to the CTRMA and D/B CDA Developer. Such endorsement shall not include any limitation of liability of the insurer for failure to provide such notice.

(e) All Commercial General Liability endorsements adding additional insureds shall be on forms CG-20-10 (latest edition) or an equivalent form providing additional insureds with coverage for premises/operations and CG 2037 (or equivalent) for completed operations.

(f) Each policy shall provide coverage on an "occurrence" basis and not a "claims made" basis (with the exception of professional liability policies).

10.3.5 Waivers and Subrogation.

The CTRMA and D/B CDA Developer waive all rights against each other, against each of their agents and employees and their respective members, directors, officers, employees, agents and consultants for any claims, but only to the extent covered by insurance obtained pursuant to this Section 10, except such rights as they may have to the proceeds of such insurance and provided further that D/B CDA Developer shall not be entitled to additional compensation or time extension under this Agreement to the extent compensated by any insurance specified herein. D/B CDA Developer shall cause all Subcontractors to provide similar waivers in writing each in favor of all other parties enumerated above. Each policy, including workers' compensation, shall include a waiver of any right of subrogation against the additional insureds (and their respective members, directors, officers, employees, agents and consultants).

10.3.6 Changes in Requirements.

The CTRMA shall notify D/B CDA Developer in writing of any changes in the requirements applicable to insurance required to be provided by D/B CDA Developer. Pursuant to a Change Order, any additional cost from such change shall be paid by the CTRMA and any reduction in cost shall reduce the Development Price.

10.3.7 No Recourse.

There shall be no recourse against the CTRMA for payment of premiums or other amounts with respect to the insurance required to be provided by D/B CDA Developer hereunder.

10.3.8 Support of Indemnifications.

The insurance coverage provided hereunder by D/B CDA Developer is not intended to limit D/B CDA Developer's indemnification obligations under Section 23.

10.3.9 Commercial Unavailability of Required Coverages.

If, in the future, through no fault of D/B CDA Developer, any of the coverages required in this Section 10 (or any of the required terms of such coverages, including endorsements and/or policy limits) are not available or become in the future unavailable as determined under a commercial reasonableness standard, the CTRMA will work with D/B CDA Developer to find commercially reasonable alternatives to the required coverages that are acceptable to the

CTRMA and to the D/B CDA Developer. In the event any required coverage is not available and no reasonable alternative is acceptable, the CTRMA shall be entitled to a Change Order to reduce the Development Price by the cost of any required insurance that is not obtained due to commercial unavailability.

10.4 CTRMA's Right to Remedy Breach by D/B CDA Developer.

If D/B CDA Developer or any Subcontractor fails to provide insurance as required herein, the CTRMA shall have the right, but not the obligation, to purchase such insurance. In such event, the amounts paid by the CTRMA shall, at the CTRMA's sole option, be deducted from amounts payable to D/B CDA Developer or reimbursed by D/B CDA Developer upon demand, with interest thereon at the maximum rate allowable under applicable Law from the date of payment by the CTRMA. Nothing herein shall preclude the CTRMA from exercising its rights and remedies under Section 17 as a result of the failure of D/B CDA Developer or any Subcontractor to satisfy the obligations of this Section 10.

10.5 Other Conditions.

10.5.1 Minimum Safety Compliance Requirements.

D/B CDA Developer shall be solely responsible for safety on the Site, and shall comply in all respects with the Safety and Health Plan. Each Subcontractor, before performing any Development Work, shall agree in writing to, and shall when performing any Development Work, comply with the requirements of the Safety and Health Plan. Any suspension of Development Work by the CTRMA related to safety concerns, including the failure of any member of the D/B CDA Developer Group to comply with the Safety and Health Plan, shall be considered a suspension for cause under Section 15.2.

10.5.2 Due Care Required.

Nothing contained in this Section 10 shall relieve D/B CDA Developer or any Subcontractors of its obligation to exercise due care in the performance of the Development Work and to complete the Development Work in strict compliance with this Agreement.

10.6 Prosecution of Claims.

Unless otherwise directed by the CTRMA in writing, D/B CDA Developer shall report and process all potential claims by the CTRMA or D/B CDA Developer against the insurance required to be provided hereunder. D/B CDA Developer agrees to report timely to the insurer(s) any and all matters which may give rise to an insurance claim and to promptly and diligently pursue any and all insurance claims on behalf of the CTRMA, whether for defense or indemnity or both. The CTRMA agrees to notify D/B CDA Developer of the CTRMA's incidents,

potential claims, and matters which may give rise to an insurance claim by the CTRMA, to tender its defense or the claim to D/B CDA Developer, and to reasonably cooperate with D/B CDA Developer for D/B CDA Developer to fulfill its duties hereunder.

10.7 Commencement of Development Work.

D/B CDA Developer shall not commence Development Work under this Agreement until it has obtained the applicable insurance required under this Section 10 and such insurance has been approved by the CTRMA. D/B CDA Developer shall not allow any Subcontractor to commence work under its Subcontract until the insurance required of the Subcontractor has been obtained and approved by D/B CDA Developer. If the insurance provided by D/B CDA Developer fails to comply with the requirements listed herein, or if D/B CDA Developer fails to maintain such insurance, then the CTRMA maintains the right to suspend D/B CDA Developer's right to proceed until the CTRMA receives satisfactory evidence that the required insurance coverage has been procured in accordance with the terms hereof.

10.8 Disclaimer.

D/B CDA Developer and each Subcontractor have the responsibility to make sure that their insurance programs fit their particular needs, and it is their responsibility to arrange for and secure any insurance coverage which they deem advisable, whether or not specified herein.

10.9 Insurance During Warranty Period.

During the period following Final Acceptance and prior to expiration of D/B CDA Developer's Warranty, D/B CDA Developer shall maintain in full force and effect all insurance as specified in Section 10.2 excluding builders risk coverage.

11. SITE SECURITY; RESPONSIBILITY FOR LOSS OR DAMAGE.

11.1 Site Security.

D/B CDA Developer shall provide appropriate security for the Site, and shall take all reasonable precautions and provide protection to prevent damage, injury, or loss to the Development Work and materials and equipment to be incorporated therein, as well as all other property at or on the Site, whether owned by D/B CDA Developer, the CTRMA, or any other Person.

11.2 Risk of Loss or Damage; Maintenance and Repair of Development Work.

The Development Work includes maintenance of the Project throughout the entire period from D/B CDA Developer's implementation of traffic control operations until Final Acceptance

in accordance with Technical Provision 24. In addition to such routine maintenance, D/B CDA Developer, at no additional cost to the CTRMA, shall maintain, rebuild, repair, restore or replace all Development Work, including Design Documents, Construction Documents, materials, equipment, supplies and maintenance equipment which are purchased for permanent installation in, or for use during construction of the Project that is injured or damaged prior to Substantial Completion, regardless of who has title thereto under the Contract Documents and regardless of the cause of the damage or injury, except to the extent that (a) the CTRMA is responsible for such costs in accordance with the terms of this Agreement, (b) control of such improvements has transferred to third parties (other than CTRMA), or (c) D/B CDA Developer retains responsibility for loss and control of certain elements of the Project beyond Final Acceptance. D/B CDA Developer, at its cost and on the same conditions, shall also have sole responsibility during such periods for rebuilding, repairing and restoring all other property within the Final ROW whether owned by D/B CDA Developer, the CTRMA or any other Person. If insurance proceeds with respect to any loss or damage are paid to the CTRMA, then the CTRMA shall arrange for such proceeds to reimburse D/B CDA Developer as repair or replacement work is performed by D/B CDA Developer to the extent that the CTRMA has not previously paid for such repair or replacement work; provided, however, that release of such proceeds to D/B CDA Developer shall not be a condition precedent to D/B CDA Developer's obligation to perform such replacement or repair work or indicate that such replacement or repair work has been approved and accepted by the CTRMA. Notwithstanding this Section 11.2 or any other provision of this Agreement, D/B CDA Developer shall be entitled to a Change Order for any unreimbursed costs it incurs in excess of \$50,000 related to repairs resulting from the actions of any third parties, provided that such actions of third parties occur outside the D/B CDA Developer's limits of traffic control. The \$50,000 threshold is for each such repair occurrence and may not be cumulated for unrelated repair incidents. In no event shall D/B CDA Developer be entitled to a Change Order to extend a Completion Deadline related to its obligations under this Section 11.2.

12. WARRANTIES.

12.1 Warranties.

12.1.1 The warranties set forth in Sections 12.1.1.1 and 12.1.1.2 shall individually be referred to herein as a “**Warranty**” and, collectively, as the “**Warranties**”.

12.1.1.1 D/B CDA Developer warrants that for design Development Work:

(a) all professional engineering services performed pursuant to the Contract Documents shall conform to all professional engineering principles generally accepted as standards of the industry in the State at the time the services are performed;

(b) the Project shall be free of errors or omissions and shall be free of Deviations not previously approved by the CTRMA in accordance with the Contract Documents;

(c) the Development Work shall be designed so as to not require significant or unusual maintenance, including landslide/rock removal, drainage repair and mud removal due to erosion; and

(d) the Development Work shall meet all of the requirements of the Contract Documents.

12.1.1.2 D/B CDA Developer warrants for construction Development Work:

(a) each of the Warranty specifications set forth in Section 3.4 of Technical Provision 3; and

(b) the Development Work shall meet all of the requirements of the Contract Documents.

12.1.1.3 Except as provided in Section 12.1.1.1 and 12.1.1.2, D/B CDA Developer makes no other warranties or guarantees, express or implied, with respect to the quality of the Development Work. **IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE SPECIFICALLY DISCLAIMED AND EXCLUDED.**

12.1.2 The Warranties for the Project shall commence at the time, and shall remain in effect until the time specified in Section 3.2 of Technical Provision 3 with respect to each of the general conditions specified in such Section 3.2. If the CTRMA determines that any of the Development Work has not met the standards set forth in this Section 12.1 and Technical Provision 3 at any time during the warranty period for such Development Work, then D/B CDA Developer shall correct such Development Work as specified in Technical Provision 3, even if the performance of such corrective work extends beyond the stated warranty period.

12.1.3 If D/B CDA Developer does not use its Best Efforts to effectuate a remedy within the agreed time, as set forth in Technical Provision 3, then the CTRMA shall have the right to perform or have performed by third parties the necessary remedy, and the CTRMA shall, at its option, deduct from any moneys due or to become due D/B CDA Developer and/or obtain reimbursement from D/B CDA Developer for such cost, with interest thereon from the date of the CTRMA's disbursement until payment is received by the CTRMA at the lesser of (i) 12% per annum or (ii) the maximum amount allowable under applicable Law.

12.1.4 All costs of repairing, replacing or correcting Development Work pursuant to the Warranties, including additional testing and inspections, shall be deemed included in the Development Price. Should D/B CDA Developer fail to begin performance of warranty work after five (5) days written notice from CTRMA and CTRMA is required to perform the same, D/B CDA Developer shall reimburse the CTRMA for all expenses, direct and indirect, incurred by the CTRMA as a result of such Warranty work, including any costs incurred by the CTRMA for independent quality assurance and/or quality control with respect to the Warranty work, within ten Days after D/B CDA Developer's receipt of invoices therefore (including, subject to the \$10,000,000 limitation in Section 18.3.1(c), any lost toll revenue arising from or relating to such repair, replacement or corrective work) with interest thereon from the date such costs are incurred by the CTRMA until payment is received by the CTRMA at the lesser of (i) 12% per annum or (ii) the maximum amount allowable under applicable Law. Alternatively, the CTRMA may, at its option, deduct such sums from any moneys due or to become due D/B CDA Developer. Any dispute relating to this Section 12 shall be subject to the dispute resolution provisions contained in Section 25 of this Agreement, provided that D/B CDA Developer shall proceed as directed by the CTRMA pending resolution of the dispute.

12.1.5 The procedures, processes, tests, inspections, materials, equipment, machinery, personnel and other actions and items utilized or required under this Agreement with respect to the Development Work shall apply equally to any repaired, replaced or corrected Development Work.

12.2 Applicability of Warranties to Repaired, Replaced or Corrected Development Work.

The Warranties shall apply to all Development Work repaired, replaced or corrected pursuant to the terms of this Agreement. The Warranties for repaired, replaced or corrected Development Work shall extend beyond the original warranty period if necessary to provide at least the warranty period specified for such Development Work in Technical Provision 3 following acceptance by the CTRMA of the repair, replaced or corrected Development Work.

12.3 Subcontractor and Extended Warranties.

12.3.1 Without in any way derogating the Warranties and D/B CDA Developer's other obligations with respect to the Development Work, D/B CDA Developer shall obtain from all Subcontractors and cause to be extended to the CTRMA, for periods at least coterminous with the Warranties, appropriate representations, warranties, guarantees and obligations with respect to design, materials, workmanship, equipment, tools, supplies and other aspects of the Development Work furnished by such Subcontractors. All representations, warranties, guarantees and obligations of Subcontractors (a) shall be written so as to survive all inspections, tests and approvals hereunder, and (b) shall run directly to and be enforceable by D/B CDA

Developer, the CTRMA and/or their respective successors and assigns. D/B CDA Developer assigns to the CTRMA all of D/B CDA Developer's rights and interest in all extended warranties for periods exceeding the applicable Warranty period which are received by D/B CDA Developer from any of its Subcontractors. To the extent that any Subcontractor warranty or guaranty would be voided by reason of D/B CDA Developer's negligence in incorporating material or equipment into the work, D/B CDA Developer shall be responsible for correcting such defect.

12.3.2 Upon receipt from the CTRMA of notice of a failure of any Development Work performed by a Subcontractor to satisfy the requirements of the Contract Documents, D/B CDA Developer shall enforce or perform any such Subcontractor representation, warranty, guaranty or obligation, in addition to D/B CDA Developer's other obligations hereunder. The CTRMA's rights under this Section 12.3.2 shall commence at the time such representation, warranty, guaranty or obligation is furnished and shall continue until the expiration of the Warranties (including extensions thereof under Section 12.2). Until such expiration, the cost of any equipment, material, labor (including re-engineering) or shipping shall be at D/B CDA Developer's cost if such cost is covered by such a Subcontractor representation, warranty, guaranty or obligation and D/B CDA Developer shall be required to replace or repair defective equipment, material or workmanship furnished by Subcontractors.

12.3.3 The foregoing provisions concerning Subcontractor warranties are intended to provide the CTRMA with an additional Person and source in which to seek recourse if Development Work fails to meet the requirements of the Contract Documents. In no event shall the foregoing provisions be interpreted to modify, limit, discharge, release, negate or waive the Warranties or D/B CDA Developer's obligations with respect to the Development Work, and D/B CDA Developer shall not be entitled to use the existence of Subcontractor warranties as a defense to D/B CDA Developer's obligations under this Agreement and the other Contract Documents.

12.4 Effect of the CTRMA or Maintenance Contractor Activities on Warranties.

D/B CDA Developer acknowledges and agrees that the CTRMA, TxDOT, or a maintenance contractor hired by CTRMA and their respective agents may perform certain maintenance work during the period in which the Warranties are in effect and agrees that the Warranties shall apply notwithstanding such activities; provided that, the foregoing shall not be deemed to require D/B CDA Developer to repair, replace or correct problems to the extent caused by the CTRMA, TxDOT, a maintenance subcontractor hired by CTRMA, or defective maintenance.

12.5 No Limitation of Liability.

Subject to Section 12.1.1.3, the Warranties are in addition to all rights and remedies available under the Contract Documents or applicable Law or in equity, and shall not limit D/B CDA Developer's liability or responsibility imposed by the Contract Documents or applicable Law or in equity with respect to the Development Work, including liability for design defects, latent construction defects, strict liability, breach, negligence, willful misconduct or fraud; provided, however, that upon expiration of the Warranties, D/B CDA Developer shall have no further liability to the CTRMA for latent construction defects, unless the CTRMA has initiated a lawsuit for such latent defects within the applicable Warranty period or the applicable statute of limitations period under State law if such period is longer than the Warranty period.

12.6 Damages for Breach of Warranty.

If D/B CDA Developer fails or refuses to satisfy its obligations with respect to the Warranties, then, in addition to the CTRMA's other rights and remedies hereunder, at Law or in equity, D/B CDA Developer shall be liable for the cost of performance of such obligations by others, with interest thereon at the lesser of (i) 12% per annum or (ii) the maximum rate allowable by applicable Law.

12.7 Warranty Beneficiaries.

In addition to benefiting the CTRMA, and its successors and assigns, the Warranties and Subcontractors' warranties provided under this Section 12 shall inure to the benefit of and shall be directly enforceable by local agencies and Utility Owners, with respect to their facilities.

12.8 Transfer of Warranties to TxDOT.

D/B CDA Developer acknowledges that, pursuant to the Project Development Agreement between the CTRMA and TxDOT, ownership of the frontage roads included in the Project, together with all rights of the CTRMA with respect to the enforcement of the Warranties described in this Section 12 and in Technical Provision 3 related to such frontage roads, will be transferred by the CTRMA to TxDOT following Final Acceptance of the Project hereunder. D/B CDA Developer hereby consents to such transfer of such Warranties and agrees that it shall be obligated to comply with all Warranty provisions under the Contract Documents, upon the terms and for the time periods specified herein, and that TxDOT shall be entitled to all rights of the CTRMA hereunder to enforce such Warranties.

13. PAYMENT.

13.1 Development Price.

Subject to Sections 13.2, and 13.5, as full compensation for the Development Work and all other obligations to be performed by D/B CDA Developer under the Contract Documents, the CTRMA shall pay to D/B CDA Developer a lump sum of \$207,297,859.00. Such sum, as it may be adjusted from time to time to account for Change Orders, is referred to herein as the “**Development Price**”.

13.1.1 The Development Price shall be paid in accordance with Section 13.3 and may be changed only by a Change Order issued in accordance with Section 14, or as a result of an Incentive Payment under Section 13.5 or Liquidated Damages pursuant to Section 18.1. D/B CDA Developer acknowledges and agrees that, subject only to D/B CDA Developer's rights under Section 14, the Development Price includes (a) all designs, equipment, materials, labor, insurance and bond premiums, home office, jobsite and all other overhead, profit and services related to D/B CDA Developer's performance of its obligations under the Contract Documents, including all Development Work, equipment, materials, labor and services provided by Subcontractors and all intellectual property rights necessary to perform the Development Work; (b) performance of each and every portion of the Development Work; (c) the cost of obtaining all Governmental Approvals and compliance with such Governmental Approvals and applicable Law; and (d) payment of any duties and other fees, costs and/or royalties imposed with respect to the Development Work and any equipment, materials, labor or services included therein.

13.2 NTP Work Payments; Delay in Issuance of NTP.

13.2.1 NTP Work Payments.

13.2.1.1 D/B CDA Developer acknowledges and agrees that (i) the CTRMA will not pay for Development Work prior to issuance of the NTP, (ii) any Development Work performed by D/B CDA Developer prior to the issuance of the NTP shall, therefore, be performed solely at D/B CDA Developer's risk and (iii) the CTRMA shall have no liability hereunder and no responsibility to pay D/B CDA Developer for any Development Work performed by D/B CDA Developer unless and until the NTP is issued by the CTRMA, in its sole discretion.

13.2.2 Delay in Issuance of NTP; Escalation.

13.2.2.1 The CTRMA shall issue NTP on or about the date of the closing of the financing for the Project, which will authorize D/B CDA Developer to proceed with the Development Work. The CTRMA reserves the right, in its sole discretion, to issue NTP in two or more phases. If NTP has not been issued by the CTRMA as of 210 Days after the Proposal

Date, due to no fault of any member of the D/B CDA Developer Group, this Agreement shall remain in full force and effect, without any modification to the terms and conditions hereof, provided that D/B CDA Developer shall be entitled to an adjustment in the Development Price for the Development Work authorized by NTP, based on the Engineering News Record Construction Cost Index for Construction Costs (“ENR CCI”), from a base date commencing as of the expiration of such 210 Day period and until the date of issuance of NTP calculated as follows:

$$\text{Adjusted DP} = (\text{Proposal DP}) \times (\text{ENR CCI})/(\text{BI})$$

The Base Index (BI) is the Engineering News Record Construction Cost Index for the calendar month which occurs 210 Days after the Proposal Date. The ENR CCI is the Engineering News Record Construction Cost Index for the month in which NTP is issued.

13.2.2.2 If NTP has not been issued as of 365 Days after the Proposal Date due to no fault of any member of the D/B CDA Developer Group, D/B CDA Developer may seek to negotiate a Change Order, including an extension in time for issuance of NTP and an increase in the Development Price mutually acceptable to D/B CDA Developer and the CTRMA, provided that any extension in time for issuance of NTP beyond 365 Days after the Proposal Date shall be subject to the concurrence of Surety. If D/B CDA Developer does not wish to seek a Change Order as provided above or the CTRMA fails to issue a Change Order acceptable to D/B CDA Developer, then following 365 Days after the Proposal Date, D/B CDA Developer’s sole remedy shall be to terminate this Agreement by delivery of notice of termination to the CTRMA.

13.3 Payments.

Payment to D/B CDA Developer of the Development Price shall be made in accordance with the procedures set forth in this Section 13.3.

13.3.1 Delivery of Draw Request.

On or about the fifth Business Day of each month, D/B CDA Developer shall deliver to the CTRMA five copies of a Draw Request in the form attached hereto as Exhibit L and meeting all requirements specified herein except as otherwise approved in writing by the CTRMA. Each Draw Request shall be executed by a designated and authorized representative of D/B CDA Developer appointed by D/B CDA Developer to have such authority in accordance with this Agreement. D/B CDA Developer acknowledges that the CTRMA will obtain funding for portions of the Development Work from the federal government, local agencies, the D/B CDA Developer, if applicable, and other third parties, and D/B CDA Developer agrees to segregate Draw Requests for all such Development Work in a format reasonably requested by the CTRMA and with detail and information as reasonably requested by the CTRMA. Each Draw Request

shall be organized to account for applicable reimbursement requirements and to facilitate the reimbursement process.

13.3.2 Contents of Draw Request.

Each Draw Request must contain the following items:

- (a) Draw Request cover sheet;
- (b) Monthly progress report as described in Technical Provision 1;
- (c) Certification by the Design Quality Control Manager and the Construction Quality Control Manager that all Development Work which is the subject of the Draw Request fully complies with the requirements of the Contract Documents subject to any exceptions identified in the certification;
- (d) Draw Request data sheet(s) and supporting documents, as required by the CTRMA to support and substantiate the amount requested (based on quantities and unit prices for unit priced Development Work, based on time and materials for Time and Materials Change Orders, based on actual costs as evidenced by invoices for items to be paid from an allowance, and based on the Project Schedule of Values for all other Development Work);
- (e) DBE utilization report in a format reasonably satisfactory to the CTRMA;
- (f) Cash flow curves and comparison to the Payment Curve;
- (g) A CTRMA reviewed and updated Project Schedule;
- (h) A waiver of lien from each applicable Subcontractor that was scheduled to be paid pursuant to the previous month's Draw Request;
- (i) Certified invoices for materials on hand in accordance with Section 13.3.12; and
- (j) Such other items as the CTRMA reasonably requests.

In addition, no Draw Request shall be considered complete unless it: (1) describes in detail the status of completion as it relates to the Project Schedule; (2) sets forth in detail the related payments which are then due in accordance with the Project Schedule of Values, as of the end of the prior month; (3) in the case of amounts to be paid on a unit price basis, includes invoices, receipts or other evidence establishing the number of units delivered; (4) in the case of amounts invoiced on a time and materials basis, includes all supporting documentation described in Section 14.7; and (5) sets forth in detail the amounts paid to Subcontractors (including

Suppliers and sub-subcontractors) from the payments made by the CTRMA to D/B CDA Developer with respect to the prior month's Draw Request, including executed unconditional waivers of claims with respect to all amounts so paid.

13.3.3 Draw Request Cover Sheet Contents.

The Draw Request cover sheet shall include the following:

- (a) Project number and title;
- (b) Request number (numbered consecutively starting with "1");
- (c) Total amount earned to date for the Project as a whole in order to allow the CTRMA to calculate, withhold, deposit, or release Retainage in accordance with the terms hereof; and
- (d) Authorized signature, title of signer, and date of signature.

13.3.4 Certification by Design Quality Control Manager and Construction Quality Control Manager.

With each Draw Request, D/B CDA Developer shall submit a certificate in the form attached hereto as Exhibit L and signed and sealed by the Design Quality Control Manager and Construction Quality Control Manager, certifying that:

- (a) All Development Work, including that of designers, Subcontractors, including Suppliers and fabricators, which is the subject of the Draw Request has been checked and/or inspected by the Design Quality Management team and the Construction Quality Management team;
- (b) Except as specifically noted in the certification, all Development Work which is the subject of the Draw Request conforms to the requirements of the Contract Documents, the Governmental Approvals and applicable Law;
- (c) The Design QMP and the Construction QMP and all of the measures and procedures provided therein are functioning properly and are being followed in all respects; and
- (d) The design and construction quantities, percentages and cost indicated are accurate and correct.

13.3.5 [Reserved].

13.3.6 Draw Request Data Sheets.

Draw Request data sheets shall be subdivided into D/B CDA Developer-designated Project segments and shall be attached to a Project-wide report and Draw Request data sheet. It is the intent of the CTRMA to base payments on a mutually agreed estimate of percentage of Development Work completed, not on measured quantities, except that cost plus or unit price Change Order work or items to be paid from an allowance may be paid based upon measured quantities. D/B CDA Developer's designation of activities, phases and Project segments and their representation on the final approved Project Schedule and the corrected monthly progress reports shall facilitate this basis of determining periodic payments. Where progress is measured by percentage complete and days remaining, the percentage shall be calculated using Primavera P6. D/B CDA Developer may present the format of the Draw Request data sheets for CTRMA approval at least twenty (20) Business Days prior to the submittal of the first Draw Request. Once the Draw Request format has been approved by the CTRMA, the format shall not change without prior written approval of the CTRMA.

13.3.7 Payment by the CTRMA.

Within fifteen (15) Business Days after the CTRMA's receipt of a complete Draw Request, the CTRMA will review the Draw Request and all attachments and certificates thereto for conformity with the requirements of the Contract Documents, and shall notify D/B CDA Developer of the amount approved for payment and the reason for disapproval of any remaining invoiced amounts or of any other information set forth in the Draw Request. D/B CDA Developer may include such disapproved amounts in the next month's Draw Request after correction of the deficiencies noted by the CTRMA. All such disapproved amounts shall be deemed in dispute unless otherwise agreed. Within thirty (30) Business Days after submittal of a Draw Request in conformity with the requirements of the Contract Documents, the CTRMA shall pay D/B CDA Developer the amount of the Draw Request approved for payment less any applicable Retainage and less any amounts which the CTRMA is otherwise entitled to withhold or deduct. In no event shall D/B CDA Developer be entitled to (a) payment for any activity in excess of the value of the activity times the completion percentage of such activity (for non-unit priced Work), or (b) aggregate payments hereunder in excess of the overall completion percentage for the Project times the Development Price (for non-unit-priced Work).

13.3.8 Payment to Subcontractors.

D/B CDA Developer shall promptly pay each Subcontractor for Development Work no later than ten (10) Days after receipt of payment for such Development Work from the CTRMA, the amount to which such Subcontractor is entitled, less any retainage provided for in the Subcontract, as well as any other offsets and deductions provided in the Subcontract or by Law. D/B CDA Developer further agrees to pay retainage to each Subcontractor within ten Days after

the Subcontractor's work is satisfactorily completed. For the purpose of this Section 13.3.8, satisfactory completion shall have been accomplished when:

(a) the Subcontractor has fulfilled the Subcontract requirements and the requirements under the Contract Documents for the subcontracted Development Work, including the submission of all submittals required by the Subcontract and Contract Documents; and

(b) the Development Work performed by the Subcontractor has been inspected and approved in accordance with the Contract Documents and the final quantities of the Subcontractor's work have been determined and agreed upon.

The inspection and approval of a Subcontractor's work does not eliminate or impair the D/B CDA Developer's responsibility for the Development Work under this Agreement. Any delay or postponement of payments to Subcontractors from the above-referenced time frames may occur only for good cause following written approval by the CTRMA. D/B CDA Developer shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to sub-subcontractors in a similar manner. The CTRMA shall have no obligation to pay a Subcontractor. Interest on late payments to Subcontractors shall be D/B CDA Developer's responsibility, and shall not be a part of the Development Price. The foregoing payment requirements apply to all tiers of Subcontractors and shall be incorporated by D/B CDA Developer into all Subcontracts.

13.3.9 Continued Performance During Disputes.

Failure by the CTRMA to pay any amount in dispute shall not postpone, alleviate, diminish, release, alter or modify in any respect D/B CDA Developer's obligation to perform under the Contract Documents, including D/B CDA Developer's obligation to achieve Interim Completion by the Interim Completion Deadline, to achieve Substantial Completion by the Completion Deadline, to achieve Final Acceptance by the Acceptance Deadline and to complete all Development Work in accordance with the Contract Documents, and D/B CDA Developer shall not cease or slow down its performance under the Contract Documents on account of any such dispute. Notwithstanding the foregoing, CTRMA shall be required to submit payment of those amounts not in dispute and/or approved for payment. Any dispute regarding such payment shall be resolved pursuant to Section 25 of this Agreement. Upon resolution of any such dispute, subject to the limitations specified in this Section 13, the CTRMA shall promptly pay to D/B CDA Developer any amount identified through the dispute resolution process as owing to D/B CDA Developer. If payment of disputed amounts is made after the 30th Day following the proper submission of a complete Draw Request, then the payment shall, subject to the limitations specified in this Section 13, include interest on the amount owing, from the date that the payment was due (based on the agreement of the Parties or the decision of the judge) until the date of

payment, which shall accrue at the rate equal to the lesser of (i) 12% per annum or (ii) the maximum rate allowable under applicable Law.

13.3.10 Retainage.

13.3.10.1 The CTRMA shall not withhold funds as retainage from payments to be made to D/B CDA Developer for the Development Work until such time as 95% of the Work has been completed and payment therefore has been made to the D/B CDA Developer. Following completion of and payment for 95% of the Development Work, the CTRMA shall withhold, as retainage (the "Retainage"), the remaining 5% of the Development Price pursuant to the terms described below.

13.3.10.2 The Retainage for Development Work, subject to reduction as specified below, shall be held by the CTRMA until 60 Days after Final Acceptance of the Project. At such time, and provided that D/B CDA Developer is not in breach or default hereunder, the CTRMA shall release to D/B CDA Developer all Retainage withheld in connection with Development Work other than amounts applied to the payment of Losses or which the CTRMA deems advisable, in its sole discretion, to retain to cover any existing or written threatened claims, Liens and stop notices relating to the Project, including claims by Utility Owners and any railroad, the cost of any uncompleted Development Work and/or the cost of repairing any Nonconforming Work. Final payment of such Retainage not applied to Losses shall be made upon D/B CDA Developer's showing, to the CTRMA's satisfaction, that all such matters have been resolved, including delivery to the CTRMA of a certification representing and warranting that there are no outstanding claims of D/B CDA Developer or any claims, Liens or stop notices of any Subcontractor or laborer with respect to the Development Work.

13.3.10.3 Prior to the release of any Retainage by the CTRMA pursuant to the terms hereof, such amounts shall be held by the CTRMA in a separate account. Upon the release of any Retainage, D/B CDA Developer shall not be entitled to any interest income that has accrued upon the amounts of Retainage released to D/B CDA Developer.

13.3.11 Deductions.

In addition to the deductions provided for above, the CTRMA may deduct from each payment to D/B CDA Developer under this Agreement the following:

(a) Any CTRMA or third party claims or Losses for which D/B CDA Developer is responsible under the Contract Documents or any Liquidated Damages which have accrued as of the date of payment, except to the extent an insurance claim therefor has been accepted by the insurer without any reservation of rights to deny coverage;

(b) Any sums expended by the CTRMA in performing any of D/B CDA Developer's obligations under this Agreement which D/B CDA Developer has failed to perform, with interest thereon from date on which the CTRMA expended such sums at the lesser of (i) 12% per annum or (ii) the maximum rate allowable under applicable Law;

(c) Any existing or written threatened claims, Liens and stop notices of Subcontractors, laborers, Utility Owners and other third parties against D/B CDA Developer or against the CTRMA as a result of the actions or failure to act by D/B CDA Developer, relating to the Project; and

(d) Any other sums which the CTRMA is entitled to recover from any member of the D/B CDA Developer Group under the terms of this Agreement.

The failure by the CTRMA to deduct any of these sums from a payment to D/B CDA Developer shall not constitute a waiver of the CTRMA's right to recover such sums or to deduct such funds from future payments.

13.3.12 **Materials On Hand.**

The CTRMA will not pay for any material not yet incorporated in the Development Work other than precast concrete, reinforcing steel, structural steel, precast concrete members, stone, gravel, sand or other non-perishable materials that will be permanently incorporated in the Development Work. Payment for such items will be made only if all of the following conditions have been met:

13.3.12.1 Material shall be delivered to the Site, or delivered to D/B CDA Developer and promptly stored by D/B CDA Developer at a location approved by the CTRMA in its sole discretion. Prior to inclusion of such materials in any invoice, D/B CDA Developer shall submit certified bills for such materials to the CTRMA. The CTRMA shall allow only such portion of the amount represented by these bills as in its opinion is consistent with the reasonable cost of such materials. If such materials are stored at any site not approved by the CTRMA, D/B CDA Developer shall accept responsibility for and pay all personal and property taxes that may be levied against the CTRMA by any state or subdivision thereof on account of such storage of such material. The CTRMA will permit D/B CDA Developer, at its own cost, to in good faith contest the validity of any such tax levied against the CTRMA in appropriate proceedings and in the event of any judgment or decree of a court, D/B CDA Developer agrees to pay same together with any penalty or other costs, relating thereto.

13.3.12.2 All such materials so accepted shall be and become the property of the CTRMA. D/B CDA Developer at its own cost shall promptly execute, acknowledge and deliver to the CTRMA proper bills of sale or other instruments in writing in a form acceptable to the CTRMA conveying and assuring to the CTRMA title to such material included in any

invoice, free and clear of all Liens. D/B CDA Developer at its own cost shall conspicuously mark such material as the property of the CTRMA, shall not permit such materials to become commingled with non-CTRMA-owned property and shall take such other steps, if any, as the CTRMA may require or regard as necessary to vest title to such material in the CTRMA free and clear of Liens.

13.3.12.3 Material included in an invoice but which is subsequently lost, damaged or unsatisfactory shall be deducted from succeeding invoices.

13.3.12.4 Payment for material furnished and delivered as indicated in this Section 13.3.12 will not exceed the amount paid by D/B CDA Developer as evidenced by a bill of sale supported by paid invoice. The CTRMA shall withhold Retainage from such payment as specified in Section 13.3.10.

13.3.13 **Mobilization.**

D/B CDA Developer shall be entitled to mobilization payments in accordance with this Section 13.3.13 and Technical Provision 23.2. Payment for the cost of mobilization shall not exceed 10% of the Development Price. Payment for such mobilization will be made in three (3) equal payments as follows, but in no event earlier than the first progress payment after the issuance by the CTRMA of NTP (a) First Payment (25% of mobilization cost) will be paid with the first progress payment after the issuance by the CTRMA of NTP; (b) Second Payment (50% of mobilization costs) will be paid when at least 5% of the Development Price (less mobilization and materials on hand) is earned; and (c) Final Payment (25% of mobilization costs) will be paid when at least 25% of the Development Price (less mobilization and materials on hand) is earned.

13.3.14 **Equipment.**

The CTRMA will not pay for direct costs of equipment. Payment for equipment, whether new, used or rented, shall be allocated to and paid for as part of the mobilization payments allowed hereunder and/or as part of the compensation allowed for the activities with which the equipment is associated.

13.3.15 **Bond and Insurance Premiums.**

The amount payable to D/B CDA Developer for bond and insurance premiums shall be a dollar-for-dollar pass through of D/B CDA Developer's costs (not to exceed the line item for such premiums set forth in the Proposal), with any excess portion of the line item for such premiums set forth in the Proposal to be paid upon achievement of Substantial Completion of the Project and the opening of the Project.

13.4 **[Reserved].**

13.5 Compensation for Early Completion.

As an inducement to D/B CDA Developer to achieve Substantial Completion and Interim Completion in advance of the original Completion Deadline and Interim Completion Deadline, the CTRMA agrees to pay D/B CDA Developer a bonus for early Substantial Completion of the Project prior to the original Completion Deadline and early Interim Completion prior to the original Interim Completion Deadline (the “**Incentive Payment**”), as follows:

13.5.1 If D/B CDA Developer achieves Substantial Completion of the Project in accordance with Section 20.1 prior to the original Completion Deadline, D/B CDA Developer shall be entitled to receive \$45,000 per day up to an aggregate amount of \$2,700,000 for all Incentive Payments payable for Substantial Completion of the Project. If D/B CDA Developer achieves Interim Completion of the Interim Development Work in accordance with Section 20.2 prior to the Interim Completion Deadline, D/B shall be entitled to receive \$5,000 per day up to an aggregate of \$900,000 for all Incentive Payments payable for Interim Completion.

13.5.2 Incentive Payments under Section 13.5.1 shall be paid by the CTRMA to D/B CDA Developer in accordance with the draw request provisions contained in Section 13.3 hereof. The CTRMA shall have the right to offset any amounts owing from D/B CDA Developer to the CTRMA against amounts payable under this Section 13.5.

13.5.3 If the Completion Deadline or Interim Completion Deadline has been extended beyond the original deadline, and D/B CDA Developer achieves Substantial Completion or Interim Completion prior to said extended deadlines, D/B CDA Developer shall be entitled to receive an Incentive Payment for Substantial Completion or Interim Completion prior to such extended deadline and after the original Completion Deadline or Interim Completion Deadline. The amount of such payment shall be calculated in accordance with Section 13.5.1 (replacing references to the “original Completion Deadline” and “original Interim Completion Deadline” therein with references to the “extended Completion Deadline” and the “extended Interim Completion Deadline”) and shall be subject to the other provisions of this Section 13.5.

13.6 Final Payment.

Final Payment for the Project will be made as follows:

13.6.1 On or about the date of Final Acceptance of the Project, D/B CDA Developer shall prepare and submit a proposed Final Draw Request to the CTRMA showing the proposed total amount due D/B CDA Developer, including any amounts owing from Change Orders, for Development Work relating to the Project. In addition to meeting all other requirements for invoices hereunder, the Final Draw Request shall list all outstanding PCO Notices, stating the amount at issue associated with each such notice. The Final Draw Request shall be accompanied by (a) evidence regarding the status of all existing or written threatened claims, Liens and stop

notices of Subcontractors, laborers, Utility Owners and railroads against D/B CDA Developer or against the CTRMA, (b) consent of any Guarantors and Surety to Final Payment, (c) such other documentation as the CTRMA may reasonably require; and (d) the release described in Section 13.6.4, executed by D/B CDA Developer. Prior applications and payments shall be subject to correction in the Final Draw Request. PCO Notices filed concurrently with the Final Draw Request must meet all requirements under Sections 14 and 25.

13.6.2 If the Final Draw Request shows no existing or written threatened claims, Liens and stop notices of Subcontractor, laborers, Utility Owners or railroads against D/B CDA Developer or against the CTRMA, and provided the Final Draw Request has been approved, the CTRMA, in exchange for an executed release meeting the requirements of Section 13.6.4 and otherwise satisfactory in form and content to the CTRMA, will pay the entire sum found due on the approved Final Draw Request, less the amount of any Losses that have accrued as of the date of the Final Payment.

13.6.3 If the Final Draw Request lists any existing or written threatened claims, Liens and stop notices of Subcontractors, laborers, Utility Owners or railroads against D/B CDA Developer or against the CTRMA, or if any is thereafter filed, the CTRMA may withhold from the payment of the amounts set forth on the approved Final Draw Request such amount as the CTRMA deems advisable to cover any amounts owing to the CTRMA by D/B CDA Developer, including costs to complete or remediate uncompleted Development Work or Nonconforming Work, and the amount of any existing or threatened claims, Liens and stop notices of Subcontractors, laborers, Utility Owners and railroads against D/B CDA Developer or against the CTRMA.

13.6.4 The executed release from D/B CDA Developer shall be from any and all claims arising from the Development Work, and shall release and waive any claims against the Indemnified Parties, excluding only (i) those matters identified in any PCO Notices listed as outstanding in the Final Draw Request and (ii) any other disputes previously identified in writing to the CTRMA by the D/B CDA Developer, provided such disputes are not otherwise by the Contract Documents required to be the subject of a PCO Notice. The release shall be accompanied by an affidavit from D/B CDA Developer certifying:

(a) that all Development Work has been performed in strict accordance with the requirements of the Contract Documents;

(b) that D/B CDA Developer has resolved any claims made by Subcontractors, Utility Owners, any railroad and others against D/B CDA Developer or the Project except as to claims against the Payment Bond;

(c) that D/B CDA Developer has no reason to believe that any Person has a valid claim against D/B CDA Developer or the Project which has not been communicated in writing by D/B CDA Developer to the CTRMA as of the date of the certificate; and

(d) that all guarantees, Warranties and the Payment Bond and the Performance Bond are in full force and effect.

Said release and the affidavit shall survive Final Payment.

13.6.5 All prior Draw Requests shall be subject to correction in the Final Draw Request.

13.6.6 The CTRMA will review D/B CDA Developer's proposed Final Draw Request, and changes or corrections will be forwarded to D/B CDA Developer for correction within 15 Business Days. The CTRMA shall pay any undisputed amounts, less any Losses that have accrued as of the date of the Final Payment, within 30 Days after its approval of such amounts on the application for Final Payment, but not earlier than the date of Final Acceptance. If no changes or corrections are required, the CTRMA will accept the Final Draw Request and make such payment within 30 Days after its acceptance thereof.

13.7 Taxes.

13.7.1 D/B CDA Developer shall pay, prior to delinquency, any and all sales and use taxes, property taxes and other taxes, fees, charges or levies (not based on income) imposed by a Governmental Entity on D/B CDA Developer which are related to the Development Work; provided, however, that D/B CDA Developer shall not be in breach of this Section 13.7 for failure to make such payments prior to delinquency to the extent that (i) such failure is due to a good faith dispute by D/B CDA Developer as to whether D/B CDA Developer is subject to such taxes or the amount thereof; (ii) D/B CDA Developer seeks expeditiously to resolve such dispute; (iii) such taxes will not become a Lien against the Project and/or the Final ROW; (iv) failure to pay such taxes during the pendency of such dispute shall not adversely affect the Project; and (v) D/B CDA Developer posts such bonds or other security reasonably requested by the CTRMA.

13.7.2 D/B CDA Developer and CTRMA acknowledge that CTRMA is exempt from paying sales tax on Expendable Materials purchases within the State with respect to the Project. If material and equipment purchases for the Development Work are not wholly used or expended on the Project, D/B CDA Developer shall be responsible for applicable sales taxes.

13.8 Value Added Concepts.

The proposals submitted by the D/B CDA Developer to the CTRMA for Value-Added Concepts shall be valid for a period of 365 days from the Proposal Date; provided, however, that

D/B CDA Developer shall not be required to implement a Value-Added Concept for the price proposed in its Proposal if the D/B CDA Developer specified in its Proposal that such Value-Added Concept could only be implemented if accepted by CTRMA at execution of this Agreement. If the CTRMA does not incorporate the terms of a Value-Added Concept into the Agreement as a contractual obligation during finalization/execution of this Agreement then it may do so as a Change Order under this Agreement. The scope contained in the Value-Added Concept shall be unchanged within the 365 day period; any changes shall be agreed to in writing by both parties. The price contained in the Value-Added Concept shall initially be valid for acceptance by the CTRMA for a period of 120 days after the Proposal Date. The CTRMA shall have the right to extend this date for up to an additional 245 days, provided that the Value-Added Concept price will be subject to increase or decrease based on the *Engineering News Record Construction Cost Index* (“**ENR CCI**”), commencing as of the expiration of the 120-day period. The procedure for determining the increase or decrease in the Value-Added Concept price shall be the same as set forth in Section 13.2.2.1 above.

14. CHANGES IN THE DEVELOPMENT WORK.

This Section 14 sets forth the requirements for obtaining all Change Orders under this Agreement. D/B CDA Developer acknowledges and agrees that the Development Price constitutes full compensation for performance of all Development Work, subject only to those express exceptions specified in this Section 14, and that the CTRMA is subject to constraints which limit its ability to increase the Development Price or to extend contractual deadlines for performance. D/B CDA Developer unconditionally and irrevocably waives the right to any claim for a time extension or for any monetary compensation in addition to the Development Price and other compensation specified in this Agreement for the Development Work, except as expressly set forth in this Section 14. To the extent that any other provision of this Agreement expressly provides for a Change Order to be issued, such provision is incorporated into and subject to this Section 14.

14.1 Change Orders.

14.1.1 Definition of and Requirements Relating to Change Orders.

14.1.1.1 Change Orders.

The term “**Change Order**” shall mean a written amendment to the terms and conditions of the Contract Documents issued in accordance with this Section 14. The CTRMA may issue unilateral Change Orders as specified in Section 14.2. Change Orders may be requested by D/B CDA Developer only pursuant to Section 14.3. Change Orders may be issued for the following purposes (or combination thereof):

- (a) to modify the scope of the Development Work;

(b) to revise the Interim Completion Deadline, the Completion Deadline or the Acceptance Deadline;

(c) to revise the Development Price; and

(d) to revise other terms and conditions of the Contract Documents.

Upon the CTRMA's approval of the matters set forth in the Change Order form, whether it is initiated by the CTRMA or D/B CDA Developer, the CTRMA shall execute such Change Order form.

14.1.1.2 **Issuance of Directive Letter.**

The CTRMA may, at any time, issue a letter to D/B CDA Developer in the event of any desired change in the Development Work or in the event of any dispute regarding the scope of the Development Work to be performed by D/B CDA Developer (a "**Directive Letter**"). The Directive Letter will describe the Development Work in question and will state the basis for determining compensation, if any. D/B CDA Developer will proceed immediately with the Development Work as directed in the Directive Letter, pending the execution of a formal Change Order or, if the Directive Letter states that the Development Work is within the original scope of the Development Work, D/B CDA Developer will proceed with the Development Work as directed, but shall have the right to submit the question of entitlement to a Change Order and the amount of allowable additional compensation and time to dispute resolution in accordance with Section 25 of this Agreement.

14.1.1.3 **Prerequisites for Change Orders for Work Outside of Scope.**

As a condition precedent to D/B CDA Developer's entitlement to a price increase or time extension for work which D/B CDA Developer believes is outside of the scope of the Development Work, D/B CDA Developer shall have received either a Directive Letter from the CTRMA stating that it is issued pursuant to Section 14.1.1.2 or a Change Order for such item signed by the CTRMA. D/B CDA Developer shall not be entitled to additional compensation or time extension for any such work performed prior to receipt of a Directive Letter or Change Order, except to the extent that Section 14.3.2.2 preserves D/B CDA Developer's right to compensation for work performed following delivery of a Request for Change Order Resolution Meeting. D/B CDA Developer acknowledges that it will be at risk if it elects to proceed with any such work, since CTRMA may later decide not to provide direction with regard to such work.

14.1.1.4 Additional Provisions Concerning Directive Letters.

In addition to provision of a Proposed Change Order (“PCO”) Notice and subsequent Change Order request pursuant to Section 14.3.2, receipt of a Directive Letter from the CTRMA shall be a condition precedent to D/B CDA Developer’s right to make a Claim that a CTRMA-Directed Change has occurred. However, the fact that a Directive Letter was issued by the CTRMA shall not be considered evidence that a CTRMA-Directed Change has occurred. The determination as to whether a CTRMA-Directed Change has occurred shall be based on an analysis of the original requirements of the Contract Documents and a determination whether the Directive Letter constituted a change in those requirements. The foregoing requirements do not require that a Directive Letter be issued by the CTRMA in order for D/B CDA Developer to have the right to receive compensation for Development Work within the original scope of the Development Work (such as certain types of Utility Adjustment Work) for which additional compensation is specifically allowed under this Section 14.

14.1.2 Right of the CTRMA to Issue Change Orders.

The CTRMA may, at any time and from time to time, without notice to any Surety or Guarantor, authorize and/or require changes in the Development Work within the general scope of the Development Work pursuant to a Change Order. All additions, deductions or changes to the Development Work as directed by Change Orders shall be executed under the conditions of the original Contract Documents.

14.2 Procedure for Issuance of Change Orders by the CTRMA.

This Section 14.2 concerns Change Orders issued by the CTRMA following a Request for Change Proposal and Change Orders unilaterally issued by the CTRMA.

14.2.1 Request for Change Proposal.

14.2.1.1 If the CTRMA desires to issue a CTRMA-Directed Change or to evaluate whether to initiate such a change, the CTRMA may, at its discretion, issue a Request for Change Proposal. The CTRMA may, at any time, ask D/B CDA Developer to provide two alternative Change Order forms in accordance with Section 14.3.3.

14.2.1.2 Within five Business Days after D/B CDA Developer’s receipt of a Request for Change Proposal, the CTRMA and D/B CDA Developer shall arrange an initial consultation (at no charge to the CTRMA) concerning the estimated cost and time impacts. D/B CDA Developer shall provide data regarding such matters as requested by the CTRMA.

14.2.1.3 After the initial consultation and delivery by D/B CDA Developer of data and information as described in Section 14.2.1.2, the CTRMA shall notify D/B CDA

Developer whether the CTRMA (a) wishes to issue a Change Order, (b) wishes to request D/B CDA Developer to prepare a Change Order form as discussed at the consultation, or (c) no longer wishes to issue a Change Order.

14.2.1.4 If so requested, D/B CDA Developer shall, within ten (10) Business Days after receipt of the notification described in Section 14.2.1.3 (as such deadline may be extended by the CTRMA), prepare and submit to the CTRMA a Change Order form, complying with all applicable requirements of Section 14.6.1 and incorporating and fully reflecting all requests made by the CTRMA. If D/B CDA Developer determines that it cannot meet the time allowed, D/B CDA Developer shall notify the CTRMA in writing of D/B CDA Developer's proposed deadline for providing the Change Order form, which deadline shall be subject to approval in writing by the CTRMA. Development of the cost estimate and scope, including any modifications thereto requested by the CTRMA, shall be made at D/B CDA Developer's cost and expense, except that costs of design and engineering work required for preparation of plans or exhibits necessary to the Change Order form shall be included in the Change Order as reimbursable items.

14.2.1.5 If the Parties agree that a change in the requirements relating to the Development Work has occurred, but disagree as to whether the change justifies additional compensation or time or disagree as to the amount of any increase to be made to the Development Price or extension of time, the CTRMA may, in its sole discretion, order D/B CDA Developer to proceed with the performance of the Development Work in question notwithstanding such dispute. Such order may, at the CTRMA's option, be in the form of: (a) a Time and Materials Change Order as provided in Section 14.7 or (b) a Directive Letter under Section 14.1.1.2.

14.2.1.6 Issuance of NTP by the CTRMA shall be deemed to constitute a Request for Change Proposal with respect to any delay in issuance of NTP entitling D/B CDA Developer to a Change Order in accordance with Section 13.2.

14.2.1.7 In the event the CTRMA shall issue a Request for Change Proposal requesting that D/B CDA Developer implement a value added concept proposed by D/B CDA Developer in its Proposal, D/B CDA Developer shall be required to provide the additional Development Work related to such change order for an amount not to exceed the price proposed by D/B CDA Developer for such value added concept in its Proposal so long as such Request for Change Proposal is issued by the CTRMA within 365 Days of the Proposal Date. Any such Request for Change Proposal to implement a value added concept that is issued by the CTRMA more than 210 Days after the Proposal Date shall be subject to adjustment based on the formula contained in Section 13.2.2.1. Notwithstanding the above, the D/B CDA Developer shall not be required to implement a value added concept for the price proposed in its Proposal if

the D/B CDA Developer specified in its Proposal that such value added concept could only be implemented if accepted by the CTRMA at the time of the execution of this Agreement.

14.2.2 Unilateral Change Orders for CTRMA-Directed Changes.

The CTRMA may issue a Change Order for a CTRMA-Directed Change at any time, regardless of whether it has issued a Request for Change Proposal. Any such Change Order shall state that D/B CDA Developer shall be entitled to compensation in accordance with Section 14.7 for the additional Development Work required thereby and an extension in the Interim Completion Deadline and/or the Completion Deadline if permitted pursuant to Section 14.3.1.1.

14.3 D/B CDA Developer-Requested Change Orders.

14.3.1 Eligible Changes.

14.3.1.1 D/B CDA Developer may request a Change Order to extend the Interim Completion Deadline, the Completion Deadline or the Acceptance Deadline only for delays directly attributable to (a) CTRMA-Caused Delays; (b) Force Majeure Events; or (c) Hazardous Material Delays to the extent allowed pursuant to Section 14.8.5 (subject in all cases to a requirement to show that the delay actually extended the duration of a Critical Path so as to delay Interim Completion, Substantial Completion or Final Acceptance beyond the applicable deadline).

14.3.1.2 D/B CDA Developer may request a Change Order to increase the Development Price, subject to strict compliance with the requirements of this Section 14 and Section 13, only for increased costs of the Development Work as follows:

(a) Additional costs directly attributable to additional Development Work resulting from CTRMA-Directed Changes for which the CTRMA has not submitted a Change Order or a Request for Change Proposal;

(b) Additional costs directly attributable to CTRMA-Caused Delays;

(c) Additional costs directly attributable to Force Majeure Events, excluding costs which are compensable by the builder's risk or any other insurance required to be provided hereunder, and subject to Section 14.10;

(d) Additional costs of Hazardous Materials Management, to the extent specified in Section 14.8, but subject to Section 7.5;

(e) Additional costs relating to Differing Site Conditions, to the extent specified in Section 14.9;

(f) Additional costs with respect to Utility Adjustment Work, to the extent specified in Section 14.12;

(g) Subject to prior approval by the CTRMA, additional costs related to redesign where discovery of Hazardous Materials requires a change to D/B CDA Developer's previously prepared design plans; and

(h) Additional costs related to repairs resulting from third party actions to the extent specified in Section 11.2.

14.3.2 Notification Requirements as Conditions Precedent.

In all circumstances except those involving a Request for Change Proposal or escalation pursuant to Section 13.2.2, D/B CDA Developer's entitlement to request a Change Order shall be contingent on its compliance with the requirements set forth in this Section 14.3.2.

14.3.2.1 Delivery of Requests for Change Order Resolution Meeting and PCO Notices.

D/B CDA Developer acknowledges the importance of providing prompt notification to the CTRMA upon occurrence of any event or thing entitling D/B CDA Developer to a Change Order under Section 14.3.1. Among other things, such notification serves the purpose of allowing the CTRMA to take action to mitigate adverse impacts. Such notification must be delivered as promptly as possible after the occurrence of such event or situation, through either (a) a PCO Notice as described in Section 14.3.2.3 or (b) if permitted by Section 14.3.2.2, a Request for Change Order Resolution Meeting followed by a PCO Notice if appropriate. D/B CDA Developer understands that it shall be forever barred from recovering against the CTRMA unless it gives such written notice(s) and, thereafter, files a request for Change Order with the CTRMA and complies with the remaining requirements of this Section 14.3.2.

14.3.2.2 Requests for Change Order Resolution Meeting.

The term "**Request for Change Order Resolution Meeting**" shall mean a notice delivered by D/B CDA Developer requesting that the CTRMA schedule a meeting with D/B CDA Developer to discuss an event or situation that has occurred within the scope of Section 14.3.1.2. The Request for Change Order Resolution Meeting shall reference this Section 14.3.2.2 and shall describe the event or situation as well as action which D/B CDA Developer would like to take with respect thereto. The parties shall promptly meet and confer for

the purpose of determining what action should be taken and also to determine whether the parties are in agreement as to entitlement to a Change Order. Either party may at any time terminate partnering discussions by delivery of written notice to the other, and partnering discussions shall automatically terminate 60 Days after delivery of the Request for Change Order Resolution Meeting unless both parties agree in writing to an extension. Within two (2) Business Days after termination of change order resolution discussions, if CTRMA has not issued either a Directive Letter or Change Order, D/B CDA Developer must submit a PCO Notice in order to preserve its right to pursue a Change Order. The foregoing process is not available for events or situations involving a delay to the Critical Path. With regard to any such events or situations, D/B CDA Developer must submit a PCO Notice as provided in Section 14.3.2.3.

14.3.2.3 **PCO Notices.**

The term “**PCO Notice**” shall mean a proposed change order notice delivered by D/B CDA Developer, meeting the requirements set forth below, stating that an event or situation has occurred within the scope of Section 14.3.1.1 or Section 14.3.1.2 and stating which section thereof is applicable. The first notice shall be labeled “PCO Notice No. 1” and subsequent notices shall be numbered sequentially.

14.3.2.3.1 The PCO Notice shall: (a) state in detail the facts underlying the claim for a Change Order, the reasons why D/B CDA Developer believes additional compensation or time will or may be due and the date of occurrence, (b) state the name, title, and activity of each CTRMA representative knowledgeable of the facts underlying the claim for a Change Order, (c) identify, and include copies of, any documents and the substance of any oral communication involved in the claimed change, (d) state in detail the basis for any claim of the necessity to accelerate schedule performance, (e) state in detail the basis for any claim that work is not required by the Contract Documents, (f) identify particular elements of performance for which additional compensation may be sought under this Section 14, (g) identify any potential Critical Path impacts, (h) provide an estimate of the time within which a response from the CTRMA to the PCO Notice is required to minimize cost, delay, or disruption of performance; and (i) to the degree possible, address price element(s) that have been or may be affected by the claimed change and provide a budget, such price estimate to be based on one of the following methods: (1) TxDOT Prices or (2) RS Means Heavy Construction Costs Data Book-Latest Edition.

14.3.2.3.2 If the claim relates to a decision which this Agreement leaves to the discretion of a Person or as to which this Agreement provides that such Person's decision is final, the PCO Notice shall set out in detail all facts supporting D/B CDA Developer's objection to the decision, including all facts supporting any contention that the decision was capricious or arbitrary or is not supported by substantial evidence.

14.3.2.3.3 Within fifteen (15) Business Days after receipt of a complete PCO Notice that meets the requirements of this Section 14.3.2.3, the CTRMA will respond in writing to D/B CDA Developer to: (a) confirm that a change has occurred; (b) deny that a change has occurred or (c) advise D/B CDA Developer that the necessary information has not been submitted to decide which of the above alternatives applies, and indicate the needed information and date by which it is to be received for further review. Failure of the CTRMA to respond shall not affect D/B CDA Developer's obligation to provide a request for Change Order within the time periods specified in this Section 14. Any adjustments made to this Agreement shall not include increased costs or time extensions for delay resulting from D/B CDA Developer's failure to provide a complete PCO Notice or requested additional information under this Section 14.3.2.3.

14.3.2.4 **Waiver.**

14.3.2.4.1 If any PCO Notice is delivered later than (10) ten Days after D/B CDA Developer first discovered (or should have discovered in the exercise of reasonable prudence) the occurrence which is described therein, or if it is delivered later than two Business Days following termination of change order resolution discussions, D/B CDA Developer shall be deemed to have waived (a) the right to collect any costs incurred prior to the date of delivery of the Request for Change Order Resolution Meeting (if applicable) or PCO Notice (if no Request for Change Order Resolution Meeting was submitted or if the PCO Notice was not timely submitted following termination of change order resolution discussions) and (b) the right to seek an extension of any deadline hereunder with respect to any delay in any Critical Path which accrued prior to the date of delivery of the PCO Notice. Furthermore, if the PCO Notice concerns any condition or material described in Section 7.5.1 or Section 14.10, D/B CDA Developer shall be deemed to have waived the right to collect any costs incurred in connection therewith if the CTRMA is not afforded the opportunity to inspect such material or condition before it is disturbed, unless D/B CDA Developer can demonstrate to CTRMA's reasonable satisfaction that its actions with respect to such condition or material were necessary to prevent imminent danger to persons, property or the environment.

14.3.2.4.2 In addition to the limitations described in Section 14.3.2.4.1, D/B CDA Developer's failure to provide a PCO Notice within 60 Days after D/B CDA Developer first discovered (or should have discovered in the exercise of reasonable prudence) the occurrence of a given event or situation shall preclude D/B CDA Developer from any relief, unless D/B CDA Developer can show, based on clear and convincing evidence, that (a) the CTRMA was not prejudiced by the lack of the PCO Notice, or (b) the CTRMA had actual knowledge, prior to the expiration of the 60-Day period, of the event or situation and that D/B CDA Developer believed it was entitled to a Change Order with respect thereto. For situations involving Requests for Change Order Resolution Meeting, the 60-Day period shall be extended until two Business Days following termination of the change order resolution period. In other

words, if the requirements of clause (a) or clause (b) above are satisfied, D/B CDA Developer shall retain the right to receive a Change Order, but shall be deemed to have waived the right to collect any and all costs incurred prior to the date of delivery of the PCO Notice or Request for Change Order Resolution Meeting, as applicable, and shall be deemed to have waived the right to seek a time extension with respect to any delay in any Critical Path which accrued prior to the date of delivery of the PCO Notice. The following factors (among others) shall be considered in determining whether the CTRMA has been prejudiced by D/B CDA Developer's failure to provide notice in a timely fashion: (y) the effect of the delay on alternatives available to the CTRMA; that is, a comparison of alternatives which are available at the time notice was actually given and alternatives which would have been available had notice been given within the required time period; and (z) the impact of the delay on the CTRMA's ability to obtain and review objective information contemporaneously with the event.

14.3.2.5 Delivery of Requests for Change Orders.

D/B CDA Developer shall deliver all requests for Change Orders under this Section 14.3 to the CTRMA within thirty (30) Days after delivery of the PCO Notice, or such longer period of time as may be reasonably necessary, provided that D/B CDA Developer shall have notified the CTRMA in writing prior to expiration of said 30-Day period how much additional time is required and obtained the CTRMA's approval of the same. The CTRMA may require design and construction costs to be covered by separate Change Order requests. If D/B CDA Developer fails to deliver a complete request for Change Order or incomplete request for Change Order meeting all the requirements of Section 14.3.2.6 within the appropriate time period, D/B CDA Developer shall be required to provide a new PCO Notice before it may submit a request for Change Order and D/B CDA Developer shall not be entitled to increased costs or time extensions resulting from D/B CDA Developer's failure to deliver a complete request for Change Order.

14.3.2.6 Incomplete Change Orders.

Each request for Change Order delivered by D/B CDA Developer shall meet all requirements set forth in Section 14.4; provided that if any such requirements cannot be met due to the nature of the occurrence, D/B CDA Developer shall provide an incomplete Change Order which shall:

- (a) Comply with all requirements capable of being met;
- (b) Include a list of requirements which are not fulfilled together with an explanation reasonably satisfactory to the CTRMA stating why such requirements cannot be met;

(c) Provide such information regarding projected impact on the Critical Path as is requested by the CTRMA; and

(d) In all events include sufficient detail to ascertain the basis for the proposed Change Order and for any price increase associated therewith, to the extent such amount is then ascertainable.

D/B CDA Developer shall furnish, when requested by the CTRMA, such further information and details as may be required to determine the facts or contentions involved. D/B CDA Developer agrees that it shall give the CTRMA access to any and all of D/B CDA Developer's books, records and other materials relating to the Development Work, and shall cause its Subcontractors to do the same, so that the CTRMA can investigate the basis for such proposed Change Order. D/B CDA Developer shall provide the CTRMA with a monthly update to all outstanding incomplete requests for Change Order, describing the status of all previously unfulfilled requirements and stating any changes in projections previously delivered to the CTRMA, time expenditures to date and time anticipated for completion of the activities for which the time extension is requested. The CTRMA may reject D/B CDA Developer's request at any point in the process. Once a complete request for Change Order is provided, the CTRMA's failure to respond thereto within fifteen (15) Business Days of receipt of the request shall be deemed a rejection of such request. Although the CTRMA intends to review incomplete Change Orders for the purposes described in this Section 14.3.2.6, the CTRMA shall have no obligation to review the back-up associated with any request for Change Order until a complete Change Order is provided.

14.3.2.7 Subcontractor Claims.

Prior to submission by D/B CDA Developer of any request for a Change Order which is based in whole or in part on any facts alleged in a submittal by any Subcontractor to D/B CDA Developer, D/B CDA Developer shall review all such Subcontractor claims and determine in good faith whether the claims are justified as to both entitlement and amount, and D/B CDA Developer's request for a Change Order shall include only those items which D/B CDA Developer has determined are so justified and which otherwise meet all requirements hereunder for D/B CDA Developer-requested Change Orders. D/B CDA Developer shall include with its request for Change Order a summary of its analysis of all Subcontractor claims components.

14.3.3 Submission of Request for Change Order.

D/B CDA Developer shall initiate each request for a Change Order, after satisfaction of all conditions precedent set forth above, by submitting a Change Order form and supporting documentation to the CTRMA for its review and approval. If D/B CDA Developer submits a request for Change Order requesting a time extension, as permitted by Section 14.3, then D/B

CDA Developer shall also provide an alternative Change Order form including a Recovery Schedule in accordance with Section 5.5.3. Change Orders may be prepared and submitted electronically.

14.3.4 Performance of Disputed Development Work.

If the CTRMA refuses to issue a Change Order based on D/B CDA Developer's request, D/B CDA Developer shall nevertheless promptly perform all work as specified in an appropriate Directive Letter, with the right to submit the issue of entitlement to a Change Order to dispute resolution in accordance with Section 25 of this Agreement. D/B CDA Developer shall maintain and deliver to the CTRMA, upon request, contemporaneous records, meeting the requirements of Section 14.7, for all work performed which D/B CDA Developer believes constitutes extra work (including non-construction work), until all Disputes regarding entitlement or cost of such work are resolved.

14.4 Contents of Change Orders.

14.4.1 Form of Change Order.

Each Change Order shall (a) be prepared in form acceptable to the CTRMA, (b) otherwise meet all applicable requirements of this Section 14 and (c) be substantially in the form of Exhibit M. Each Change Order shall specify whether it is subject to contingencies and shall identify the applicable section of this Section 14 under which the Change Order is issued.

14.4.2 Contents of Change Order.

D/B CDA Developer shall prepare a scope of work, cost estimate, delay analysis and other information as required by this Section 14.4.2 for each Change Order, other than Change Orders issued unilaterally by the CTRMA.

14.4.2.1 The scope of work shall describe in detail satisfactory to the CTRMA all activities associated with the Change Order, including a description of additions, deletions and modifications to the existing requirements of the Contract Documents and, if requested by the CTRMA, a description of steps taken by D/B CDA Developer to mitigate the cost of the work and delay impact and a description of alternative courses of action considered by D/B CDA Developer, together with an explanation as to why the alternatives were not selected.

14.4.2.2 The cost estimate shall set out the estimated costs in such a way that a fair evaluation can be made. It shall include a breakdown for labor, materials, equipment, overhead (which includes all indirect costs) and profit, unless the CTRMA agrees otherwise. The estimate shall include costs allowable under Section 14.5.3, if any. If the work is to be

performed by Subcontractors and if the work is sufficiently defined to obtain Subcontractor quotes, D/B CDA Developer shall obtain quotes (with breakdowns showing cost of labor, materials, equipment, overhead and profit) on the Subcontractor's stationery and shall include such quotes as back-up for D/B CDA Developer's estimate. No mark-up shall be allowed in excess of the amounts allowed under Sections 14.5 and 14.7. No additional payment will be made for Category A Personnel assigned to the Project or Category B Personnel assigned to the Project on a full time basis unless a time extension is granted by the CTRMA pursuant to Section 14.7.1(c). D/B CDA Developer shall identify all conditions with respect to prices or other aspects of the cost estimate, such as pricing contingent on firm orders being made by a certain date or the occurrence or non-occurrence of an event.

14.4.2.3 If D/B CDA Developer claims that such event, situation or change affects a Critical Path, it shall provide an impacted delay analysis indicating all activities represented or affected by the event, situation or change, with activity numbers, durations, predecessor and successor activities, resources and costs and a narrative report, in form satisfactory to the CTRMA, which compares the proposed new Project Schedule to the then-current approved Project Schedule.

14.4.2.4 D/B CDA Developer shall provide such other supporting documentation as may be required by the CTRMA.

14.4.3 Justification.

D/B CDA Developer shall provide a narrative justification to be included in each Change Order other than Change Orders issued unilaterally by the CTRMA, describing the circumstances underlying the proposed Change Order, identifying the specific provision(s) of Section 14 which permit a Change Order to be issued and describing the data and documents (including any required data and reports) which establish the necessity and amount of compensation and/or time extension sought by such proposed Change Order.

14.4.4 D/B CDA Developer Representation.

Each Change Order form shall contain a written representation by D/B CDA Developer in form acceptable to the CTRMA that the amount of time and/or compensation requested includes all known and anticipated direct, indirect and consequential impacts or amounts which may be incurred as a result of the event, occurrence or matter giving rise to such proposed Change Order, and that D/B CDA Developer has no reason to believe and does not believe that the factual basis for the Change Order is falsely represented.

14.5 Limitations on Change Orders.

14.5.1 Exclusion from Price Increase.

Any increase in the Development Price pursuant to a Change Order shall exclude: (a) costs caused by the breach, default, fault, wrongful act, wrongful omission, negligence, recklessness, gross negligence or willful misconduct of any member of the D/B CDA Developer Group; (b) costs to the extent they are unnecessary or could reasonably be avoided by D/B CDA Developer or the other members of the D/B CDA Developer Group, including by resequencing, reallocating or redeploying its forces to other portions of the Development Work or to other activities unrelated to the Development Work; and (c) costs for any rejected Development Work which failed to meet the requirements of the Contract Documents, applicable Law or the Governmental Approvals, or for any remedial work. Costs incurred for the purpose of mitigating damages as described in (b) above, and not otherwise disallowed hereunder, would be reimbursable.

14.5.2 Delay Damages and Acceleration Costs.

14.5.2.1 No Acceleration Costs or other delay or disruption damages shall be compensable hereunder under any circumstances, except in the case of CTRMA-Caused Delays or Force Majeure Events.

14.5.2.2 Before D/B CDA Developer may obtain any increase in the Development Price to compensate for additional or extended overhead, Acceleration Costs or other damages directly attributable to the CTRMA-Caused Delays, D/B CDA Developer shall be required to demonstrate to the CTRMA's satisfaction that:

(a) The Project Schedule which defines the affected Critical Path was, in its inception, a reasonable method for completion of the Development Work;

(b) The change, occurrence, event or situation which is the subject of the request for Change Order has caused or will result in an identifiable and measurable disruption of the Development Work which has or will impact a Critical Path item; and

(c) The delay or damage was not caused by, related to, arising from or aggravated by any delay, breach, default, fault, act, omission, negligence, recklessness, gross negligence or willful misconduct of any member of the D/B CDA Developer Group and could not reasonably have been avoided by D/B CDA Developer or the other members of the D/B CDA Developer Group, including by resequencing, reallocating or redeploying its forces to other portions of the Development Work.

In addition, as a condition to any Acceleration Costs or delay or disruption damages, D/B CDA Developer shall provide detailed documentation of such costs satisfactory to the CTRMA.

14.5.2.3 Acceleration Costs are permitted only with respect to Change Orders issued as an alternative to allowing an extension of a Completion Deadline as contemplated by Sections 14.3.1.1 and 14.3.3. If the CTRMA elects to have D/B CDA Developer accelerate the Project, no additional or extended overhead cost will be allowed.

14.5.3 Limitation on Time Extensions.

Any extension of time shall exclude any delay to the extent that it (a) was due to the delay, breach, default, fault, act, omission, negligence, recklessness, gross negligence or willful misconduct of any member of the D/B CDA Developer Group, or (b) could reasonably have been avoided by D/B CDA Developer or the other members of the D/B CDA Developer Group, including by resequencing, reallocating or redeploying its forces to other portions of the Development Work. Costs incurred for the purpose of mitigating delays as described in (b) above, and not otherwise disallowed hereunder, would be reimbursable.

14.5.4 Development Work Performed Without Direction.

To the extent that D/B CDA Developer undertakes any work or makes any payment that is not part of the Development Work, unless D/B CDA Developer (a) has received from the CTRMA a Directive Letter or Change Order directing D/B CDA Developer to do such work or make such payment or (b) has preserved its rights by delivery of a Request for Change Order Resolution Meeting under Section 14.3.2.2, D/B CDA Developer shall be deemed to have performed such work or made such payment voluntarily and shall not be entitled to a Change Order in connection therewith.

14.6 Pricing of Change Orders.

The CTRMA and D/B CDA Developer (on its own behalf and on behalf of its Subcontractors) shall endeavor to negotiate, in good faith, a reasonable cost for each Change Order, provided that unilateral Change Orders are not subject to negotiations. In general the price of a Change Order shall be negotiated in accordance with this Section 14.6 or shall be based on time and materials records pursuant to Section 14.7. The beginning base line for negotiations to determine the price of a Change Order shall be based upon one of the following methods: (1) TxDOT Prices or (2) RS Means Heavy Construction Cost Data Book-Latest Edition.

14.6.1 Contents.

A negotiated Change Order shall specify scheduling requirements, time extensions and all costs of any nature arising out of the Development Work covered by the Change Order. Notwithstanding the foregoing, the parties may mutually agree to use a multiple-step process involving issuance of a Change Order which includes an estimated construction cost and which provides for a revised Change Order to be issued after a certain design level has been reached, thus allowing a refinement and further definition of the estimated construction cost. The CTRMA shall have the right to require that any or all of the information submitted by D/B CDA Developer in the EPDs be used in evaluating the cost proposal.

14.6.2 Added Work.

When the Change Order adds work to D/B CDA Developer's scope, the increase in the Development Price shall be negotiated based upon one of the following methods: (1) TxDOT Prices or (2) RS Means Heavy Construction Cost Data Book-Latest Edition, or (3) shall be based on actual costs in accordance with Section 14.7. Estimated costs shall be based on projected actual costs, not on estimated costs contained in D/B CDA Developer's Proposal. For negotiated Change Orders, mark-ups for profit and overhead shall be consistent with Section 14.7, and risk associated with the work described in the Change Order shall be addressed through the assumptions contained therein regarding the scope of such work.

14.6.3 Deleted Work.

When the Change Order deletes work from D/B CDA Developer's scope (including deletion of any work described in the Scope of Work that is found to be unnecessary by the CTRMA, in its sole discretion), the amount of the reduction in the Development Price shall be based upon one of the following methods: (1) TxDOT Prices or (2) RS Means Heavy Construction Cost Data Book-Latest Edition.. Estimated costs shall be based on projected actual costs, not on estimated costs contained in D/B CDA Developer's Proposal. When a deduction is involved, documented cancellation and restocking charges may be included in costs and subtracted from the price deduction. If the scope of the deleted work cannot be definitely determined, the amount of risk associated with such Development Work as of the Proposal Date shall be considered in determining the mark-up for the deduction.

14.6.4 Work Both Added and Deleted.

When the Change Order includes both added and deleted Development Work, D/B CDA Developer shall prepare a statement of the cost of labor, material and equipment for both added and deleted work.

(a) If the change results in a net increase in cost, the change shall be treated as work added and the provisions of Section 14.6.2 shall be used to determine mark-ups for overhead and profit. Mark-ups for overhead and profit will be allowed only for the net increase in cost in order to establish the amount to be added to the Development Price.

(b) If the change results in a net decrease in cost, the change shall be treated as work deleted and the provisions of Section 14.6.3 shall be used on the net decrease in cost in order to establish the price to be deducted from the Development Price.

(c) If the change results in a net change of zero, there will be no change in the Development Price.

14.6.5 All-Inclusive Change Orders.

All Change Orders submitted by D/B CDA Developer shall be all-inclusive, comprehensive and complete and shall not include any conditions with respect to pricing or schedule.

14.7 Time and Materials Change Orders and Cost Data.

The CTRMA may, at its discretion, issue a Time and Materials Change Order at any time. The Time and Materials Change Order shall instruct D/B CDA Developer to perform work as specified therein, indicating expressly the intention to allow compensation therefor, and setting forth the kind, character, and limits of the work in question insofar as they can be ascertained, the terms under which changes to the Development Price will be determined and the estimated total change in Development Price anticipated thereunder. Upon final determination of the allowable costs, the CTRMA shall issue a modified Change Order setting forth the final adjustment to the Development Price. The following costs and mark-ups (and no others) shall be used for calculating the change in the Development Price:

14.7.1 Labor Costs.

The cost of labor for workers used in the actual and direct performance of the Change Order work, whether provided by D/B CDA Developer or a Subcontractor, will equal the sum of the following:

(a) For construction-related labor, (1) the actual Direct Cost for direct labor; plus (2) for health, welfare and pension benefits and Social Security deductions, 55% of the actual direct labor cost; plus (3) 25% of the total of the amounts set forth in clauses (1) and (2) for profit and overhead.

(b) For non-construction-related work (professional services), (1) the actual wages (i.e. the base wage paid to the employee exclusive of any fringe benefits); plus (2) a labor surcharge in the amount of 145%, which shall constitute full compensation for all profit, overhead and all state and federal payroll, unemployment and other taxes, insurance, fringe benefits and all other payments made to, or on behalf of, the workers, in excess of actual wages.

(c) No additional payment will be made for Category A Key Personnel assigned to the Project or for Category B Personnel assigned to the Project on a full-time basis unless a time extension is granted by the CTRMA.

14.7.2 **Material Costs.**

Material costs for Change Order work shall be the Direct Cost of all materials to be used in the performance of construction work including normal wastage allowance as per industry standards, less salvage value, plus 15% for profit and overhead. The material prices shall be supported by valid quotes and invoices from the suppliers.

14.7.3 **Equipment.**

14.7.3.1 Costs for D/B CDA Developer-owned machinery, trucks, power tools or other similar equipment that are required for Change Order work will be allowed based on the following methodology:

(a) The Direct Cost of fuel, lubricants, repairs, parts, and depreciation will be considered without any additional compensation percentage for overhead and profit being added; and

(b) The equipment rental rates shall be those tabulated in the most recent version of the *Rental Rate Blue Book* (published by EquipmentWatch; 1735 Technology Drive, Suite 410, San Jose, California 95110). The rental rates to be used shall be the published monthly rate divided by 150 to yield an hourly rate, which hourly rate shall be further adjusted by multiplying by the *Rental Rate Blue Book* adjustment rate for the year the equipment was manufactured and by a factor of 0.85 and adding to that product the *Rental Rate Blue Book* estimated hourly operating cost rate.

D/B CDA Developer shall be considered to own such items if an ownership interest therein is held by (w) D/B CDA Developer, (x) any equity participant in D/B CDA Developer, (y) any Subcontractor performing construction work, or (z) any Affiliate of D/B CDA Developer, any equity participant in D/B CDA Developer or any such Subcontractor. If the publication of the *Rental Rate Blue Book* should be discontinued for any reason, the CTRMA may select a different publication from which to make the described calculations.

14.7.3.2 Costs for machinery, trucks, power tools or other similar equipment that are required for Change Order work rented from any commercial enterprises routinely offering equipment and tools for rent or lease to the public will be allowed in an amount equal to the direct rental rate for the equipment without any additional mark-up or increase for overhead and profit.

14.7.3.3 The time to be paid for use of equipment on the Site shall be the time the equipment is in operation on the Change Order work being performed. The time shall include the reasonable time required to move the equipment to the location of the Change Order work and return it to the original location or to another location requiring no more time than that required to return it to its original location. Moving time will not be paid for if the equipment is also used at the Site other than for Change Order work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power. No payment for loading and transporting will be made if the equipment is also used at the Site other than for Change Order work. Time will be computed in half and full hours. In computing the time for use of equipment, less than 30 minutes shall be considered one-half hour.

14.7.4 Subcontracted Work.

To the extent that any Change Order is intended to compensate D/B CDA Developer for the cost of work performed by Subcontractors, the Change Order shall provide for compensation equal to (1) the actual Direct Cost to D/B CDA Developer of such work (which shall be charged by the Subcontractor on a time and materials basis in accordance with this Section 14.7, unless otherwise approved in writing by the CTRMA), plus (2) 5% of such cost. Notwithstanding the above, no 5% mark-up shall be applied to Subcontracts with Suppliers or Affiliates of the D/B CDA Developer.

14.7.5 Work Performed by Utility Owners.

To the extent that any Change Order is intended to compensate D/B CDA Developer for the cost of work performed by Utility Owners entitled to receive reimbursement for their costs from D/B CDA Developer, the Change Order shall provide for compensation to D/B CDA Developer equal to (1) the actual and reasonable amount paid by D/B CDA Developer to the Utility Owner for such work (but not greater than the amount allowed pursuant to the applicable Utility Adjustment Agreements), plus (2) 5% of such allowed actual amount. Back-up documentation supporting each cost item for this category shall be provided by D/B CDA Developer and approved by the CTRMA in writing prior to any payment authorization being granted.

14.7.6 Other Direct Costs.

For any justified change-related Direct Cost not covered by the categories of costs contained in Sections 14.7.1 through 14.7.5, D/B CDA Developer shall accept as full payment therefore an amount equal to the actual cost to D/B CDA Developer for such direct cost item. Without additional mark-up, back-up documentation supporting each cost item for this category shall be provided by D/B CDA Developer and approved by the CTRMA in writing prior to any payment authorization being granted.

14.7.7 Items Included in Mark-Ups.

The mark-ups specified herein constitute full and complete compensation for all overhead, tools or equipment having an individual replacement value of \$1,000 or less, consumables (items which are consumed in the performance of the Development Work which are not a part of the finished product) and other indirect costs of the added or changed Development Work, as well as for profit thereon, including any and all costs and expenses incurred due to any delay in connection with the added or changed Development Work. D/B CDA Developer's mark-up percentages shall be considered to include, among other costs, bond premiums, incidental job burdens, bonuses not otherwise covered, field, jobsite and general home office expenses of all types (including timekeepers, bookkeepers and other general office help), supervisory expenses of all types (excluding only direct supervision of force account work) and all other overhead, general condition and indirect costs and expenses. With respect to non-construction related labor costs, overhead is included as part of the labor surcharge calculated in accordance with Section 14.7.1(b), and includes accessories such as computer-assisted drafting and design (CADD) systems, computers, facsimile transmission machines, scanners, paper, etc.

14.7.8 Change Order Data.

D/B CDA Developer shall contemporaneously collect, record in writing, segregate and preserve (a) all data necessary to determine the costs described in this Section 14.7 with respect to all Development Work which is the subject of a Change Order or a requested Change Order (excluding negotiated Change Orders previously executed and delivered), specifically including costs associated with design work as well as D/B CDA Developer's costs for Utility Adjustment Work, and (b) all data necessary to show the actual impact (if any) on the Critical Path, the Project Schedule, and performance deadlines with respect to all Development Work which is the subject of a Change Order or a proposed Change Order. Such data shall be provided to the CTRMA and any authorized representative of the CTRMA reviewing any Claim or Dispute regarding compensation for such Development Work. D/B CDA Developer hereby waives the right to obtain compensation for any work for which cost data is required to be provided

hereunder, if D/B CDA Developer fails to maintain and timely provide to the CTRMA cost data meeting the requirements of this Agreement.

14.7.8.1 D/B CDA Developer shall maintain its records in such a manner as to provide a clear distinction between (a) the direct cost of Development Work for which it is entitled (or for which it believes it is entitled) to an increase in the Development Price and (b) the costs of other operations. D/B CDA Developer shall furnish daily, on forms approved by the CTRMA, reports of all costs described in (a) above. The reports shall itemize all costs for labor, materials, and equipment rental and give total of costs through the date of the report. For workers, the reports shall include hours worked, rates of pay, names and classifications. For equipment, the reports shall include size, type, identification number, rental rate and actual working hours of operation. All such records and reports shall be made immediately available to the CTRMA upon its request. The cost of furnishing such reports are deemed to be included in D/B CDA Developer's overhead and fee percentages.

14.7.8.2 All reports shall be signed by D/B CDA Developer. The CTRMA will compare its records with D/B CDA Developer's reports, make the necessary adjustments and compile the costs of Development Work completed under a Time and Materials Change Order. When such reports are agreed upon and signed by both Parties, they will become the basis of payment.

14.8 Hazardous Materials Management.

14.8.1 Basis for Compensation.

If compensation is payable to D/B CDA Developer pursuant to Section 7.5 with respect to Hazardous Materials Management, the amount of the Change Order shall either be a negotiated amount acceptable to the Parties, or an amount equal to 100% of the Reimbursable Hazardous Materials Costs for the work in question.

14.8.2 CTRMA Right to Inspect.

Unless the Environmental Team determines that immediate or emergency response action is necessary, D/B CDA Developer shall be deemed to have waived the right to collect from the CTRMA any and all costs incurred in connection with any Hazardous Materials Management if the CTRMA is not afforded the opportunity to inspect sites containing Hazardous Materials before any action is taken which would inhibit the CTRMA's ability to ascertain, based on a site inspection, the nature and extent of the Hazardous Materials.

14.8.3 Insurance Proceeds.

If the cost of any Hazardous Materials Management is covered by the insurance described in Section 10, D/B CDA Developer shall be entitled to reimbursement of Reimbursable Hazardous Materials Costs from proceeds of insurance and self-insurance, up to the limits of the applicable policy, plus any deductibles payable under the applicable policy. To the extent that such proceeds are available, D/B CDA Developer shall not be entitled to payment hereunder on any other basis for such Hazardous Materials Management. If insurance proceeds are insufficient to reimburse D/B CDA Developer for the cost of Hazardous Materials Management, the CTRMA shall be responsible for any excess amount owed to D/B CDA Developer pursuant to the provisions of Section 7.5 and this Section 14.8.

14.8.4 Reimbursement from Third Parties.

To the extent that D/B CDA Developer incurs Hazardous Materials Management costs in connection with remediation of Hazardous Materials which are not eligible for a Change Order hereunder but which are eligible for reimbursement from a third party outside of the D/B CDA Developer Group, the CTRMA agrees to assign to D/B CDA Developer any causes of action held by the CTRMA against such third party for reimbursement of costs, subject to the CTRMA's prior written approval of any such action in each instance, provided that prior approval by the CTRMA shall not be required for costs incurred in connection with immediate or emergency response actions performed at the direction of the Environmental Team. D/B CDA Developer shall be responsible for identifying any potentially responsible parties. Unless the CTRMA otherwise informs D/B CDA Developer in writing, all costs associated with any action to recover Hazardous Materials Management costs from third parties will be borne by D/B CDA Developer. If D/B CDA Developer wishes to obtain such an assignment from the CTRMA, it shall deliver a notice requesting the same, and shall provide the CTRMA with a form of assignment acceptable to the CTRMA.

14.8.5 Time Extensions.

If D/B CDA Developer encounters Hazardous Materials for which D/B CDA Developer is entitled to compensation, and Hazardous Materials Management of such Hazardous Materials results in delays of more than 14 days to the Critical Path ("**Hazardous Materials Delay**"), then CTRMA shall bear 100% of the risk of such Hazardous Materials Delay for the number of days of delay in excess of 14. If a Hazardous Materials Delay is concurrent with another delay which is D/B CDA Developer's responsibility hereunder, then such Hazardous Materials Delay shall be borne 100% by D/B CDA Developer.

14.9 Differing Site Conditions.

14.9.1 Subject to the restrictions and limitations set forth in this Section 14, D/B CDA Developer shall be entitled to a Change Order for certain additional costs which are directly attributable to any Differing Site Conditions to the extent permitted in this Section 14.9. No time extension shall be available with respect to Differing Site Conditions, and no delay damages shall be recovered. To the extent that additional costs are incurred in connection with the Project due to changes in D/B CDA Developer's obligations relating to the Development Work resulting from the existence of Differing Site Conditions and which are not reimbursed by insurance proceeds, the CTRMA and D/B CDA Developer shall share the risk as follows:

14.9.1.1 D/B CDA Developer shall be fully responsible for, and thus shall not receive a Change Order with respect to, up to \$100,000 per discovery of a Differing Site Condition and up to \$500,000 in aggregate additional costs incurred directly attributable to changes in D/B CDA Developer's obligations relating to the Development Work resulting from the existence of Differing Site Conditions.

14.9.1.2 The CTRMA shall be fully responsible for any additional costs incurred in excess of \$100,000 per discovery and \$500,000 in the aggregate directly attributable to changes in D/B CDA Developer's obligations relating to the Development Work resulting from the existence of Differing Site Conditions, and a Change Order shall be issued to compensate D/B CDA Developer for such additional costs.

14.9.2 During progress of the Development Work, if Differing Site Conditions are encountered, D/B CDA Developer shall immediately notify the CTRMA thereof telephonically or in person, to be followed immediately by written notification. D/B CDA Developer shall be responsible for determining the appropriate action to be undertaken, subject to concurrence by the CTRMA. In the event that any Governmental Approvals specify a procedure to be followed, D/B CDA Developer shall follow the procedure set forth in the Governmental Approvals. If the discovery of Differing Site Conditions necessitates a change in the design of the Project, such change shall be submitted to the CTRMA for its written approval.

14.9.3 D/B CDA Developer hereby acknowledges and agrees that it has assumed all risks with respect to the need to work around locations impacted by Differing Site Conditions. D/B CDA Developer shall bear the burden of proving that a Differing Site Condition exists and that it could not reasonably have worked around the Differing Site Condition so as to avoid additional cost. D/B CDA Developer shall track all costs associated with a Differing Site Condition in accordance with the requirements and limitations in Section 14.7.

14.10 Force Majeure Events.

Subject to the limitations contained in, and upon D/B CDA Developer's fulfillment of all applicable requirements of, this Section 14, the CTRMA shall issue Change Orders (a) to compensate D/B CDA Developer for additional costs incurred arising directly from Force Majeure Events (excluding Acceleration Costs or delay and disruption damages other than for any Force Majeure Events which are included in the definition of CTRMA-Caused Delay), and (b) to extend the applicable Completion Deadline(s) and/or Acceptance Deadline(s) as the result of any delay in the Critical Path directly caused by a Force Majeure Event, to the extent that it is not possible to work around the problem.

14.10.1 Notwithstanding the foregoing, D/B CDA Developer shall be fully responsible for, and thus shall not receive a Change Order with respect to, any delays of up to 120 Days per location or an aggregate amount of 360 Days for all such delays, resulting from the need to work around locations impacted by the type of event described in clause (c) of the definition of "Force Majeure Event" (that is, the discovery of previously unknown archeological, paleontological or cultural resources on the Site). The CTRMA shall not be responsible for any Acceleration Costs or other costs attributable to any delays relating to such event or situation, other than any Acceleration Costs and other incremental costs directly attributable to the portion of the type of delay described above in excess of 120 Days per location or in excess of an aggregate amount of 360 Days for all such delays; provided that, D/B CDA Developer shall be entitled to a Change Order only for delays to the Critical Path after expiration of such 120 Day work-around period. If a delay resulting from the need to work around a previously unknown archeological, paleontological or cultural resource is concurrent with another delay which is D/B CDA Developer's responsibility hereunder, then such delay shall be borne 100% by D/B CDA Developer and shall not be counted towards the 360-Day aggregate cap. If a delay resulting from the need to work around a previously unknown archeological, paleontological or cultural resource is concurrent with another delay resulting from the need to work around another previously unknown archeological, paleontological or cultural resource, only one of the delays shall be applied to the 120-Day period of D/B CDA Developer's responsibility or the 360-Day aggregate cap. The foregoing shall not be deemed to preclude D/B CDA Developer from obtaining a Change Order with respect to any requirement that it perform mitigation measures relating to any such resources or materials which are not otherwise its responsibility under the terms of the Contract Documents.

14.11 Eliminated Development Work.

Deletion of any Development Work shall not invalidate this Agreement or the bonds required under Section 9.

14.12 Utility Adjustment Work.

D/B CDA Developer agrees that (a) the Development Price (as it may be increased pursuant to this Section 14.12) covers all of the Utility Adjustment Work and payments which are D/B CDA Developer's responsibility pursuant to Technical Provision 8 and/or in this Section 14.12, (b) it is feasible to obtain and/or perform all necessary Utility Adjustments within the time deadlines of the Contract Documents, and (c) the Development Price includes contingencies deemed adequate by D/B CDA Developer to cover the possibility that the Reference Documents do not accurately identify all Utilities impacted by the Project, taking into consideration the fact that D/B CDA Developer is entitled to Change Orders only in specified situations. Except as permitted by this Section 14.12, D/B CDA Developer assumes all risk of increased costs and of delays to the Project Schedule associated with the Utility Adjustment Work, without regard to who (as between D/B CDA Developer and the affected Utility Owner) is assigned the responsibility to perform such Utility Adjustment Work. Accordingly, subject to the limitations, restrictions and procedures set forth elsewhere in this Section 14, D/B CDA Developer shall be entitled to receive a Change Order for additional costs and delays associated with Utility Adjustment Work only as permitted by this Section 14.12 or in circumstances for which such a Change Order is otherwise permitted under the other provisions of this Section 14, such as for CTRMA-Directed Changes which increase the Utility Adjustment Work to be furnished, performed or paid for by D/B CDA Developer. D/B CDA Developer's entitlement to any Change Orders pursuant to the other provisions of this Section 14 relating to the Utility Adjustment Work shall be subject to any applicable limitations and restrictions set forth in this Section 14.12, and D/B CDA Developer's entitlement to any Change Orders pursuant to this Section 14.12 shall be subject to the limitations, restrictions and procedures set forth elsewhere in this Section 14.

14.12.1 Inaccuracies in Existing Utility Information.

The parties' entitlement to Change Orders on account of inaccuracies in the Existing Utility Information shall be determined in accordance with this Section 14.12.1.

14.12.1.1 D/B CDA Developer shall be entitled to an increase in the Development Price and the issuance of a Change Order in connection with increases in the cost of the Development Work due to Unidentified Utilities within the Schematic ROW. The amount of the Development Price increase in any Change Order issued under this Section 14.12.1.1 for each such Unidentified Utility facility shall be equal to the Cost Differential for that facility less \$50,000. By way of example, if the Cost Differential for a Unidentified Utility facility is \$75,000, the D/B CDA Developer would be entitled to a \$25,000 Change Order, but if the Cost Differential related to a particular Unidentified Utility facility is less than \$50,000, then D/B CDA Developer would not be entitled to a Change Order. In no event shall D/B CDA Developer be required to pay more than an aggregate of \$150,000 with respect to Unidentified Utilities.

14.12.1.2 No time extension will be allowed on account of any delays attributable to any inaccuracy(ies) in the Existing Utility Information.

14.12.1.3 All Cost Differential calculations submitted by D/B CDA Developer shall be supported by detailed cost proposals and supporting documentation (for all estimates used in such calculations) meeting the requirements of Section 14.6 of this Agreement. The CTRMA shall have the right to require that any or all of the information submitted by D/B CDA Developer in the EPDs be used in evaluating the cost proposals.

14.12.1.4 D/B CDA Developer shall use its best efforts to minimize costs for which D/B CDA Developer is entitled to compensation pursuant to this Section 14.12.1. Generally, such efforts will require avoidance of an Unidentified Utility where feasible rather than its removal and/or reinstallation in a new location; however, D/B CDA Developer may, upon the CTRMA's prior approval, remove and/or reinstall an Unidentified Utility in a new location even if avoidance is feasible, if the burden imposed on D/B CDA Developer by such avoidance would be unreasonable in light of the benefits to the CTRMA and the Project which would result therefrom. The provisions of this Section 14.12.1.4 are in all cases subject to D/B CDA Developer's obligation to comply with all applicable requirements of the Contract Documents, including the requirements described in Technical Provision 8.

14.12.2 **Utility Enhancements.**

Utility Enhancements shall be addressed as provided in this Section 14.12.2 and in Technical Provision 8.

14.12.2.1 If a Utility Owner requests that D/B CDA Developer design and/or construct a Betterment, then subject to Section 14.12.2.4, D/B CDA Developer shall use its best efforts to negotiate in good faith an agreement with the Utility Owner providing for D/B CDA Developer to perform such work at the Utility Owner's expense, with payments to be made directly by the Utility Owner to D/B CDA Developer. Any such agreement shall be set forth in the applicable Utility Adjustment Agreement. Any such Betterment shall be deemed added to the scope of the Development Work upon execution by the Utility Owner and D/B CDA Developer and approval by the CTRMA of a Utility Adjustment Agreement or Utility Adjustment Agreement Amendment identifying and providing for performance of such Betterment. Any change in the scope of the Development Work pursuant to this Section 14.12.2.1 shall not be treated as a CTRMA-Directed Change. Except as otherwise set forth in this Section 14.12.2 or in Technical Provision 8, all the terms and conditions of the Contract Documents which apply to the Utility Adjustment Work being performed by D/B CDA Developer shall apply to any Betterment added to the Development Work pursuant to this Section 14.12.2.1.

14.12.2.2 The Development Price shall not be increased on account of any Betterment added to the Development Work. Instead, D/B CDA Developer shall have the right to collect payment for such work directly from the Utility Owner, subject to the provisions of the applicable Utility Adjustment Agreement or Utility Adjustment Agreement Amendment. The amount of compensation payable by the Utility Owner to D/B CDA Developer for a Betterment shall be determined pursuant to the process set forth in the applicable Utility Adjustment Agreement form (see Exhibit D-8e). D/B CDA Developer shall submit to the CTRMA a copy of each invoice delivered to a Utility Owner pursuant to this Section 14.12.2.2, concurrently with its delivery to the Utility Owner.

14.12.2.3 If a Utility Owner requests that D/B CDA Developer design and/or construct a Utility Owner Project, then subject to Section 14.12.2.4, D/B CDA Developer shall use its best efforts to negotiate in good faith an agreement with the Utility Owner providing for D/B CDA Developer to perform such work at the Utility Owner's expense, with payments to be made directly by the Utility Owner to D/B CDA Developer. Any such agreement shall be a separate construction contract between D/B CDA Developer and the Utility Owner; and any such Utility Owner Project shall be performed outside of this Agreement and the Development Work, without any impact on the Development Price. The compensation payable by the Utility Owner to D/B CDA Developer for a Utility Owner Project shall be determined in a manner acceptable to both D/B CDA Developer and the Utility Owner.

14.12.2.4 D/B CDA Developer is fully responsible for coordinating its efforts with Utility Owners and for addressing requests by Utility Owners that D/B CDA Developer design and/or construct Utility Enhancements. Under no circumstances shall D/B CDA Developer proceed with any Utility Enhancement which is incompatible with the Project or the Ultimate Design or which cannot be performed within the other constraints of applicable Law, the Governmental Approvals and the Contract Documents, including the Completion Deadlines. Under no circumstances will D/B CDA Developer be entitled to any Development Price increase or time extension hereunder as the result of any Utility Enhancement, whether performed by D/B CDA Developer either outside of this Agreement or as part of the Development Work, or by the Utility Owner or its contractors. D/B CDA Developer shall promptly notify the CTRMA of any requests by Utility Owners which D/B CDA Developer considers to be Betterments, and shall keep the CTRMA informed as to the status of negotiations with Utility Owners concerning such requests. D/B CDA Developer shall provide the CTRMA with such information, analyses, and certificates as may be requested by the CTRMA in order to determine compliance with this Section 14.12.2.

14.12.3 **Utility Agreements.**

14.12.3.1 Utility Adjustment Agreements entered into by D/B CDA Developer (as the same may be amended, modified or supplemented) shall not be considered

Contract Documents. D/B CDA Developer shall not be entitled to any increase in the Development Price or to any time extension on account of the terms of any Utility Adjustment Agreement or of any amendment, modification or supplement thereto.

14.12.3.2 Any Utility MOU's entered into by the CTRMA and/or TxDOT with Utility Owners are not Contract Documents, although D/B CDA Developer may have certain obligations with respect to the Original Utility MOU's as described in the Scope of Work. D/B CDA Developer shall not be entitled to any increase in the Development Price or to any time extension on account of the terms of any Original Utility MOU or of any Additional Utility MOU.

14.12.4 **[Reserved].**

14.12.5 **Delays by Utility Owners.**

14.12.5.1 D/B CDA Developer shall use best efforts to obtain the cooperation of each Utility Owner as necessary for the Project. D/B CDA Developer shall notify the CTRMA immediately if (a) D/B CDA Developer reasonably believes that any Utility Owner would not undertake or permit a Utility Adjustment in a manner consistent with the timely completion of the Project, (b) D/B CDA Developer becomes aware that a Utility Owner is not cooperating in a timely manner to provide the needed work or approvals, or (c) any other dispute arises between D/B CDA Developer and any Utility Owner with respect to the Project, despite D/B CDA Developer's diligent efforts to obtain such Utility Owner's cooperation or otherwise resolve such dispute. Such notice may include a request that the CTRMA assist in resolving the dispute or in otherwise obtaining the Utility Owner's timely cooperation. D/B CDA Developer shall provide the CTRMA with such information regarding the Utility Owner's failure to cooperate and the effect of any resulting delay on the Project Schedule as is requested by the CTRMA. The CTRMA's obligation to assist hereunder is subject to D/B CDA Developer's provision of evidence reasonably satisfactory to the CTRMA that the Adjustment is necessary, the time for completion of the Adjustment in the Project Schedule was, in its inception, a reasonable amount of time for completion of such Development Work, and that D/B CDA Developer has made best efforts to obtain the Utility Owner's cooperation but has not been able to obtain such cooperation. Following the receipt of such evidence by the CTRMA, the CTRMA shall take reasonable steps to obtain the cooperation of the Utility Owner or resolve the dispute; however, the CTRMA shall have no obligation to prosecute eminent domain or other legal proceedings, unless the CTRMA elects to do so in its sole discretion. After delivery of any notice or request for assistance pursuant to this Section 14.12.5.1, D/B CDA Developer shall continue to use best efforts to pursue the Utility Owner's cooperation. Any assistance provided by the CTRMA shall not relieve D/B CDA Developer of its sole and primary responsibility for the satisfactory compliance with its obligations and timely completion of all Utility Adjustment Work, except as otherwise expressly set forth in this Section 14.12.5.

14.12.5.2 In the event that the CTRMA objects in writing to D/B CDA Developer's request for assistance pursuant to Section 14.12.5.1, based on D/B CDA Developer's failure to satisfy the CTRMA that (a) the Adjustment is necessary for the Project, (b) the time for completion of the Adjustment in the Project Schedule was, in its inception, a reasonable amount of time for completion of such Development Work, (c) D/B CDA Developer has made diligent efforts to obtain the Utility Owner's cooperation, or (d) the Utility Owner is not cooperating, D/B CDA Developer shall take such action as D/B CDA Developer deems advisable during the next 45 days to obtain the Utility Owner's cooperation and shall then have the right to submit another request for assistance with an Adjustment. This process shall be followed until D/B CDA Developer succeeds in obtaining the Utility Owner's cooperation or in otherwise resolving the dispute or until the CTRMA determines, based on evidence presented by D/B CDA Developer, that the Adjustment is necessary, D/B CDA Developer has made diligent efforts to obtain the Utility Owner's cooperation and the Utility Owner is uncooperative. D/B CDA Developer shall have the right to submit the question of the reasonableness of the CTRMA's determination through the dispute resolution process described in Section 25.

14.12.5.3 D/B CDA Developer shall bear 100% of the risk of Critical Path delays caused by a Utility Owner's failure to timely comply with the requirements of a Utility Adjustment Agreement which has been executed by D/B CDA Developer, TxDOT or CTRMA and such Utility Owner. The term "**Utility Owner Delay**" shall mean a delay to the Critical Path which is directly attributable to a Utility Owner's failure to cooperate with D/B CDA Developer with respect to the Adjustment of its Utility, within the time period reasonably scheduled for performance of such work by D/B CDA Developer, where D/B CDA Developer and such Utility Owner have not yet executed a Utility Adjustment Agreement addressing such Adjustment. D/B CDA Developer shall bear 100% of the risk of each Utility Owner Delay.

14.12.5.4 No Change Order for delay to the Critical Path shall be allowable for purposes of this Section 14.12.5:

14.12.5.5 D/B CDA Developer shall not be entitled to extension of any Completion Deadline on account of any delays caused by a Utility Owner. D/B CDA Developer shall not be entitled to any increase of the Development Price or reimbursement of any additional costs which it may incur as a result of any delays caused by a Utility Owner.

14.12.6 Amounts Owed by Utility Owners to D/B CDA Developer.

If for any reason D/B CDA Developer is unable to collect any amounts owed to D/B CDA Developer by a Utility Owner (whether for a Utility Enhancement or otherwise): (a) the CTRMA shall have no liability for such amounts; (b) D/B CDA Developer shall have no right to collect such amounts from the CTRMA or to offset such amounts against amounts otherwise owing from D/B CDA Developer to the CTRMA; and (c) D/B CDA Developer shall have no

right to stop work or to exercise any other remedies against the CTRMA on account of such Utility Owner's failure to pay D/B CDA Developer.

14.12.7 Additional Restrictions on Change Orders.

In addition to all of the other requirements and limitations contained in this Section 14.12 and in the other provisions of this Section 14, the rights and obligations of D/B CDA Developer under this Section 14.12 shall be subject to the following:

14.12.7.1 As part of the Development Work, D/B CDA Developer is responsible for causing all Utility Adjustment Work to occur, for reimbursing the Utility Owners for their costs of performing or furnishing Utility Adjustment Work, and for scheduling all Utility Adjustment Work (whether performed by D/B CDA Developer or the affected Utility Owner) so as to meet the Completion Deadline and the Acceptance Deadline herein. Accordingly, if a Utility Owner performs or furnishes Utility Adjustment Work that was initially anticipated to be performed or furnished by D/B CDA Developer, or if D/B CDA Developer performs or furnishes Utility Adjustment Work that was initially anticipated to be performed or furnished by the Utility Owner, there shall be no resulting time extension and no resulting change in the Development Price (either up or down).

14.12.7.2 D/B CDA Developer assumes all risk of, and shall not be entitled to receive any time extension or increase in the Development Price on account of, any delays caused by any Utility Owner. D/B CDA Developer shall not be entitled to receive any time extension or increase in the Development Price on account of any failure by a Utility Owner to comply with the terms and conditions of any Utility MOU. Any action or inaction by the CTRMA as described in Section 14.12.5.1 shall have no bearing on the restriction set forth in this Section 14.12.7.2.

14.12.7.3 D/B CDA Developer shall not be entitled to a Change Order for any costs or delays which it may incur that are attributable to (a) any errors, omissions, inaccuracies, inconsistencies or other defects in designs furnished by any Utility Owner, and/or (b) any defect in construction performed by any Utility Owner.

14.12.7.4 D/B CDA Developer shall not be entitled to a Change Order for any costs or delays resulting from the performance of Utility Adjustment Work (including Incidental Utility Adjustment Work) by the D/B CDA Developer or any Utility Owner (including with respect to Unidentified Utilities).

14.12.7.5 Any Change Order increasing the Development Price pursuant to this Section 14.12 shall include only the incremental costs arising from the circumstances giving rise to such Change Order.

14.12.7.6 D/B CDA Developer shall not be entitled to any increase in the Development Price for any costs of coordinating with Utility Owners (including with respect to Unidentified Utilities).

14.12.7.7 Any information with respect to Utilities provided in the Existing Utility Information or in any other materials included in the Reference Documents is for D/B CDA Developer's reference only, has not been verified, and shall not be relied upon by D/B CDA Developer, except as expressly set forth in Section 14.12.1. Accordingly, D/B CDA Developer shall not be entitled to any increase in the Development Price or to any time extension on account of any inaccuracies in the Reference Documents with respect to any Identified Utilities. Further, D/B CDA Developer shall not be entitled to any time extension on account of inaccuracies in the Reference Documents with respect to any Unidentified Utilities, and shall not be entitled to any increase in the Development Price on account of such inaccuracies except to the extent that they are reflected in the calculation of the Cost Differential for Unidentified Utilities as described in Exhibit A to this Agreement (and subject to the thresholds and any other limitations set forth in Section 14.12.1). Without limiting the generality of the foregoing, except as set forth in the preceding sentence, D/B CDA Developer shall not be entitled to any increase in the Development Price and/or time extension as a result of any of the following:

(a) any increase in the extent or change in the character of the Utility Adjustment Work necessary to Adjust any Utility from that anticipated by D/B CDA Developer;

(b) any difference in the cost to Adjust a Utility from that anticipated by D/B CDA Developer;

(c) any inaccuracy in the information included in the Reference Documents as to the existence, location, ownership, type, and/or any other characteristic of any Utility;

(d) any inaccuracy in the Reference Documents as to whether any Utility is located within privately owned property or public right of way; and/or

(e) any inaccuracy in the Reference Documents as to the existence or nature of any rights or interests relating to the occupancy of any real property by any Utility.

14.12.7.8 If D/B CDA Developer elects to make payments to Utility Owners or to undertake any other efforts which are not required by the terms of the Contract Documents, D/B CDA Developer shall not be entitled to a Change Order in connection therewith.

14.12.8 Failure of the CTRMA to Make Certain Specified Utility Adjustments.

Notwithstanding any language to the contrary in this Section 14.12, the CTRMA (and not the D/B CDA Developer) shall be solely responsible for making those Utility Adjustments specified in Exhibit D–Item 8b–Preliminary Utility Adjustment Concept Plan for Interim Milestone. If the CTRMA fails to complete such Utility Adjustments within 180 Days of the issuance of NTP, then such failure will be treated as a CTRMA-Caused Delay and the D/B may be entitled to a Change Order to extend the Interim Completion Deadline, the Completion Deadline and/or the Acceptance Deadline to the extent such failure has a material adverse effect on the Critical Path.

14.13 Restrictions and Limitations on Change Orders.

D/B CDA Developer acknowledges and agrees that the CTRMA shall bear responsibility only for limited matters involving delays and costs and the consequences resulting therefrom as set forth in this Section 14. D/B CDA Developer shall bear responsibility for all other matters, including, but not limited to, the following:

- (a) errors, omissions, inaccuracies, inconsistencies or other defects in the RFDP Documents, including, but not limited to, the Schematic Plan and the Existing Design Plans, and any requests for Change Orders;
- (b) any design changes requested by the CTRMA as part of the process of overseeing and accepting the Design Documents for consistency with the requirements of the Contract Documents, TxDOT, FHWA or other Governmental Approvals and/or applicable Law;
- (c) defective or incorrect schedules of Development Work or changes in the planned sequence of performance of the Development Work;
- (d) action or inaction of other contractors, Subcontractors or sub-subcontractors (including failure to organize and integrate their work with the Development Work);
- (e) subsurface moisture content and Site conditions (including geological, soil conditions, ground elevations and/or topography differing from those indicated in the RFDP Documents), except to the extent that the CTRMA has agreed in Section 14.9 to be responsible for any such conditions which constitute Differing Site Conditions;
- (f) untimely delivery of equipment or material, or unavailability or defectiveness or increases in costs of material, equipment or products specified by the Contract Documents, except to the extent resulting from a Force Majeure Event;

- (g) all costs covered by insurance proceeds received by or on behalf of D/B CDA Developer;
- (h) correction of Nonconforming Work and review and acceptance thereof by the CTRMA, including rejected design submittals;
- (i) failure by any member of the D/B CDA Developer Group to comply with the requirements of the Contract Documents, the Governmental Approvals and/or applicable Law;
- (j) any delay not on a Critical Path;
- (k) delays or costs arising out of, related to or caused by Adjacent Work;
- (l) delays in issuance of any Governmental Approval by any entity with jurisdiction over the subject matter of such Governmental Approval that is required to be obtained by D/B CDA Developer, except to the extent resulting from a Force Majeure Event;
- (m) delays caused by untimely provision of access to Final ROW, except to the extent the CTRMA has agreed in this Section 14 to be responsible for any such delays which constitute CTRMA-Caused Delays;
- (n) delays from any other situations (other than Force Majeure Events) which, while not within one of the categories delineated above, were or should have been anticipated by D/B CDA Developer because such situations are referred to elsewhere in this Agreement or arise out of the nature of the Development Work; and
- (o) all events beyond the control of the CTRMA for which the CTRMA has not expressly agreed to assume liability hereunder.

D/B CDA Developer assumes responsibility for all such matters, and acknowledges and agrees that assumption by D/B CDA Developer of responsibility for such costs and delays, and the consequences and costs resulting therefrom, is reasonable under the circumstances of this Agreement. D/B CDA DEVELOPER EXPRESSLY WAIVES ALL RIGHTS TO ASSERT ANY AND ALL CLAIMS BASED ON ANY CHANGE IN THE DEVELOPMENT WORK, DELAY OR ACCELERATION, INCLUDING ANY CONSTRUCTIVE CHANGE, DELAY, SUSPENSION OR ACCELERATION, FOR WHICH D/B CDA DEVELOPER FAILED TO PROVIDE PROPER AND TIMELY NOTICE AS REQUIRED BY SECTION 14.3 OR FAILED TO PROVIDE A TIMELY CHANGE ORDER FORM AS REQUIRED BY SECTION 14.3, AND AGREES THAT D/B CDA DEVELOPER SHALL BE ENTITLED TO NO CHANGE ORDER, COMPENSATION, DAMAGES OR TIME EXTENSIONS WHATSOEVER IN CONNECTION WITH THE WORK EXCEPT TO THE EXTENT THAT

THE CONTRACT DOCUMENTS EXPRESSLY SPECIFY THAT D/B CDA DEVELOPER IS ENTITLED TO A CHANGE ORDER, COMPENSATION, DAMAGES OR A TIME EXTENSION.

14.14 Disputes.

The failure of the CTRMA and D/B CDA Developer to agree to any Change Order under this Section 14 shall be a dispute to be resolved pursuant to Section 25 of this Agreement. Except as otherwise specified in the Change Order, execution of a Change Order by the Parties shall be deemed accord and satisfaction of all claims by D/B CDA Developer of any nature arising from or relating to the Development Work covered by the Change Order.

14.15 No-Cost Changes.

Changes in the Development Work which have no net cost effect on the Development Price may be approved in writing by the CTRMA as a Deviation, and in such event shall not require a Change Order.

14.16 No Release or Waiver.

14.16.1 No extension of time granted hereunder shall release or discharge any Surety or Guarantor from its obligations. Development Work shall continue and be carried on in accordance with all the provisions of the Contract Documents, unless formally suspended or annulled in accordance with the terms hereof. Permitting D/B CDA Developer to finish the Development Work or any part thereof after the applicable Completion Deadline or the applicable Acceptance Deadline, or the making of payments to D/B CDA Developer after such date, shall not constitute a waiver on the part of the CTRMA of any rights under this Agreement.

14.16.2 The CTRMA shall not be deemed to have waived any rights hereunder (including its right to abrogate this Agreement for abandonment or for failure to complete within the time specified, or to impose and deduct damages as may be provided herein) as the result of any grant of an extension of time beyond the date fixed for the completion of any part of the Development Work, any acceptance of performance of any part of the Development Work after the deadline therefor, or the making of any payments to D/B CDA Developer after such date.

15. SUSPENSION OF ALL OR PART OF THE WORK.

15.1 Suspension for Convenience.

The CTRMA may order D/B CDA Developer in writing to suspend, delay, or interrupt all or any part of the Development Work for a period of time not to exceed 24 hours, as the CTRMA may determine to be appropriate for the convenience of the CTRMA provided that such notice,

to be effective, must be given at least 48 hours prior to the suspension. Any suspension for convenience in excess of 24 hours which results in a delay to the Critical Path will be considered a CTRMA-Directed Change.

15.2 Suspension for Other Reasons, Including Compliance with Environmental Approvals.

The CTRMA has the authority to suspend the Development Work wholly or in part for such period as the CTRMA deems necessary because of the failure on the part of any member of the D/B CDA Developer Group to carry out orders given or to perform any requirements of the Contract Documents, the Governmental Approvals or applicable Law. D/B CDA Developer shall promptly comply with the written order of the CTRMA to suspend the Development Work wholly or in part. The suspended Development Work shall be resumed when corrective action satisfactory to the CTRMA has been taken.

15.3 Compensation and Time Extensions for Suspensions.

D/B CDA Developer shall not be entitled to any increase in the Development Price or extension of any Completion Deadline or any Acceptance Deadline in connection with any suspension under this Section 15, except to the extent that the suspension is considered to be a CTRMA-Directed Change under Section 15.1. In such event, D/B CDA Developer may be entitled to compensation and/or a time extension in accordance with Section 14.

16. TERMINATION FOR CONVENIENCE.

16.1 D/B CDA Developer's Right to Terminate for Delay in Project Financing.

16.1.1 Subject to Section 13.2, D/B CDA Developer shall have the right to unilaterally terminate its obligations under this Agreement if NTP has not been issued by the CTRMA on or before 365 Days after the Proposal Date, due to no fault of any member of the D/B CDA Developer Group.

16.1.2 D/B CDA Developer shall have no right to unilaterally terminate any Contract Documents after the issuance of NTP, including in the case of material default by the CTRMA or delay in satisfaction of conditions precedent to commencing construction, except as set forth in Section 17.4.

16.2 CTRMA's Right to Terminate for Convenience.

The CTRMA may, in its sole discretion, terminate D/B CDA Developer's rights and obligations under the Contract Documents at any time subject to the provisions of this Section 16.

16.3 Notice of Termination.

The CTRMA shall notify D/B CDA Developer of its decision to terminate for convenience by delivering to D/B CDA Developer a written notice of termination (“**Notice of Termination**”) specifying the extent of termination and its effective date. Termination (or partial termination) of this Agreement shall not relieve or release any Surety or Guarantor of its obligation for any claims arising out of the Development Work performed as of the effective date of the termination (or thereafter in the case of a partial termination).

16.4 D/B CDA Developer’s Responsibilities After Receipt of Notice of Termination.

After receipt of a Notice of Termination, and except as otherwise directed in writing by the CTRMA, D/B CDA Developer shall immediately proceed as follows, regardless of any delay in determining or adjusting any amounts due under this Section 16:

16.4.1 Stop Development Work as specified in the notice;

16.4.2 Enter into no further Subcontracts or Utility Adjustment Agreements without the consent of the CTRMA;

16.4.3 Terminate all Subcontracts and Utility Adjustment Agreements to the extent they relate to the Development Work terminated except to the extent that continuation of the Subcontract or Utility Adjustment Agreement is necessary in order to mitigate damages;

16.4.4 Assign to the CTRMA or its designee, in the manner, at the times, and to the extent directed by the CTRMA, all of D/B CDA Developer’s right, title, and interest in the Subcontracts and Utility Adjustment Agreements so terminated, in which case the CTRMA will have the right, in its sole discretion, to settle or pay any or all claims arising out of the termination of such Subcontracts and Utility Adjustment Agreements;

16.4.5 Settle all outstanding liabilities and claims arising out of such termination of Subcontracts and Utility Adjustment Agreements, with the approval or ratification of the CTRMA;

16.4.6 Assign to the CTRMA or its designee, in the manner, at the times, and to the extent directed by the CTRMA, all of D/B CDA Developer’s right, title, and interest in any Utility Adjustment Agreements which relate to the terminated Development Work but which the CTRMA has directed D/B CDA Developer not to terminate;

16.4.7 Transfer title and deliver to the CTRMA or its designee, in the manner, at the times, and as and to the extent, if any, directed by the CTRMA, (a) the Development Work in process, completed Development Work, supplies and other material produced or acquired for the

Development Work subject to the Notice of Termination for which payment has been made by the CTRMA, and (b) the Design Documents, Construction Documents and all other completed or partially completed drawings (including Plans, elevations, sections, details and diagrams), specifications, records, samples, information and other property for which payment has been made by the CTRMA that would have been required to be furnished to the CTRMA if the Development Work had been completed;

16.4.8 Complete performance in accordance with the Contract Documents of all Development Work not terminated;

16.4.9 Take all action that may be necessary, or that the CTRMA may direct, for the protection and preservation of (a) the Project, (b) the Development Work and (c) the equipment, machinery, materials and property related to the Project, the Development Work and the Contract Documents that is in the possession of D/B CDA Developer and in which the CTRMA (or any Utility Owner) has or may acquire an interest; and

16.4.10 Subject to the written approval of the CTRMA, use its best efforts to sell, in a manner, at the times, at the price or prices and to the extent directed or authorized by the CTRMA, any property of the types referred to in clause (a) of Section 16.4.7; provided, however, that D/B CDA Developer (a) is not required to extend credit to any purchaser, and (b) may acquire the property under the conditions prescribed and at prices approved by the CTRMA. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the CTRMA under the Contract Documents or paid in any other manner directed by the CTRMA.

16.5 Inventory.

D/B CDA Developer shall submit to the CTRMA a list of machinery, equipment, materials and inventory not previously disposed of and excluding items authorized for disposition by the CTRMA; and within 45 Days after delivery of the list, D/B CDA Developer shall deliver such items to the CTRMA and the CTRMA shall accept title to such items, except as otherwise directed by the CTRMA.

16.6 Settlement Proposal.

After receipt of a Notice of Termination, D/B CDA Developer shall submit a final termination settlement proposal to the CTRMA in the form and with the certification prescribed by the CTRMA. D/B CDA Developer shall submit the proposal promptly, but no later than 90 Days from the effective date of termination unless D/B CDA Developer has requested a time extension in writing within such 90-Day period and the CTRMA has agreed in writing to such extension. If D/B CDA Developer fails to submit the proposal within the time allowed, the CTRMA may conclusively determine, on the basis of information available to it, the amount, if any, due D/B CDA Developer because of the termination and shall pay D/B CDA Developer the

amount so determined. The provisions of Section 17 shall govern any termination of this Agreement as a result of an Event of Default.

16.7 Amount of Termination Settlement.

Subject to the provisions of Section 16.6, D/B CDA Developer and the CTRMA may agree upon the amount to be paid to D/B CDA Developer by reason of the total or partial termination of Development Work pursuant to this Section 16. Such negotiated settlement may include a reasonable allowance for profit solely on Development Work which has been completed and accepted by the CTRMA as of the termination date. Such agreed amount, exclusive of settlement costs, shall not exceed the Development Price less the amount of payments previously made to D/B CDA Developer and less the portions of the Development Price related to Development Work not terminated; provided, however, that if a termination occurs prior to issuance by the CTRMA of NTP, no amount shall be payable to D/B CDA Developer. Upon determination of the settlement amount, D/B CDA Developer will be paid the agreed amount and this Agreement will be amended accordingly to implement the partial or total termination. The CTRMA's execution and delivery of any settlement agreement shall not affect any of its rights under the Contract Documents with respect to completed Development Work, relieve D/B CDA Developer from its obligations with respect thereto, including Warranties, or affect the CTRMA's rights under the Performance Bonds and/or the Payment Bonds.

16.8 No Agreement as to Amount of Claim.

If D/B CDA Developer and the CTRMA fail to agree, as provided in Section 16.7, upon the amount to be paid to D/B CDA Developer by reason of the termination of Development Work pursuant to this Section 16, the amount payable shall be determined pursuant to the procedures set forth in Section 25.

16.9 Reduction in Amount of Claim.

The amount otherwise due D/B CDA Developer under this Section 16 shall be reduced by (a) all unliquidated advances or other payments made to or on behalf of D/B CDA Developer with respect to any portion of the Development Work or this Agreement that has been terminated, (b) the amount of any claim which the CTRMA may have against any member of the D/B CDA Developer Group in connection with this Agreement; (c) the amount of any Losses suffered by any Indemnified Party as a result of the actions, omissions, negligence, willful misconduct, or breach of applicable Law or contract by any member of the D/B CDA Developer Group; (d) any existing or threatened claims, Liens and stop notices relating to the Project; (e) the agreed price for, or the proceeds of sale of, any materials, supplies or other things acquired by D/B CDA Developer or sold, pursuant to the provisions of this Section 16, and not otherwise recovered by or credited to the CTRMA; and (f) any amounts due or payable by D/B CDA Developer to the CTRMA, plus any interest accrued thereon under the terms of this Agreement.

16.10 Preservation of Records.

Unless otherwise provided for in this Agreement or by applicable Law, D/B CDA Developer shall, from the effective date of termination until the expiration of five years after final settlement under this Agreement, preserve and make available to the CTRMA at no cost to the CTRMA and at all reasonable times, all of its books, records, electronic files, documents and other evidence relating to the costs and expenses of D/B CDA Developer under this Agreement and relating to the Development Work terminated hereunder, or, to the extent approved by the CTRMA, photographs, micrographs, or other authentic reproductions thereof.

16.11 CTRMA's Unilateral Right to Issue NTPs.

16.11.1 Notwithstanding the foregoing, D/B CDA Developer acknowledges and agrees that the CTRMA has no obligation to issue an NTP hereunder. Furthermore, D/B CDA Developer acknowledges that any decision to issue an NTP shall be in the sole discretion of the CTRMA.

17. DEFAULT.

17.1 Default of D/B CDA Developer.

17.1.1 D/B CDA Developer shall be in default under this Agreement upon the occurrence and continuance of any one or more of the following events or conditions, following notice and opportunity to cure (if applicable) as specified in Section 17.1.2:

(a) D/B CDA Developer fails either (i) to begin any portion of the Development Work under the Contract Documents following issuance of an NTP therefor, or (ii) to prosecute the Development Work in accordance with the Project Schedule; or

(b) D/B CDA Developer fails to perform the Development Work with sufficient resources to assure Interim Completion within 180 Days following the Interim Completion Deadline, Substantial Completion within 180 Days following the Completion Deadline and Final Acceptance within 180 Days following the Acceptance Deadline (i.e. D/B CDA Developer fails to provide and thereafter meet a Recovery Schedule pursuant to Section 5.5); or

(c) D/B CDA Developer fails to perform and complete the Development Work in accordance with the Contract Documents, the Governmental Approvals and applicable Law, or refuses to repair, remove and replace defective or rejected materials, Nonconforming Work or Development Work deemed unacceptable by the CTRMA; or

(d) D/B CDA Developer suspends, ceases, stops or abandons the Development Work or fails to continuously and diligently prosecute the Development Work, excluding any work stoppage (i) due to termination by the CTRMA, (ii) due to and during the continuance of a Force Majeure Event or suspension by the CTRMA pursuant to Section 15.1; or (iii) due to and during the continuance of any suspension of work under Section 17.4.

(e) D/B CDA Developer fails to resume performance of Development Work which has been suspended or stopped, within a reasonable time after receipt of notice from the CTRMA to do so or after cessation of the event preventing performance; or

(f) D/B CDA Developer fails to maintain the insurance required under Section 10 or fails to provide the Performance Bond, or the Payment Bond; or

(g) D/B CDA Developer breaches any other covenant, agreement, obligation, term or condition contained in the Contract Documents which is not otherwise specifically referenced in this Section 17.1.1; or

(h) D/B CDA Developer assigns or transfers the Agreement or any right or interest herein, except as expressly permitted hereunder; or

(i) D/B CDA Developer fails to discharge or obtain a stay within 10 days of any final judgment(s) or order for the payment of money against it in excess of \$100,000 in the aggregate arising out of the prosecution of the Development Work; provided, however, that the posting of a bond in the amount of 125% of such judgment or order shall be deemed an effective stay; or

(j) D/B CDA Developer fails, absent a valid dispute, to make payment when due for labor, equipment or materials in accordance with its agreements with Subcontractors and applicable Law; or

(k) Any representation or warranty made by D/B CDA Developer or any Guarantor in the Contract Documents or any certificate, schedule, instrument, or other document delivered pursuant to the Contract Documents shall have been false or misleading when made; or

(l) D/B CDA Developer or any Guarantor is a party to fraud; or

(m) Any Guarantor revokes or attempts to revoke its obligations under its guarantee or otherwise takes the position that such instrument is no longer in full force and effect; or

(n) D/B CDA Developer or any equity member of D/B CDA Developer (each a **“D/B CDA Developer Party”**) commences a voluntary case seeking liquidation,

reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar Law now or hereafter in effect; seeks the appointment of a trustee, receiver, liquidator, custodian or other similar official of such D/B CDA Developer Party or any substantial part of such D/B CDA Developer Party's assets; files an answer admitting the material allegations of a petition filed against such D/B CDA Developer Party in any involuntary case commenced against D/B CDA Developer Party; consents to any such relief or to the appointment of or taking possession by any such official in any voluntary case commenced against such D/B CDA Developer Party; makes an assignment for the benefit of creditors; fails, is unable, or admits in writing the inability generally to pay such D/B CDA Developer Party's debts as they become due; or takes any action to authorize any of the foregoing; or any of the foregoing acts or events shall occur with respect to Guarantor; or

(o) An involuntary case is commenced against a D/B CDA Developer Party seeking liquidation, reorganization, dissolution, winding up, a composition or arrangement with creditors, a readjustment of debts or other relief with respect to such D/B CDA Developer Party or such D/B CDA Developer Party's debts under any bankruptcy, insolvency or other similar Law now or hereafter in effect; seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of such D/B CDA Developer Party or any substantial part of such D/B CDA Developer Party's assets; seeking the issuance of a writ of attachment, execution, or similar process; or seeking like relief, and such involuntary case shall not be contested by such D/B CDA Developer Party in good faith or shall remain undismissed and unstayed for a period of sixty (60) Days; or any such involuntary case or cases shall be commenced against Guarantor (but not necessarily in the same proceeding or concurrently) and such case or cases shall not be contested by Guarantor in good faith or shall remain undismissed and unstayed for a period of sixty (60) Days; or

(p) D/B CDA Developer fails to submit to the CTRMA a Project Schedule as required under the Contract Documents.

17.1.2 D/B CDA Developer and Surety shall be entitled to fifteen (15) Days' written notice and opportunity to cure any breach before declaring an Event of Default, provided that no such notice and opportunity to cure is required for any breach which by its nature cannot be cured. Failure to provide notice to Surety shall not preclude the CTRMA from exercising its remedies against D/B CDA Developer. If a breach is capable of cure but, by its nature, cannot be cured within fifteen (15) Days, as determined by the CTRMA, such additional period of time shall be allowed as may be reasonably necessary to cure the breach so long as D/B CDA Developer commences such cure within such fifteen (15) Day period and thereafter diligently prosecutes such cure to completion; provided, however, that in no event shall such cure period exceed sixty (60) Days in total. D/B CDA Developer hereby acknowledges and agrees that the events described in Section 17.1.1(k) through (o) are not curable. Notwithstanding the foregoing, the CTRMA may, without notice and without awaiting lapse of the period to cure any

default, in the event of existence of a condition on or affecting the Project which the CTRMA believes poses an immediate and imminent danger to public health or safety, rectify the dangerous condition at D/B CDA Developer's cost, and so long as the CTRMA undertakes such action in good faith, even if under a mistaken belief in the occurrence of such default, such action shall not expose the CTRMA to any liability to D/B CDA Developer and shall not entitle D/B CDA Developer to any other remedy, it being acknowledged that the CTRMA has a paramount public interest in providing and maintaining safe public use of and access to the Project. The CTRMA's good faith determination of the existence of such danger shall be deemed conclusive in the absence of clear and convincing evidence to the contrary.

17.2 Remedies.

17.2.1 If any breach described in Section 17.1.1 is not subject to cure or is not cured within the period (if any) specified in Section 17.1.2, the CTRMA may declare that an "Event of Default" has occurred. The declaration of an Event of Default shall be in writing and delivered to D/B CDA Developer with a copy to Surety. If an Event of Default shall occur, then D/B CDA Developer shall have the following obligations:

(a) The CTRMA may terminate this Agreement or a portion thereof, including D/B CDA Developer's rights of entry upon, possession, control and operation of the Project, in which case, the provisions of Section 16.4, Section 16.5 and Section 16.10 shall apply; and/or

(b) If requested by the CTRMA, D/B CDA Developer shall withdraw from the Final ROW and shall remove such materials, equipment, tools and instruments used by, and any debris or waste materials generated by, any member of the D/B CDA Developer Group in the performance of the Development Work as the CTRMA may direct; and/or

(c) D/B CDA Developer shall deliver to the CTRMA possession of any or all Design Documents, Construction Documents and all other completed or partially completed drawings (including Plans, elevations, sections, details and diagrams), specifications, records, information, schedules, samples, shop drawings, electronic files and other documents and facilities related to the Final ROW that the CTRMA deems necessary for completion of the Development Work; and/or

(d) D/B CDA Developer shall assign to the CTRMA the Subcontracts requested by the CTRMA and D/B CDA Developer shall terminate, at its sole cost, those Subcontracts not assigned to the CTRMA; and/or

(e) The CTRMA may deduct from any amounts payable by the CTRMA to D/B CDA Developer such amounts payable by D/B CDA Developer to the CTRMA, including Liquidated Damages or other damages payable to the CTRMA under the Contract Documents.

17.2.2 If an Event of Default shall occur, then the CTRMA shall have the following rights without further notice and without waiving or releasing D/B CDA Developer from any obligations:

(a) The CTRMA shall have the right, but shall not be obligated, to pay such amount and/or perform such act as may then be required.

(b) The CTRMA may appropriate any or all materials and equipment on the Site as may be suitable and acceptable and may, subject to the rights of Surety if the CTRMA elects to proceed against the Performance Bond, enter into an agreement for the completion of this Agreement according to the terms and provisions thereof with another contractor or the Surety, or use such other methods as may be required for the completion of this Agreement, including completion of the Development Work by the CTRMA.

(c) If the CTRMA exercises any right to perform any obligations of D/B CDA Developer, in the exercise of such right it may, but is not obligated to, among other things: (i) perform or attempt to perform, or caused to be performed, such work; (ii) spend such sums as the CTRMA deems necessary and reasonable to employ and pay such architects, engineers, consultants and contractors and obtain materials and equipment as may be required for the purpose of completing such work; (iii) execute all applications, certificates and other documents as may be required for completing the work; (iv) modify or terminate any contractual arrangements; (v) take any and all other actions which it may in its sole and absolute discretion consider necessary to complete the work; and (vi) prosecute and defend any action or proceeding incident to the Development Work.

(d) All costs and charges incurred by the CTRMA, including without limitation any re-bid costs, throw away costs for unused portions of the D/B CDA Developer's design and increased financing costs due to delay of the Finance Closing Date, together with the cost of completing the Development Work, will be deducted from any monies due or that may become due D/B CDA Developer. If such expense exceeds the sum which would be available from such monies, then D/B CDA Developer shall be liable and shall pay to the CTRMA the amount of such excess plus interest thereon at the lesser of (i) 12% per annum or (ii) the maximum rate allowable under applicable Law.

17.2.3 The rights and remedies of the CTRMA hereunder are in addition to any other rights and remedies provided by law or equity or provided under this Agreement, the Performance Bond, Payment Bond, or any guarantees hereunder, and the exercise or beginning of the exercise by the CTRMA of any one or more of any of such rights or remedies shall not preclude the simultaneous or later exercise by the CTRMA of any or all other such rights or remedies; provided, however, that if the CTRMA fails to notify the Surety of its intent to enforce the Performance Bond within 730 days after an Event of Default and the formal termination of

D/B CDA Developer's right to complete the Development Work, the Performance Bond shall be deemed voided and the Surety shall be released from any further obligation thereunder.

17.2.4 D/B CDA Developer and Surety shall not be relieved of liability for continuing Liquidated Damages on account of a breach or default by D/B CDA Developer hereunder or by the CTRMA's declaration of an Event of Default, or by actions taken by the CTRMA under this Section 17.2

17.2.5 In the event that this Agreement is terminated for grounds which are later determined not to justify a termination for default, such termination shall be deemed to constitute a termination for convenience pursuant to Section 16.

17.3 Failure to Comply Caused by Delay Event.

Notwithstanding anything to the contrary contained herein, the Parties agree that the term **"Event of Default"** shall specifically exclude D/B CDA Developer's failure to meet the Project Schedule or achieve Substantial Completion by the Completion Deadline or Final Acceptance by the Acceptance Deadline, if such failure is caused directly by an event or events beyond D/B CDA Developer's control, which event was not due, in whole or in part, to the breach, default, fault, act, omission, negligence, recklessness, gross negligence or willful misconduct of any member of the D/B CDA Developer Group, and which delay could not have been avoided by due diligence and use of reasonable efforts by D/B CDA Developer. The foregoing circumstance is referred to herein as a **"Delay Event,"** with the understanding that the term **"Delay Event"** does not apply in cases where the delay to the Critical Path is resolved by extension of the applicable Completion Deadline(s) under Section 14. If D/B CDA Developer fails to meet the Project Schedule as a result of a Delay Event, the CTRMA shall not be entitled to terminate this Agreement or exercise any of the remedies described in Section 17.2 above for such failure of D/B CDA Developer to perform, except as follows: (i) if D/B CDA Developer fails to perform or delays the performance of any Development Work as the result of a Delay Event, then the CTRMA shall have the right, but not the obligation, to cause third parties to perform such Development Work, and, in such event, the cost of such Development Work shall be deducted from the Development Price; and (ii) occurrence of a Delay Event shall not excuse D/B CDA Developer from its obligation to implement a Recovery Schedule or from its obligation to pay damages, including Liquidated Damages, for failure to achieve Interim Completion by the Interim Completion Deadline, Substantial Completion by the Completion Deadline or Final Acceptance by the Acceptance Deadline. D/B CDA Developer shall promptly notify the CTRMA in writing of any occurrence of a Delay Event and of the steps that D/B CDA Developer intends to implement to mitigate the delays arising therefrom.

17.4 Right to Stop Work for Failure by the CTRMA to Make Undisputed Payment.

In the event that D/B CDA Developer fails to receive a payment in the amount approved under Section 13.3.7 on the date specified for payment in Section 13.3.7, D/B CDA Developer shall promptly notify the CTRMA in writing. D/B CDA Developer shall have the right to suspend the Development Work if payment is not made within five (5) Business Days after delivery of the notice of nonpayment, without limitation to any other recourse of the D/B CDA Developer. Any such suspension by D/B CDA Developer based on a failure of the CTRMA to make payment shall be considered a CTRMA-Caused Delay entitling D/B CDA Developer to a Change Order hereunder. D/B CDA Developer shall not have the right to terminate the Agreement for default in the event of the CTRMA's failure to make payments owing hereunder, but D/B CDA Developer shall have the right to declare a termination for convenience under Section 16 if such suspension for nonpayment continues for more than 180 days, or as otherwise provide by law.

18. DAMAGES.

D/B CDA Developer understands and agrees that if D/B CDA Developer fails to complete the Development Work in accordance with the Contract Documents, the CTRMA will suffer substantial Losses. D/B CDA Developer agrees that it shall be liable for all such Losses. D/B CDA Developer and the CTRMA have agreed to require payment of Liquidated Damages with respect to certain types of Losses. D/B CDA Developer acknowledges and agrees that the Liquidated Damages provided for in the first paragraph of Section 18.1 are intended to compensate the CTRMA solely for D/B CDA Developer's failure to meet the deadlines set forth in Section 5.2 and shall not excuse D/B CDA Developer from liability from any other breach of requirements of the Contract Documents, including any failure of the Development Work to conform to applicable requirements. D/B CDA Developer shall not be liable for any other damages in addition to the Liquidated Damages for D/B CDA Developer's failure to meet the deadlines set forth in Section 5.2.

18.1 Liquidated Damages.

D/B CDA Developer acknowledges and agrees that because of the unique nature of the Project, and the fact that inconvenience to the traveling public will be one of the significant impacts of any failure by D/B CDA Developer to achieve Substantial Completion by the Completion Deadline and Final Acceptance by the Acceptance Deadline, it is impracticable and extremely difficult to ascertain and determine the actual Losses which would accrue to the CTRMA and the public if D/B CDA Developer fails to achieve Substantial Completion by the Completion Deadline and Final Acceptance by the Acceptance Deadline. Therefore, D/B CDA Developer shall pay the CTRMA a liquidated amount (the "**Liquidated Damages**") as deemed compensation to the CTRMA for such Losses, in the amount of \$10,000 for each Day after the

Interim Completion Deadline as its sole remedy for failure to meet the Interim Completion Deadline, \$90,000 for each Day after the Completion Deadline as its sole remedy for failure to meet the Completion Deadline and \$5,000 for each Day after the Acceptance Deadline as its sole remedy for failure to meet the Acceptance Deadline.

18.1.1 In addition, D/B CDA Developer shall be liable for and pay to CTRMA Liquidated Damages for each failure to correct Nonconforming Work in the amounts set forth in Section 7.4 of this Agreement. D/B CDA Developer acknowledges that such Liquidated Damages are reasonable in order to compensate CTRMA (a) for its increased costs of administering this Agreement, for its potential loss of revenue share, and for potential harm to the credibility and reputation of CTRMA with policy makers and with the general public, and (b) for potential harm and detriment to Project users, by reason of the matters that result in such liquidated damages. CTRMA's increased costs include the increased costs of monitoring and oversight and could also include obligations to pay or reimburse Governmental Entities with regulatory jurisdiction over the Project for their increased costs of monitoring and enforcing D/B CDA Developer compliance with applicable Governmental Approvals. Detriment to the public may include additional wear and tear on vehicles and increased costs of congestion, travel time and accidents. In addition, the events and circumstances that result in the trigger of these Liquidated Damages are likely to reduce the quality of the Project so as to adversely affect the experience of Project users. D/B CDA Developer further acknowledges that such increased costs and harm and detriment to Project users would be difficult and impracticable to measure and prove, because, among other things, the costs of monitoring and oversight prior to increases in the level thereof will be variable and extremely difficult to quantify; the nature and level of increased monitoring and oversight will be variable depending on the circumstances; and the variety of factors that influence use of and demand for the Project make it difficult to quantify the matters that will trigger these Liquidated Damages

18.1.2 D/B CDA Developer understands and agrees that any Liquidated Damages payable in accordance with this Section 18.1 are in the nature of liquidated damages and not a penalty and that such sums are reasonable under the circumstances existing as of the Effective Date. D/B CDA Developer further acknowledges and agrees that Liquidated Damages may be owing as the result of a Delay Event, even though no Event of Default has occurred or been declared.

18.2 Payment Terms/Offset; Reduction; Waiver.

18.2.1 Liquidated Damages shall be payable by D/B CDA Developer to the CTRMA within thirty (30) Days after D/B CDA Developer's receipt of an invoice therefore from the CTRMA. Interest on such amounts shall accrue at the lesser of (i) 12% per annum or (ii) the maximum rate allowable under applicable Law following the expiration of such thirty (30) Day period. The CTRMA shall have the right, in its sole discretion, to deduct any amount owed by

D/B CDA Developer to the CTRMA hereunder from any amounts owed by the CTRMA to D/B CDA Developer, including any Retainage which may be payable by the CTRMA to D/B CDA Developer.

18.2.2 Permitting or requiring D/B CDA Developer to continue and finish the Development Work or any part thereof after the Interim Completion Deadline, Completion Deadline or Acceptance Deadline shall not act as a waiver of the CTRMA's right to receive Liquidated Damages hereunder or any rights or remedies otherwise available to the CTRMA.

18.3 Limitation of D/B CDA Developer's Liability.

18.3.1 D/B CDA Developer's liability to the CTRMA for damages, Losses, costs and expenses of any kind resulting from or relating to this Agreement or performance of the Development Work (or failure to perform same), whether in contract, negligence or other tort, or any other theory of law, but excluding damages and Losses covered by insurance proceeds and the Performance Bond, and gross negligence, willful misconduct, fraud or criminal conduct on the part of the D/B CDA Developer, shall be limited to the sum of (a) all those costs reasonably incurred by the CTRMA or any party acting on the CTRMA's behalf in completing or correcting the Development Work or having the Development Work completed or corrected by another Person (provided that D/B CDA Developer shall be entitled to a credit against the damages otherwise payable to the CTRMA for amounts deducted and withheld by the CTRMA from the Development Price for purposes of paying such completion and correction costs), plus (b) the amount of \$20,000,000 (which sum shall specifically include and act as a limit on Liquidated Damages paid pursuant to this Section 18 and Section 19.1 and any payments made to or for the benefit of the Indemnified Parties pursuant to Section 23) plus (c) a maximum of \$10,000,000 for any payments for lost toll revenues pursuant to Section 12.1.4; provided, however, that D/B CDA Developer's liability to the CTRMA shall in no event exceed the amount of the Development Price.

18.3.2 Except for lost toll revenues payable pursuant to Section 12.1.4 (as limited by Section 18.3.1 (c) above) and subject to subparagraphs (a) and (b) below, in no event shall D/B CDA Developer be liable to the CTRMA for any indirect, special or consequential damages (including, without limitation, loss of use, cost of capital, debt service, loss of profit on this or related contracts, administrative costs, claims of taxpayers and other indirect damage) resulting from or relating to this Agreement or performance of the Development Work (or failure to perform same), and CTRMA hereby releases the D/B CDA Developer from such liability.

The foregoing limit of liability and waiver of consequential damages shall apply to limit liability under actions brought under any theory of law, including actions in tort (including negligence) as well as in contract. The foregoing release of liability by the CTRMA shall extend to all members of the D/B CDA Developer Group.

The foregoing limit of liability and waiver of consequential damages shall not exclude or affect:

(a) Any liability for gross negligence, fraud, intentional misconduct, or criminal acts by D/B CDA Developer or liability for Liquidated Damages under this Agreement; and

(b) Any liability for any type of damage or loss, to the extent such loss or damage is covered by insurance D/B CDA Developer carries under project specific policies applicable to the Project and the Development Work, regardless of whether required to be carried hereunder.

19. LABOR AND EMPLOYMENT REQUIREMENTS.

19.1 Key Personnel; Qualifications of Employees.

19.1.1 The Contract Documents identify certain job categories of Key Personnel for the Project. D/B CDA Developer shall not change, or permit any change in, any Key Personnel without the prior written consent of the CTRMA in accordance with Technical Provision 1.

19.1.2 All individuals performing Development Work shall have the skill and experience and any licenses required to perform the Development Work assigned to them. If the CTRMA determines, in its sole discretion, that any Person employed by D/B CDA Developer or any Subcontractor is not performing the Development Work in a proper, desirable and skillful manner or is detrimental to the progress of the Development Work and/or the Project, then, at the written request of the CTRMA, D/B CDA Developer shall remove such Person from the Project and such Person shall not be reemployed on the Project without the prior written approval of the CTRMA. If such Person is not removed or if D/B CDA Developer fails to ensure that skilled and experienced personnel are furnished for the proper performance of the Development Work, then the CTRMA may suspend the affected portion of the Development Work by delivery of written notice of such suspension to D/B CDA Developer. Such suspension shall in no way relieve D/B CDA Developer of any obligation contained in the Contract Documents or entitle D/B CDA Developer to a Claim or Change Order. Once compliance is achieved, D/B CDA Developer shall be entitled to and shall promptly resume the Development Work. During the period of any such suspension, D/B CDA Developer shall not be entitled to the payment of any portion of the Development Price or any other payment hereunder.

19.1.3 D/B CDA Developer shall designate in writing who shall have onsite field and office authority to represent and act for D/B CDA Developer. An appropriately designated representative shall be present at the jobsite at all times while Development Work is actually in progress. While any night work or shift work is to be performed by D/B CDA Developer, a superintendent shall be at the jobsite at all times. D/B CDA Developer shall provide phone and

pager numbers for all Key Personnel. The CTRMA requires the ability to contact these key individuals 24 hours per Day, seven Days per week.

19.1.4 D/B CDA Developer acknowledges and agrees that the award of this Agreement by the CTRMA to D/B CDA Developer was based, in large part, on the qualifications and experience of the personnel listed in the Proposal and D/B CDA Developer's commitment that such individuals would be available to undertake and perform the Development Work. D/B CDA Developer represents, warrants and covenants that such individuals are available for and will fulfill the roles identified for them in the Proposal in connection with the Development Work. Unless otherwise agreed to by the CTRMA in writing, individuals filling Key Personnel roles shall devote 100% of their work time, as required herein, to the prosecution and performance of the Development Work to the extent necessary to satisfactorily and timely complete their designated duties under the Contract Documents. By way of illustration and example, the Design Manager would be expected to devote full time to the Project until Final Design Plans are accepted by the CTRMA, but, thereafter, could reduce his or her commitment to such work time as is necessary to aid the Construction Manager and D/B CDA Developer Project Manager in completing construction of the Project.. If the individuals filling the Category A Personnel roles are not available for the Development Work and do not dedicate 100% of their work time, as required herein, to the prosecution and performance of the Development Work, D/B CDA Developer acknowledges that the CTRMA, the Development Work and the Project will suffer significant and substantial Losses and that it is impracticable and extremely difficult to ascertain and determine the actual Losses which would accrue to the CTRMA in such event. Therefore, if any such Category A Personnel are not available or do not dedicate 100% of their time, as required herein, to the prosecution and performance of the Development Work, except by reason of death or disability, D/B CDA Developer agrees to pay the CTRMA a liquidated amount of \$4,000 per week for each Category A Personnel that is unavailable as deemed compensation to the CTRMA for such Losses.

D/B CDA Developer understands and agrees that any damages payable in accordance with this Section 19.1 are in the nature of liquidated damages and not a penalty and that such sums are reasonable under the circumstances existing as of the Effective Date. The CTRMA shall have the right to deduct any amount owed by D/B CDA Developer to the CTRMA hereunder from any amounts owed by the CTRMA to D/B CDA Developer, including any Retainage which may be payable by the CTRMA to D/B CDA Developer. Notwithstanding the foregoing, D/B CDA Developer shall not be liable for liquidated damages under this Section 19.1 if (i) D/B CDA Developer removes or replaces such personnel at the direction of the CTRMA; (ii) such individual is unavailable due to death, disability, retirement, injury or no longer being employed by the applicable member of the D/B CDA Developer Group (provided that moving to an affiliated company shall not be considered grounds for avoiding liquidated damages), or (iii) such individual is unavailable due to the CTRMA's failure to issue NTP within [210] Days of the Proposal Date; provided, however, in each such case, D/B CDA Developer

shall promptly propose to the CTRMA a replacement for such personnel, which individual shall be subject to the CTRMA's review and written consent. In the event NTP has not been issued within [210] Days after the Proposal Date, D/B CDA Developer shall have thirty (30) Days after issuance of NTP to identify any change in Category A Personnel without incurring any liquidated damages, provided that such new Category A Personnel must be approved by CTRMA and meet the requirements of Section 19.1.2.

19.1.5 The CTRMA may waive Liquidated Damages pursuant to this Section 19.1 in its sole discretion.

19.2 Responsibility for Employees and Subcontractors.

D/B CDA Developer shall supervise and be responsible for the actions, omissions, negligence, willful misconduct, or breach of applicable Law or contract by any member of the D/B CDA Developer Group, as though all such Persons were directly employed by D/B CDA Developer.

19.3 Subcontracts.

19.3.1 Each instrument evidencing any agreement of D/B CDA Developer with any Subcontractor shall provide, in terms and in form and substance satisfactory to the CTRMA that: (a) the rights of D/B CDA Developer under such instrument are assigned to the CTRMA contingent only upon delivery of written request from the CTRMA or its successor or assign following default by D/B CDA Developer or termination or expiration of this Agreement; and (b) all warranties (express and implied) of such Subcontract shall inure to the benefit of the CTRMA.

19.3.2 D/B CDA Developer shall provide the CTRMA with a list of all Subcontracts from time to time upon request, shall allow the CTRMA access to all Subcontracts and records regarding Subcontracts and shall deliver to the CTRMA, within ten Days after execution, copies of all Major Subcontracts and, within ten Days after receipt of a request from the CTRMA, copies of all other agreements or documents as may be requested.

19.3.3 The appointment of Subcontractors by D/B CDA Developer will not relieve D/B CDA Developer of its responsibility hereunder or for the quality of the Development Work or materials provided by it. D/B CDA Developer will at all times be held fully responsible to the CTRMA for the actions, omissions, negligence, willful misconduct, or breach of applicable Law or contract by its Subcontractors and persons employed by them and no Subcontract entered into by D/B CDA Developer will impose any obligation or liability upon the CTRMA to any such Subcontractor or any of its employees. Nothing in this Agreement will create any contractual relationship between the CTRMA and any Subcontractor of D/B CDA Developer.

19.3.4 The following requirements shall apply to Subcontracts:

(a) D/B CDA Developer shall, within 30 days of execution of this Agreement, submit to the CTRMA for its review a procedure for the conduct of the selection and approval process applicable to Major Subcontracts. Such procedure may provide that award of any Major Subcontract will go to the lowest responsive bid by a responsible bidder, to the bidder providing the best value proposal or through a negotiation process. D/B CDA Developer may use procedures set forth in the TxDOT Specifications or may submit alternative competitive low bid procedures to the CTRMA for review, may submit a competitive best value selection procedure to the CTRMA for review, or may show why a negotiation process will provide the best value. D/B CDA Developer shall not enter into any Major Subcontracts except in accordance with the foregoing procedure. Once D/B CDA Developer has entered into any Major Subcontract, D/B CDA Developer shall not have the right to make any substitution of such Subcontractor except with the CTRMA's prior written approval.

(b) As soon as a potential Subcontractor has been identified by D/B CDA Developer, but in no event later than five Days after Subcontract execution, D/B CDA Developer shall notify the CTRMA in writing of the name, address, phone number and contact name of such Subcontractor that has not been previously identified as a Major Subcontractor in D/B CDA Developer's Proposal.

(c) Each Subcontract shall include terms and conditions sufficient to ensure compliance by the Subcontractor with the requirements of the Contract Documents, and shall include those terms that are specifically required by the Contract Documents to be included therein. All Subcontracts, including Subcontracts with Suppliers, shall incorporate terms substantially similar to those contained in this Agreement, specifically including an agreement by the Subcontractor or Supplier to participate in any dispute review proceeding pursuant to Section 25, if such participation is requested by either the CTRMA or D/B CDA Developer.

19.3.5 Each Subcontract shall:

(a) Set forth a standard of professional responsibility or a standard for commercial practice equal to prudent industry standards for work of similar scope and scale and shall set forth effective procedures for claims and change orders.

(b) Require the Subcontractor to carry out its scope of work in accordance with this Agreement, the Governmental Approvals and applicable Law, including the applicable requirements of the DBE Performance Plan.

(c) Set forth warranties, guaranties and liability provisions of the contracting party in accordance with good commercial practice for work of similar scope and scale.

(d) Be fully assignable without cost to the CTRMA or TxDOT, such assignability to include the benefit of all Subcontractor warranties, indemnities, guarantees and professional responsibility and include express requirements that: (i) it will maintain usual and customary books and records for the type and scope of operations of business in which it is engaged (e.g., constructor, equipment supplier, designer, service provider); (ii) permit audit thereof by D/B CDA Developer, and provide progress reports to D/B CDA Developer appropriate for the type of work it is performing sufficient to enable D/B CDA Developer to provide the reports it is required to furnish the CTRMA or TxDOT under this Agreement; and (iii) allow the CTRMA or TxDOT to assume the benefit of D/B CDA Developer's rights with liability only for those remaining obligations of D/B CDA Developer accruing after the date of assumption by the CTRMA or TxDOT.

(e) Not be assignable by the Subcontractor without D/B CDA Developer's prior written consent.

(f) With respect to any Subcontract which, when aggregated with all Subcontracts between D/B CDA Developer and such Subcontractor for the same Fiscal Year, is in excess of \$250,000: (i) be terminable by the Subcontractor only for cause; and (ii) include an indemnity from the Subcontractor in favor of D/B CDA Developer and the Indemnified Parties against any and all Losses arising out of, related to or associated with, the actions, omissions, negligence, willful misconduct, or breach of applicable Law or contract by the Subcontractor or any of its officers, employees, agents or representatives.

(g) Expressly require the Subcontractor to participate in meetings between D/B CDA Developer and the CTRMA, upon the CTRMA's request, concerning matters pertaining to such Subcontract or its work, provided that all direction to such Subcontractor shall be provided by D/B CDA Developer, and provided further that nothing in this clause (g) shall limit the authority of the CTRMA to give such direction or take such action which, in its opinion, is necessary to remove an immediate and present threat to the safety of life or property.

(h) Expressly provide that all Liens, claims and charges of the Subcontractor and its subcontractors at any time shall not attach to any interest of the CTRMA in the Project or the Final ROW.

(i) Be consistent in all other respects with the terms and conditions of this Agreement to the extent such terms and conditions are applicable to the scope of work of such Subcontractors, and include all provisions required by the Agreement.

19.3.6 D/B CDA Developer shall not amend any Subcontract with respect to any of the foregoing matters without the prior written consent of the CTRMA.

19.3.7 D/B CDA Developer shall not enter into any Subcontracts with any Person then debarred or suspended from submitting bids by any agency of the State or the federal government.

19.3.8 D/B CDA Developer shall include a provision in each Subcontract requiring the Subcontractor to maintain all licenses required by applicable Laws.

19.3.9 All Subcontracts with Affiliates shall be arm's-length, and on terms no less favorable to D/B CDA Developer than to non-Affiliates of the Subcontractor.

19.3.10 In no event shall D/B CDA Developer enter into Subcontracts for more than 70% of the Development Work, either in terms of the Development Price or actual Development Work.

20. COMPLETION AND ACCEPTANCE.

20.1 Substantial Completion.

20.1.1 D/B CDA Developer shall provide written notice to the CTRMA no later than ninety (90) Days prior to the date when all of the following will occur:

(a) D/B CDA Developer has completed the Development Work, except for Punch List items, final cleanup and other items included in the requirements for Final Acceptance of the Project;

(b) D/B CDA Developer has ensured that all Development Work relating to the Project has been performed in accordance with the requirements of the Contract Documents, the Governmental Approvals and applicable Law;

(c) The Project may be operated without damage to the Project, the Final ROW or any other property adjacent or nearby the Final ROW, and without injury to any Person;

(d) The Project (i) can be safely opened to public use, (ii) is fully signed and striped, and (iii) has all safety appurtenances installed; and

(e) All remaining Punch List work for the Project can be completed with no impact to traffic. If any lane closures are required to complete the Punch List items, D/B CDA Developer shall be only entitled to close lanes upon approval by the CTRMA, subject to lane rental fees identified in Section 22 of Exhibit B – Scope of Work.

20.1.2 Substantial Completion of the Project shall be deemed to have occurred when:

(a) The items set forth in Section 20.1.1 (a) – (e) have occurred;

(b) D/B CDA Developer has corrected any defects and deficiencies in the Development Work relating to the Project to the satisfaction of the CTRMA, and the CTRMA has notified D/B CDA Developer in writing of its acceptance, or waiver pending Final Acceptance, of such corrections and the concurrence that Substantial Completion of the Project has occurred;

(c) D/B CDA Developer has received all applicable Governmental Approvals required for the Project and to be obtained by D/B CDA Developer pursuant to this Agreement;

(d) All Adjustments have been accepted by the applicable Utility Owners;

(e) A Punch List to be performed prior to Final Acceptance of the Project has been mutually agreed to by the CTRMA and D/B CDA Developer;

(f) All equipment and other Development Work to be provided by D/B CDA Developer with respect to toll collection systems has been provided, completed, tested, and is fully operational; and

(g) The CTRMA has issued a certificate of Substantial Completion to D/B CDA Developer acknowledging the satisfaction of the conditions set forth in (a) – (f) above.

20.1.3 Notification of Substantial Completion.

(a) D/B CDA Developer shall provide CTRMA with not less than 20 days' prior written notification of the date D/B CDA Developer determines it will achieve Substantial Completion. During such 20-day period, D/B CDA Developer and CTRMA shall meet and confer and exchange information on a regular cooperative basis with the goal being CTRMA's orderly, timely inspection and review of the Project and the Final Design Documents and Construction Documents, and CTRMA's issuance of a certificate of Substantial Completion.

(b) During such 20-day period, CTRMA shall conduct an inspection of the Project and its components, a review of the Final Design Documents and Construction Documents and such other investigation as may be necessary to evaluate whether Substantial Completion is achieved.

(c) D/B CDA Developer shall provide CTRMA a second written notification when D/B CDA Developer determines it has achieved Substantial Completion. Within five days after expiration of the 20-day period and CTRMA's receipt of the second notification, CTRMA shall either: (a) issue the Certificate of Substantial Completion (dated as of the date of D/B CDA Developer's second notification) or (b) notify D/B CDA Developer in writing setting forth, as applicable, why the Project has not reached Substantial Completion. If CTRMA and D/B CDA

Developer cannot agree as to the date of Substantial Completion, such dispute shall be resolved according to the dispute resolution procedures set forth in this Agreement.

20.2 Interim Completion.

20.2.1 D/B CDA Developer shall provide written notice to the CTRMA no later than 90 Days prior to the date when all of the following will occur:

(a) D/B CDA Developer has completed the Interim Development Work, except for Punch List items; and

(b) D/B CDA Developer has ensured that all Interim Development Work relating to the Project has been performed in accordance with the requirements of the Contract Documents, the Governmental Approvals and applicable Law.

20.2.2 Interim Completion of the Project shall be deemed to have occurred when:

(a) The items set forth in Section 20.2.1 (a) – (b) have occurred;

(b) D/B CDA Developer has corrected any defects and deficiencies in the Interim Development Work relating to the Project to the satisfaction of the CTRMA, and the CTRMA has notified D/B CDA Developer in writing of its acceptance, or waiver pending Final Acceptance, of such corrections and the concurrence that Interim Completion of the Interim Development Work has occurred;

(c) D/B CDA Developer has received all applicable Governmental Approvals required for the Interim Development Work and to be obtained by D/B CDA Developer pursuant to this Agreement;

(d) All Adjustments relative to the Interim Development Work have been accepted by the applicable Utility Owners;

(e) A Punch List for remaining Interim Development Work to be performed prior to Final Acceptance of the Project has been mutually agreed to by the CTRMA and D/B CDA Developer; and

(f) D/B Developer has asked for and received from the CTRMA a certificate of Interim Completion acknowledging the satisfaction of all conditions stated above for Interim Completion.

20.3 Final Acceptance.

20.3.1 Promptly after Substantial Completion of all or an agreed specified portion of the Project, D/B CDA Developer shall perform all Development Work, if any, which was deferred in connection with the Substantial Completion, and shall satisfy all of its other obligations under the Contract Documents, the Governmental Approvals and applicable Law, including ensuring that all equipment, materials, facilities, improvements, structures and components have been properly adjusted and tested. Final Acceptance of the Project shall be deemed to have occurred when all of the following have occurred:

(a) All requirements for Substantial Completion of the Project shall have been fully satisfied, as determined by the CTRMA;

(b) The CTRMA shall have received all Design Documents, Final Construction Plans, surveys, maintenance manuals, electronic files, test data and other deliverables relating to the Project required under the Contract Documents;

(c) All special tools, equipment, furnishings and supplies purchased and/or used by D/B CDA Developer solely for the Project as provided in the Contract Documents shall have been delivered to the CTRMA and all replacement spare parts shall have been purchased and delivered to the CTRMA, free and clear of Liens;

(d) All personnel, supplies, equipment, waste materials, rubbish and temporary facilities of each member of the D/B CDA Developer Group shall have been removed from the Final ROW, D/B CDA Developer shall restore and repair all damage or injury arising from such removal to the satisfaction of the CTRMA, and the Final ROW shall be in good working order and condition;

(e) D/B CDA Developer shall have delivered to the CTRMA a certification representing that there are no outstanding claims of D/B CDA Developer or claims, Liens or stop notices of any first tier Subcontractor, laborer, Utility Owner or railroads with respect to the Development Work for the Project, other than any previously submitted unresolved claims of D/B CDA Developer on behalf of itself or on behalf of a first tier Subcontractor, laborer, Utility Owner or railroad. For purposes of such certificate, the term "claim" shall include all matters or facts which may give rise to a claim;

(f) The Punch List items for the Project shall have been completed to the satisfaction of the CTRMA, all of D/B CDA Developer's other obligations under the Contract Documents, the Governmental Approvals and applicable Law, other than obligations which by their nature are required to be performed after Final Acceptance of the Project, shall have been satisfied in full or waived;

(g) D/B CDA Developer shall have finalized and closed out all Governmental Approvals; and

(h) The D/B CDA Developer shall have requested and the CTRMA shall have issued a certificate of Final Acceptance to D/B CDA Developer acknowledging the satisfaction of the conditions set forth in clauses (a)-(g) above. The CTRMA agrees to issue such certificate when such conditions have been satisfied.

20.3.2 D/B CDA Developer shall provide CTRMA with written notification when D/B CDA Developer determines it has achieved Final Acceptance. During the 15-day period following receipt of such notification, D/B CDA Developer and CTRMA shall meet and confer and exchange information on a regular cooperative basis with the goal being the orderly, timely inspection and review of the Project and the Final As-Built Plans, and CTRMA's issuance of a certificate of Final Acceptance for the Project.

20.3.3 During such 15-day period, CTRMA shall conduct an inspection of the Punch List items, a review of the Final As-Built Plans and such other investigation as may be necessary to evaluate whether the conditions to Final Acceptance are satisfied.

20.3.4 Within five days after expiration of such 15-day period, CTRMA shall either: (a) issue a Certificate of Final Acceptance for the Project or (b) notify D/B CDA Developer in writing setting forth, as applicable, why Final Acceptance has not been achieved. If CTRMA and D/B CDA Developer cannot agree as to the date of Final Acceptance, such dispute shall be resolved according to the dispute resolution procedures set forth in this Agreement.

20.3.5 The occurrence of Final Acceptance of the Project shall not relieve D/B CDA Developer of any of its continuing obligations under the Contract Documents, including Warranty obligations, or constitute any assumption of liability by the CTRMA.

20.4 Assignment of Causes of Action.

D/B CDA Developer shall assign to the CTRMA all right, title and interest in and to all claims and causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15), arising from purchases of goods, services or materials pursuant to the Contract Documents or any Subcontract. This assignment shall be made and become effective at the time the CTRMA tenders Final Payment to D/B CDA Developer, without further acknowledgment by the Parties.

21. [RESERVED].

22. REPRESENTATIONS AND WARRANTIES.

22.1 CTRMA Representations and Warranties.

The CTRMA represents and warrants to D/B CDA Developer as follows:

(a) The CTRMA is duly organized and existing regional mobility authority under Chapter 370 of the Act, and has full power, right and authority to execute, deliver and perform its obligations under, in accordance with and subject to the terms and conditions of this Agreement and other Contract Documents to which it is a Party.

(b) Each Person executing this Agreement or any other Contract Document on behalf of the CTRMA to which the CTRMA is a Party has been or at such time will be duly authorized to execute each such document on behalf of the CTRMA.

(c) Neither the execution and delivery by the CTRMA of this Agreement and the other Contract Documents, nor the consummation of the transactions contemplated hereby or thereby, is in conflict with or will result in a default under or violation of any other agreements or instruments to which the CTRMA is a Party or by which it is bound.

(d) There is no action, suit, proceeding, or litigation pending and served on the CTRMA which challenges the CTRMA's authority to execute, deliver or perform, or the validity or enforceability of, this Agreement and the other Contract Documents to which the CTRMA is a Party, or which challenges the authority of the officials executing this Agreement or the other Contract Documents.

(e) EXCEPT AS OTHERWISE EXPRESSLY PROVIDED HEREIN, THE CTRMA EXPRESSLY DISCLAIMS ANY REPRESENTATIONS OR WARRANTIES OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, AS TO THE CONDITION OR QUALITY OF THE SITE OR THE PROSPECTS (FINANCIAL AND OTHERWISE), RISKS AND OTHER INCIDENTS OF THE SITE, THE DEVELOPMENT WORK AND THE PROJECT AND THE CTRMA SPECIFICALLY DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY, USAGE, SUITABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WITH RESPECT TO THE SITE, THE DEVELOPMENT WORK AND THE PROJECT, OR ANY PART THEREOF, OR COMPLIANCE WITH APPLICABLE LAWS OR GOVERNMENTAL APPROVALS. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, EXCEPT AS OTHERWISE EXPRESSLY PROVIDED HEREIN, THE CTRMA EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY OF ANY KIND REGARDING THE CONDITION OF THE SITE, OR THE SUITABILITY THEREOF IN CONNECTION WITH THE DEVELOPMENT WORK AND THE PROJECT AND NO SCHEDULE OR EXHIBIT TO THIS AGREEMENT, NOR ANY OTHER MATERIAL OR INFORMATION PROVIDED BY OR COMMUNICATIONS MADE BY THE CTRMA,

SHALL CAUSE OR CREATE ANY WARRANTY, EXPRESS OR IMPLIED, AS TO THE CONDITION OR QUALITY OF THE FINAL ROW OR THE ADDITIONAL PROPERTIES.

22.2 D/B CDA Developer Representations, Warranties and Covenants.

D/B CDA Developer represents, warrants and covenants to the CTRMA as follows:

(a) D/B CDA Developer has and throughout the term of this Agreement shall maintain all required authority, license status, professional ability, skills and capacity to perform D/B CDA Developer's obligations hereunder and shall perform them in accordance with the requirements contained in the Contract Documents.

(b) Except with respect to non-material deviations as permitted herein, the design for the Project can and shall be based on the Schematic Plan, and the Project can and shall be built in conformity with the Contract Documents, all applicable Laws and Governmental Approvals.

(c) D/B CDA Developer has evaluated the feasibility of performing the Development Work within the deadlines specified herein and for the Development Price, without relying on any information or item other than that which is expressly set forth in the Contract Documents, and has reasonable grounds for believing and does believe that such performance (including achievement of Substantial Completion of the Project by the Completion Deadline and Final Acceptance by the Acceptance Deadline, for the Development Price) is feasible and practicable.

(d) D/B CDA Developer has, prior to submitting its Proposal, in accordance with prudent and generally accepted engineering practices, reviewed the exploratory geotechnical information, inspected and, to the extent access was made available by the CTRMA, examined the Site and surrounding locations and undertaken other activities sufficient to familiarize itself with surface conditions and subsurface conditions discernible from the surface affecting the Project to the extent D/B CDA Developer deems necessary or advisable for performing its obligations under the Contract Documents, and as a result of such review, inspection, examination and other activities D/B CDA Developer is familiar with and accepts the physical requirements of the Development Work. D/B CDA Developer acknowledges and agrees that it has been afforded the opportunity to review information and documents and, to the extent access was made available by the CTRMA, to conduct inspections and tests of the Site and surrounding locations as described above. Before commencing any work on a particular portion or aspect of the Project, D/B CDA Developer shall verify all governing dimensions of the Site and shall examine all adjoining work (including Adjacent Work) which may have an impact on such work. D/B CDA Developer shall ensure that the Design Documents and Construction Documents accurately depict all governing and adjoining dimensions.

(e) D/B CDA Developer acknowledges and agrees that it has familiarized itself with the requirements of any and all applicable Laws and the conditions and schedules contained in all Governmental Approvals prior to entering into this Agreement. D/B CDA Developer shall comply with the foregoing at its sole cost and expense and without any increase in the Development Price or extension of any Completion Deadline or any Acceptance Deadline on account of such compliance, regardless of whether such compliance would require additional time for performance or additional labor, equipment and/or materials not expressly provided for in the Contract Documents. D/B CDA Developer has no reason to believe that any Governmental Approval required to be obtained by D/B CDA Developer will not be granted in due course and, thereafter, remain in effect in order to enable the Development Work to proceed in accordance with the Contract Documents. If any Governmental Approval required to be obtained by D/B CDA Developer must formally be issued in the name of the CTRMA, D/B CDA Developer shall undertake all efforts to obtain such approvals, subject to the CTRMA's reasonable cooperation and assistance with D/B CDA Developer, including preparation and delivery of appropriate applications and other documentation in a form approved by the CTRMA.

(f) D/B CDA Developer shall comply with all requirements of the approved Design QMP and the Construction QMP and all requirements of the Quality Assurance Program.

(g) All design and engineering work furnished by D/B CDA Developer shall be performed by or under the supervision of Persons licensed to practice architecture, engineering or surveying, as applicable, in the State, by personnel who are skilled, experienced and competent in their respective trades or professions, who are professionally qualified to perform the Development Work in accordance with the Contract Documents, the Governmental Approvals and applicable Law and who shall assume professional responsibility for the accuracy and completeness of the Design Documents and Construction Documents prepared or reviewed by them.

(h) D/B CDA Developer shall, at all times, schedule and direct its activities to provide an orderly progression of the Development Work to achieve completion within the specified time for completion and in accordance with the Project Schedule, including furnishing such employees, materials, facilities and equipment and working such hours, including continuous or extra shifts, overtime operations, Sundays and holidays as may be necessary to achieve such goal, all at D/B CDA Developer's own expense except as otherwise specifically provided in Section 14.

(i) At all times, including during the course of, and notwithstanding the existence of, any dispute, D/B CDA Developer shall perform as directed by the CTRMA, in a diligent manner and without delay, shall abide by the CTRMA's decision or order, and shall comply with all applicable provisions of the Contract Documents.

(j) D/B CDA Developer is a limited liability company, duly formed, validly existing and in good standing under the Laws of the State of Texas. D/B CDA Developer is composed of Webber, LLC, a Texas limited liability company, and Texas Sterling Construction Co., a Delaware corporation. Each member of D/B CDA Developer is duly qualified to do business and is in good standing under the Laws of the State and will remain in good standing throughout the term of this Agreement and for as long thereafter as any obligations remain outstanding under the Contract Documents.

(k) D/B CDA Developer has the requisite power and all required licenses to carry on its present and proposed activities, and has full power, right and authority to execute and deliver this Agreement and to perform each and all of the obligations of D/B CDA Developer provided for herein.

(l) D/B CDA Developer has taken or caused to be taken all requisite action to authorize the execution and delivery of, and the performance of its obligations under, this Agreement and the other Contract Documents.

(m) Each individual executing this Agreement or any other Contract Documents on behalf of D/B CDA Developer or any of its members has been or will at such time be duly authorized to execute each such document on behalf of such Person.

(n) Neither the execution and delivery of this Agreement and the other Contract Documents by D/B CDA Developer, nor the compliance by D/B CDA Developer with any provision hereof or thereof, nor the consummation of the transactions contemplated hereby or thereby by D/B CDA Developer shall violate or conflict with, or result in a breach of, any provisions of the organizational documents of D/B CDA Developer or its members, any other agreements and instruments to which D/B CDA Developer or its members is a party or by which any such Person is bound, or any Law applicable to D/B CDA Developer or its members.

(o) No consent or approval of, filing with or notice to any Person is required to be obtained or made by D/B CDA Developer or its members in connection with D/B CDA Developer's execution, delivery and performance of this Agreement and the other Contract Documents, or the consummation of the transactions contemplated hereby or thereby, which, if not obtained or made, would prevent D/B CDA Developer from performing its obligations hereunder or thereunder.

(p) There is no action, suit, proceeding, or litigation pending and served on D/B CDA Developer or any of its members which challenges D/B CDA Developer's authority to execute, deliver or perform, or the validity or enforceability of, this Agreement and the other Contract Documents, or which challenges the authority of any individual executing this Agreement on behalf of D/B CDA Developer; and D/B CDA Developer has disclosed to the

CTRMA any pending and unserved action, suit, proceeding, investigation or litigation with respect to such matters of which D/B CDA Developer has actual knowledge.

(q) D/B CDA Developer is in compliance with all Laws applicable to D/B CDA Developer or its activities in connection with this Agreement and the other Contract Documents.

(r) D/B CDA Developer owns, or will own, and has, or will have, good and marketable title to all materials, equipment, tools and supplies furnished, or to be furnished, by it and its Subcontractors that become part of the Project or are purchased for the operation, maintenance or repair thereof, free and clear of all Liens.

(s) D/B CDA Developer has delivered to the CTRMA true and complete copies of the financial information required under Section 26.3 (“**Audited Financial Statements**”). The Audited Financial Statements have been prepared in conformity with generally accepted accounting principles, consistently applied, and present fairly the financial position and results of the operations and cash flows of the applicable entity(ies) at the dates and for the periods stated.

(t) The information, statements, certifications and materials set forth in the Proposal are true, complete and accurate in all material respects and are not misleading in any material respect.

(u) In entering into this Agreement, D/B CDA Developer has not relied on any representation, warranty, promise or statement, express or implied, of the CTRMA, or anyone acting for or on behalf of the CTRMA, other than as expressly set forth in this Agreement, and that all matters concerning the Site, the Development Work and the Project have been or shall be independently verified by D/B CDA Developer, and that D/B CDA Developer has executed this Agreement and has agreed to undertake and complete the Development Work based solely upon D/B CDA Developer’s own prior investigations and examinations, or D/B CDA Developer’s election not to do so.

23. INDEMNIFICATION; RELEASES.

23.1 Indemnification By D/B CDA Developer.

23.1.1 SUBJECT TO SECTION 18.3 HEREOF, D/B CDA DEVELOPER SHALL RELEASE, DEFEND, INDEMNIFY AND HOLD EACH OF THE INDEMNIFIED PARTIES HARMLESS FROM AND AGAINST ANY AND ALL LOSSES ARISING OUT OF, RELATING TO OR RESULTING FROM:

(a) THE BREACH OR ALLEGED BREACH OF THIS AGREEMENT OR ANY OTHER CONTRACT DOCUMENTS BY D/B CDA DEVELOPER.

(b) THE FAILURE OR ALLEGED FAILURE BY ANY MEMBER OF THE D/B CDA DEVELOPER GROUP TO COMPLY WITH ANY APPLICABLE LAWS OR THE GOVERNMENTAL APPROVALS.

(c) ANY ALLEGED PATENT OR COPYRIGHT INFRINGEMENT OR OTHER ALLEGEDLY IMPROPER APPROPRIATION OR USE OF TRADE SECRETS, PATENTS, PROPRIETARY INFORMATION, KNOW-HOW, COPYRIGHT RIGHTS OR INVENTIONS IN PERFORMANCE OF THE DEVELOPMENT WORK, OR ARISING OUT OF ANY USE IN CONNECTION WITH THE PROJECT OF METHODS, PROCESSES, DESIGNS, INFORMATION, OR OTHER ITEMS FURNISHED OR COMMUNICATED TO THE CTRMA OR ANOTHER INDEMNIFIED PARTY PURSUANT TO THE CONTRACT DOCUMENTS; PROVIDED THAT THIS INDEMNITY SHALL NOT APPLY TO ANY INFRINGEMENT RESULTING FROM THE CTRMA'S FAILURE TO COMPLY WITH SPECIFIC WRITTEN INSTRUCTIONS REGARDING USE PROVIDED TO THE CTRMA BY D/B CDA DEVELOPER.

(d) THE ACTS, OMISSIONS, NEGLIGENCE, RECKLESSNESS, WILLFUL MISCONDUCT, BREACH OF CONTRACT OR LAW BY ANY MEMBER OF THE D/B CDA DEVELOPER GROUP.

(e) ANY AND ALL CLAIMS BY ANY GOVERNMENTAL ENTITY CLAIMING TAXES BASED ON GROSS RECEIPTS, PURCHASES OR SALES, THE USE OF ANY PROPERTY OR INCOME OF ANY MEMBER OF THE D/B CDA DEVELOPER GROUP WITH RESPECT TO ANY PAYMENT FOR THE DEVELOPMENT WORK MADE TO OR EARNED BY D/B CDA DEVELOPER OR ITS SUBCONTRACTORS OR ANY OF THEIR RESPECTIVE AGENTS, OFFICERS OR EMPLOYEES UNDER THE CONTRACT DOCUMENTS.

(f) ANY AND ALL STOP NOTICES AND/OR LIENS FILED IN CONNECTION WITH THE DEVELOPMENT WORK, INCLUDING ALL EXPENSES AND ATTORNEYS' FEES AND COSTS INCURRED IN DISCHARGING ANY STOP NOTICE OR LIEN.

(g) ANY (I) RELEASE(S) OF HAZARDOUS MATERIALS ATTRIBUTABLE TO THE ACTS, OMISSIONS, NEGLIGENCE, WILLFUL MISCONDUCT, RECKLESSNESS OR BREACH OF CONTRACT OR LAW BY ANY MEMBER OF THE D/B CDA DEVELOPER GROUP; OR (II) THE RELEASE OF ANY HAZARDOUS MATERIALS CAUSED TO BE PRESENT ON THE FINAL ROW OR ELSEWHERE BY ANY MEMBER OF THE D/B CDA DEVELOPER GROUP REGARDLESS OF WHETHER

THOSE ARE THE PERSONS WHO ACTUALLY CAUSED THE RELEASE AND REGARDLESS OF THE CAUSE FOR THE RELEASE.

(h) ANY INCONVENIENCE, DISRUPTION, DELAY OR LOSS CAUSED BY INTERFERENCE BY ANY MEMBER OF THE D/B CDA DEVELOPER GROUP WITH OR HINDERING THE PROGRESS OR COMPLETION OF WORK BEING PERFORMED BY OTHER CONTRACTORS RELATING TO THE PROJECT, ANY OTHER PROJECT (INCLUDING ADJACENT WORK), OR FAILURE OF ANY MEMBER OF THE D/B CDA DEVELOPER GROUP TO COOPERATE REASONABLY WITH OTHER CONTRACTORS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

(i) ANY CLAIM, DEMAND, SUIT, PROCEEDING, INVESTIGATION OR CAUSE OF ACTION BROUGHT AGAINST THE CTRMA IN CONNECTION WITH THE DESIGN AND CONSTRUCTION OF THE PROJECT OR OTHER DEVELOPMENT WORK, INCLUDING WITH RESPECT TO CONSTRUCTION ACCIDENTS.

(j) ANY CLAIM, DEMAND, SUIT, PROCEEDING, INVESTIGATION OR CAUSE OF ACTION BROUGHT AGAINST THE CTRMA IN CONNECTION WITH (I) D/B CDA DEVELOPER'S PERFORMANCE OF, OR FAILURE TO PERFORM ITS OBLIGATIONS UNDER, ANY UTILITY ADJUSTMENT AGREEMENT, (II) ANY CLAIM FOR REIMBURSEMENT FOR THE COST OF PERFORMING UTILITY ADJUSTMENT WORK MADE BY A UTILITY OWNER AGAINST THE CTRMA, OR (III) ANY DISPUTE AS TO WHETHER WORK RELATING TO A UTILITY ADJUSTMENT CONSTITUTES A BETTERMENT.

23.1.2 SUBJECT TO SECTION 23.2, D/B CDA DEVELOPER SHALL RELEASE, DEFEND, INDEMNIFY AND HOLD EACH OF THE INDEMNIFIED PARTIES HARMLESS FROM AND AGAINST ANY AND ALL LOSSES RESULTING FROM ERRORS, OMISSIONS, INCONSISTENCIES OR OTHER DEFECTS IN THE DESIGN OR CONSTRUCTION, REGARDLESS OF WHETHER SUCH ERRORS, OMISSIONS, INCONSISTENCIES OR DEFECTS WERE ALSO INCLUDED IN THE SCHEMATIC PLAN, EXISTING DESIGN PLANS OR OTHER REFERENCE DOCUMENTS.

23.2 Restrictions.

23.2.1 Subject to the releases and disclaimers herein (including Section 3.7), D/B CDA Developer's indemnity obligations hereunder shall not extend to any Losses incurred by an Indemnified Party to the extent caused by:

(a) the negligence, reckless or willful misconduct, bad faith or fraud of such Indemnified Party, or

(b) any material defect inherent in prescriptive design or prescriptive construction specifications included in the Contract Documents, provided D/B CDA Developer complied with such specifications and did not actually know, or would not reasonably have known, while exercising reasonable diligence, that it was deficient or, if D/B CDA Developer actually knew of the deficiency, unsuccessfully sought the CTRMA's waiver of or approval of a Deviation from such standard; or

(c) the CTRMA's material breach of any of its obligations under the Contract Documents.

23.2.2 Such indemnities shall not be construed to effect any extension of statutes of limitations otherwise applicable to causes of action for breach of contract held by the CTRMA against D/B CDA Developer.

23.2.3 Such indemnities shall apply to third party claims only and shall not be enforceable by the Indemnified Parties as an additional remedy for Losses otherwise compensable through a direct action of the Indemnified Parties against D/B CDA Developer due to D/B CDA Developer's actions or omissions.

23.3 Employee Claims.

In claims by an employee of any member of the D/B CDA Developer Group, the indemnification obligation under Section 23.1 shall not be limited by a limitation on the amount or type of damages, compensation or benefits payable by or for D/B CDA Developer or a Subcontractor under workers' compensation, disability benefit or other employee benefits laws.

23.4 No Relief from Responsibility.

No rights of the CTRMA described in Section 23.1.1 above, no exercise or failure to exercise such rights, and no certificates or statements by the CTRMA regarding completion or acceptance, shall:

(a) relieve D/B CDA Developer of its responsibility for the selection and the competent performance of all members of the D/B CDA Developer Group;

(b) relieve D/B CDA Developer of any of its obligations or liabilities under the Contract Documents;

(c) be deemed or construed to waive any of the CTRMA's rights and remedies under the Contract Documents, applicable Law or in equity; or

(d) be deemed or construed as any kind of representation or warranty, express or implied, by the CTRMA.

23.5 Right to Rely.

Notwithstanding the provisions of Section 23.4, (a) D/B CDA Developer shall be entitled to rely on specific written Deviations the CTRMA gives under this Agreement, (b) the CTRMA is not relieved from any liability arising out of a material misrepresentation under any written statement the CTRMA knowingly and intentionally delivers, and (c) the CTRMA is not relieved from its obligations under the Contract Documents.

23.6 Survival.

The indemnifications and releases under this Agreement, including under this Section 23 shall survive the completion of the Project and/or expiration or termination of this Agreement and/or any other Contract Document(s).

23.7 Intent of Indemnity for Breach of Contract.

The requirement to provide indemnities for acts, omissions, errors, inconsistencies, defects, negligence and/or breach of contract set forth in Sections 23.1.1(a), 23.1.1(d) and 23.1.2 are intended to provide protection to the CTRMA with respect to third party claims associated with such breach. It is not intended to provide the CTRMA with an alternative cause of action for damages incurred directly by the CTRMA with respect to a breach by D/B CDA Developer, nor is this paragraph intended to limit the CTRMA's remedies other than as specifically stated herein.

24. TORT LIABILITY.

24.1 Notice of Claims.

The Parties agree to provide to each other's authorized representative written notice of any claim which such Party may receive from any third party relating in any way to the matters addressed in this Agreement, and shall otherwise provide notice in such form and within such period as is required by Law.

24.2 Limitation on CTRMA'S Liability.

In no event shall the CTRMA or any other Indemnified Party be liable for injury, damage, or death sustained by reason of a defect or want of repair on or within the Site during the period D/B CDA Developer has operation and control of the Site, nor shall the CTRMA be liable for any injury, damage or death caused by the actions, omissions, negligence, willful

misconduct, or breach of applicable Law or contract by any member of the D/B CDA Developer Group. D/B CDA Developer expressly acknowledges and agrees that the CTRMA's rights in this Agreement to take any action with respect to the Project, including the right to review, comment on, disapprove and/or accept designs, plans, specifications, work plans, construction, installation, traffic management details, safety plan and the like, are discretionary in nature and exist solely for the benefit and protection of the CTRMA and do not create or impose upon the CTRMA any standard or duty of care toward D/B CDA Developer or any other Person, all of which are hereby expressly disclaimed.

25. DISPUTE RESOLUTION.

25.1 General Dispute Resolution Provisions.

25.1.1 Nature of Process.

Partnering, as described in Section 2.3 and in Technical Provision 1, will be encouraged in preference to the more formal dispute resolution mechanisms provided in this Agreement. Partnering in this context is intended to be a voluntary, non-binding procedure available for use by the Parties to this Agreement to resolve any issues that may arise during performance of the Development Work.

In the event partnering fails to resolve an issue and D/B CDA Developer elects to pursue a formal Dispute with the CTRMA, the Dispute shall be resolved using the procedures, methods and decision body provided by this Section 25.

25.1.2 Continuation of Development Work.

At all times during this dispute resolution process or any subsequent administrative, arbitration or court proceeding, D/B CDA Developer and all Subcontractors shall proceed with the Project diligently, without delay, in accordance with this Agreement, and as directed by the CTRMA, so long as CTRMA continues to pay D/B CDA Developer for that part of the Development Work that is undisputed.. D/B CDA Developer acknowledges that it shall be solely responsible for any Project delay that results from its actions or inactions during the dispute resolution process, even if D/B CDA Developer's position in connection with the Dispute ultimately prevails. In addition, all Parties shall continue to comply with all provisions of the Contract Documents, the Governmental Approvals and applicable Law.

25.1.3 Exclusive Jurisdiction and Venue.

D/B CDA Developer agrees that the exclusive jurisdiction and venue for any legal action or proceeding, at law or in equity, arising out of or relating to the Contract Documents or the Project, shall be the District Court in Austin, Texas. D/B CDA Developer waives all objections

it might have to the jurisdiction or venue of such court and hereby consents to such court's jurisdiction, regardless of D/B CDA Developer's residence or domicile, for any such action or proceeding.

25.2 Purpose.

25.2.1 **Purpose.** A disputes review board (the "Disputes Board") will be established to assist in the resolution of disputes arising out of the Development Work. This Section 25 describes the purpose, procedure, function, and key features of the Disputes Board. The execution of a Disputes Board Agreement will formalize the creation of the Disputes Board.

25.2.2 **Duties.** The Disputes Board will assist in and facilitate the timely and equitable resolution of disputes between the CTRMA and the D/B CDA Developer, in an effort to avoid construction delay and litigation. It is not the intent of the Dispute Board to serve as a channel for the CTRMA or the D/B CDA Developer to bypass or default on the normal responsibility to amicably and fairly settle their differences by indiscriminately forwarding or assigning them to the Disputes Board for resolution. It is intended that the Disputes Board encourage the CTRMA and the D/B CDA Developer to resolve potential disputes without resorting to this formal appeal procedure.

25.3 Disputes Board Membership.

25.3.1 **General.** A Disputes Board shall be established and begin operation upon Agreement execution by the CTRMA and the D/B CDA Developer, and shall terminate upon completion of all work required to be performed by the D/B CDA Developer on the Project unless sooner in accordance with applicable law.

25.3.2 **Board Members.** The Disputes Board shall initially consist of two members, one selected by the CTRMA and one selected by the D/B CDA Developer. The first duty of the Disputes Board shall be to select its third member. The third member selected shall be approved by both the CTRMA and the D/B CDA Developer. The third member will serve as the chairman for all Disputes Board activities. The goal in selecting the third member is to complement the dispute resolution experience of the first two and to provide leadership for the Disputes Board's activities.

25.3.3 **Experience.** It is desirable and required that all Disputes Board members be experienced with highway design, construction, and environmental compliance, as well as experience in the resolution of disputes involving interpretation of design-build contracts.

25.3.4 Selection Process.

Each Party shall select its Disputes Board member within six weeks after award of this Agreement and provide information regarding the selected individual to the other Party. Immediately upon approval of the first two members, the two members shall begin selection of the third member. The first two members shall ensure that the third member meets all of the criteria listed above. The third member shall be selected within four weeks after the first two members are notified to proceed with the selection. In the event of an impasse in selection of the third member, that member shall be selected by mutual agreement of the CTRMA and the D/B CDA Developer. In so doing, they may, but are not required to, consider the nominees offered by the first two members. If the CTRMA and the D/B CDA Developer cannot agree in the selection of the third member, then each party may submit a list of up to five candidates to a court of competent jurisdiction, pursuant to Section 25.1.3, for judicial resolution of the selection of the third member.

25.3.5 Conflict of Interest.

It is imperative that Disputes Board members show no partiality to either the D/B CDA Developer or the CTRMA, or have any conflict of interest. Accordingly, the following rules are applicable:

25.3.5.1 Members must not have an ownership interest in the CTRMA or the D/B CDA Developer, or a financial interest in this Agreement or the Project, or in the outcome of any dispute decided on the Project, except for payment for serving on the Disputes Board.

25.3.5.2 No member shall have ever been previously employed (or have his/her employer employed) by the CTRMA, the D/B CDA Developer or any affiliate, within two years prior to the Effective Date, except for fee-based consulting services on other projects which are disclosed to all parties, or having had financial ties to, any party to this Agreement.

25.3.5.3 No member shall have had substantial prior involvement in the Project or relationship with any party or affiliate of a nature which would be grounds for disqualification by a judge or which could otherwise compromise his or her ability to impartially resolve disputes.

25.3.5.4 No member shall accept employment with the CTRMA, the D/B CDA Developer or any affiliate during the term of the Project and for so long thereafter as any obligations remain outstanding under the Contract Documents, except as a member of other disputes boards.

25.3.5.5 No member shall discuss employment with the D/B CDA Developer, any affiliate, the CTRMA or any consultants working on the Project during the term

of the Project and for so long thereafter as any obligations remain outstanding under the Contract Documents.

25.3.5.6 Each Board Member, in the performance of his or her duties on the Disputes Board, is acting as an independent contractor and not as an employee of either the CTRMA or the D/B CDA Developer.

25.3.6 Submission of Disclosure Statements.

Before a Board Member appointment is final, the first two prospective members shall submit complete disclosure statements for the approval of both the CTRMA and the D/B CDA Developer. Each statement shall include a resume of experience, together with a declaration describing all past, present and anticipated or planned future relationships to the Project and with all parties involved in this Agreement, including disclosure of past or current professional or close personal relationships with the D/B CDA Developer, any affiliate, the CTRMA or its consultants working on the Project, or with any key member of any such entity. The third Disputes Board member shall supply such a statement to the first two Disputes Board members and to the CTRMA and the D/B CDA Developer before his or her appointment is final.

25.3.7 Execution of Agreements.

Promptly upon approval of the Disputes Board members, the CTRMA, the D/B CDA Developer and the individual Disputes Board members shall enter into individual three-party Disputes Board Agreements which set forth the terms and conditions which apply to the services to be provided by the members. The CTRMA, the D/B CDA Developer, and all three members of the Disputes Board shall execute the Disputes Board Agreement within four weeks after the selection of the third member.

25.3.8 Withdrawal; Termination; Replacements.

Board Members may withdraw from the Disputes Board upon delivery of written notice of withdrawal to the CTRMA, the D/B CDA Developer, and the other Board Members. Notice shall specify a withdrawal date of at least 28 Calendar Days following the date of delivery of the notice. In addition, a member may be terminated by the CTRMA or the D/B CDA Developer if at any time that member fails to meet the qualifications set forth in this Section 25 of this Agreement. Should the need arise to appoint a replacement Board Member, the replacement member shall be appointed in the same manner as provided by this Section 25 for appointment of the original member. The selection of a replacement Board Member shall begin promptly upon notification of the necessity for a replacement, and shall be completed within 28 Calendar Days thereafter. The change in Disputes Board membership shall be evidenced by the new member's signature on the new three-party Disputes Board Agreement.

25.4 Disputes Board Operations.

The Disputes Board shall formulate its own rules of operation in accordance with the Disputes Board Agreement.

25.4.1 Progress Reports.

In order to keep abreast of design and construction development and progress, the members will be provided regular written progress reports and other relevant data mutually agreed upon by the CTRMA and the D/B CDA Developer.

25.4.2 Regular Meetings.

The Disputes Board shall visit the Project and meet with representatives of the CTRMA and the D/B CDA Developer at regular intervals and at times of critical events. The frequency of these visits shall be as agreed among the CTRMA, the D/B CDA Developer and the Disputes Board, depending on the progress of the Work. The regular meetings shall be held at the job site. Each meeting shall consist of an informal round table discussion followed by a field inspection of the Project. The round table discussion shall be attended by selected personnel from the CTRMA and the D/B CDA Developer. The agenda shall generally include the following:

- (a) Meeting convened by the chairman of the Disputes Board;
- (b) Opening remarks by the CTRMA's representative;
- (c) A description by the D/B CDA Developer of the Development Work accomplished since the last meeting, current status of the Project Schedule, schedule for future Development Work, potential disputes and proposed solutions for any problems;
- (d) Discussion by the CTRMA's representative of the Project Schedule as the CTRMA views it, potential disputes, and status of past disputes; and
- (e) Set tentative date for next meeting.

If it is considered necessary by all parties, the Disputes Board or the D/B CDA Developer will prepare minutes of regular meetings and circulate them for comments, revisions, and/or approval of all concerned.

The field inspection shall cover all active segments of the Development Work. Representatives of both the CTRMA and the D/B CDA Developer shall have the right to accompany the Disputes Board on field inspections.

25.4.3 External Communications.

The Parties are expressly prohibited from seeking advice from, consulting with, or discussing any aspect of an existing or potential dispute with, any member of the Disputes Board, unless duly authorized representatives of both Parties agree in writing. A Board Member who has external contact with a party or party representative shall be subject to removal from the Disputes Board for cause.

25.5 Schedule for Dispute Resolution.

25.5.1 Impartiality of Disputes Board.

The Disputes Board shall fairly and impartially consider disputes referred to it, and shall provide written recommendations to the CTRMA and the D/B CDA Developer, to assist in the resolution of disputes submitted to the Disputes Board.

25.5.2 Time Periods.

Disputes shall be considered as quickly as possible, taking into consideration the particular circumstances and the time required to prepare detailed documentation. Steps may be omitted as agreed by both parties, and the time periods stated below may be shortened in order to hasten resolution.

Dispute Escalation Tiers				
<i>Tier</i>	<i>Level of Authority and Responsibility</i>			<i>Time Limit*</i>
	<i>D/B CDA Developer</i>		<i>CTRMA</i>	
1	Construction Engineer or Design Engineer	and	Resident Engineer	2 days
2	Superintendent or Design Manager	and	Project Engineer	5 days
3	Project Manager	and	CTRMA Director of Engineering	14 days

** Time (in working days) in which dispute must be resolved or passed on to the next tier.*

25.5.3 Disputes Board Submittals.

Before the D/B CDA Developer shall have the right to submit a dispute to the Disputes Board, it must first comply with the following procedures.

25.5.3.1 Written Protest Procedure: If the D/B CDA Developer objects to any decision, action or order of the CTRMA (including any rejection or modification of a

proposed Change Order by the CTRMA), the D/B CDA Developer may file a written protest with the CTRMA, stating clearly, and in detail, the basis for the objection, within one week after the date on which the D/B CDA Developer first becomes aware of the decision, action or order. In the event any such protest is not filed within this time period, the D/B CDA Developer shall be deemed to have waived the right to collect any and all costs incurred prior to the date of delivery of the protest, and shall be deemed to have waived the right to seek an extension of the Completion Deadlines with respect to any delay in the Critical Path which occurred prior to the date of the protest. This waiver shall occur whether or not there is any showing of prejudice to the CTRMA resulting from the delay in filing the protest. In no event may D/B CDA Developer submit to the Disputes Board a decision with respect to the testing and adequacy of construction materials.

25.5.3.2 Issuance of CTRMA Decision: The CTRMA will consider the written protest and make its decision (the “CTRMA Decision”) on the basis of the pertinent Contract Document requirements, together with the facts and circumstances involved in the Dispute. The decision will be furnished in writing to the D/B CDA Developer, within two weeks after receipt of the D/B CDA Developer’s written protest, provided that if no written decision is issued, the CTRMA shall be deemed to have denied the D/B CDA Developer’s written protest and a CTRMA Decision to that effect shall be deemed received by the D/B CDA Developer at the end of such two-week period. This decision shall be final and conclusive on the subject, unless a written appeal to CTRMA is filed by the D/B CDA Developer within 30 Days of receiving the CTRMA Decision.

25.5.3.3 Finality of Decision: If a written appeal is submitted to the CTRMA, both parties shall pursue the matter further to attempt to settle the dispute. If the CTRMA fails to issue a new decision within two weeks after the date on which the appeal is submitted, the existing CTRMA decision shall be final and conclusive at the end of such two-week period. If the CTRMA issues a new decision within such two-week period, such decision shall be the CTRMA decision and shall be final and conclusive on the date it is issued.

25.5.3.4 Submittal of Dispute: If the CTRMA decision does not resolve the Dispute, then either Party may submit the dispute to the Disputes Board, or, if the Disputes Board does not then exist, directly to the courts. The dispute shall be submitted to the Disputes Board by written notice of appeal, delivered to the Disputes Board and simultaneously served upon the other party. The notice of appeal (or complaint if the Disputes Board does not exist) shall be filed and served within thirty (30) Calendar Days following the date on which the CTRMA decision becomes final, and shall state clearly and in full detail the specific issues of the dispute to be considered. If no notice of appeal or complaint is filed within thirty (30) Days following the date upon which the CTRMA decision is final, the CTRMA decision shall be final, conclusive and binding upon the parties.

25.5.3.5 Continuance of Work during Dispute: At all times during the course of the dispute resolution process, the D/B CDA Developer shall continue with the Development Work as directed, in a diligent manner and without delay, or shall conform to CTRMA's decision or order, and shall be governed by all applicable provisions of the Contract Documents. Records of the Development Work shall be kept in sufficient detail to enable payment in accordance with applicable provisions in the Contract Documents, if this should become necessary.

25.5.4 Date of Hearing.

When a dispute is appealed to the Disputes Board, the Disputes Board, with input from the D/B CDA Developer and the CTRMA, shall first decide when to conduct the hearing. If the matter is not urgent, it may be heard at the next regular Disputes Board meeting. For an urgent matter, the Disputes Board shall meet at its earliest convenience.

25.5.5 Discovery and Evidence.

Once a notice of appeal is filed with the Disputes Board, discovery shall be permitted to the extent provided for in the Disputes Board Agreement. During the hearing, the D/B CDA Developer and the CTRMA shall each have ample opportunity to be heard and to offer evidence.

25.5.6 Disputes Board Recommendation.

The Disputes Board's recommendations for resolution of the dispute will be given in writing, to both the CTRMA and the D/B CDA Developer, within two weeks of completion of the hearings. In exceptionally difficult cases, this time may be extended by mutual agreement of all parties. Following delivery of the recommendation, if requested by either party, the Disputes Board shall meet with the CTRMA and the D/B CDA Developer to provide additional clarification of its recommendation.

25.5.7 Response.

Within two weeks of receiving the Board's recommendations, or such other time specified by the Disputes Board, both the CTRMA and the D/B CDA Developer shall respond to the other and to the Disputes Board in writing, signifying either acceptance or rejection of the Disputes Board's recommendations. The failure of either party to respond within the specified period shall be deemed an acceptance of the Disputes Board's recommendations. If with the aid of the Disputes Board's recommendations, the CTRMA and the D/B CDA Developer are able to resolve their dispute, the CTRMA will promptly process any required Change Orders.

25.5.8 Further Appeal.

Should the dispute remain unresolved, during the six-month period following issuance of the Disputes Board recommendations, either party may appeal the decision back to the Disputes Board, may submit the dispute to judicial resolution or may resort to other methods of settlement. If the dispute has not been submitted to judicial resolution within such six-month period, and there has been no agreement between the parties for resolution of the dispute, then the parties shall be deemed to have conclusively agreed to accept the recommendation made by the Disputes Board.

25.5.9 Disputes Board Recommendations Not Admissible.

Although both the CTRMA and the D/B CDA Developer should place great weight on the Disputes Board recommendations, no such recommendation will be admissible as evidence in any subsequent litigation or other dispute resolution proceeding, except where the parties agree to resolve the dispute as set forth in Section 25.5.7.

25.6 Hearing.

25.6.1 Location of Hearings.

Normally the hearing will be conducted near the jobsite. However, any location that would be more convenient and still provide all required facilities and access to necessary documentation is satisfactory. Private sessions of the Disputes Board may be held at any convenient location.

25.6.2 Conduct and Record of Hearing.

The third member of the Disputes Board will act as chairman of the hearing, or he or she may appoint one of the other members to be chairman. Normally each member keeps his or her own notes, and a formal transcript is not prepared. In special cases, when requested by either party, the Disputes Board may allow preparation of a transcript by a court reporter. Audio or video recordings are not permitted without approval by both the CTRMA and the D/B CDA Developer.

25.6.3 Hearing Procedures.

The CTRMA and the D/B CDA Developer shall have representatives at all hearings. The D/B CDA Developer will first discuss the dispute, followed by the CTRMA. Each party will then be allowed successive rebuttals until all aspects are fully covered. The Disputes Board members may ask questions, request clarification, or ask for additional data. In large or complex cases, additional hearings may be necessary in order to consider and fully understand all the

evidence presented by both parties. Both the CTRMA and the D/B CDA Developer shall be provided full and adequate opportunity to present all of their evidence, documentation and testimony regarding all issues before the Disputes Board. During the hearings, no Disputes Board member shall express any opinion concerning the merit of any facet of the case.

25.6.4 Recommendations of Disputes Board.

After the hearings are concluded, the Disputes Board shall meet to formulate its recommendations. All Disputes Board deliberations shall be conducted in private, with all individual views kept strictly confidential. The Disputes Board's recommendations, together with an explanation of its reasoning, shall be submitted as a written report to both parties. The recommendations shall be based on the pertinent Contract Documents requirements, applicable Laws, and the facts and circumstances involved in the dispute. The Disputes Board shall make every effort to reach a unanimous recommendation. If this proves impossible, the dissenting member may prepare a minority report.

25.7 Compensation.

Fees and expenses of all three members of the Disputes Board shall be shared equally by the CTRMA and the D/B CDA Developer. The CTRMA will provide administrative services, such as conference facilities and secretarial services, and will have the right to require the D/B CDA Developer to pay for half of the cost of these services. If the Disputes Board desires special services, such as legal consultation, accounting, data research, and the like, both parties must agree, and the costs will be shared by them as mutually agreed. The D/B CDA Developer shall pay the invoices of all Disputes Board members after approval by both parties. The D/B CDA Developer will then bill the CTRMA for 50% of such invoices.

No Board Member will be entitled to any employee benefits.

25.7.1 Expenses.

25.7.1.1 **Payment.** Payment for services rendered by each Board Member and for their direct, non-salary expenses shall be calculated in accordance with the payment schedule for Board Member as agreed upon by the CTRMA, the D/B CDA Developer, and the Board Member.

25.7.1.2 **Invoices.** Invoices for payment for work completed shall be submitted no more often than once per month. Such invoices shall be in a format approved by the CTRMA and accompanied by a general description of activities performed during this period. The value of work accomplished for payment shall be established from the billing rate and hours expended by the Board Member together with direct, non-salary expenses. Billings

for expenses shall include an itemized listing supported by copies of the original bills, invoices, expense accounts, and miscellaneous supporting data.

25.7.1.3 **Records.** Each Board Member shall keep available for inspection, for a period of five years after final payment, the cost records and accounts pertaining to the Disputes Board Agreement.

25.8 **Cooperation.**

The parties shall diligently cooperate with one another and the Disputes Board, and shall perform such acts as may be necessary to obtain a prompt and expeditious resolution of the dispute.

25.9 **Provisional Remedies.**

Subject to Section 25.1.3, no party shall be precluded from initiating a proceeding in a court of competent jurisdiction for the purpose of obtaining any emergency or provisional remedy which may be necessary, to protect its rights, including temporary and preliminary injunctive relief, attachment, claim and delivery, receivership and any extraordinary writ.

25.10 **Participation in Other Proceedings.**

The D/B CDA Developer agrees that at the CTRMA's request, the D/B CDA Developer will allow itself to be joined as a participant in any arbitration or other proceeding that involves the CTRMA and any other participant in the design or construction of any part of the Project. This provision is for the benefit of the CTRMA and not for the benefit of any other party.

25.11 **Governing Law.**

The three-party Disputes Board Agreement shall be governed by and construed in accordance with the law of the State of Texas.

26. **DOCUMENTS AND RECORDS.**

26.1 **Escrowed Proposal Documents.**

Prior to execution of this Agreement, D/B CDA Developer delivered into escrow one copy of all documentary information used in preparation of the Development Price (the "EPDs"). Upon execution of this Agreement, the EPDs shall be transferred from escrow and held in locked fire-proof cabinet(s) supplied by D/B CDA Developer and located in the CTRMA's Project offices or such other location agreed to by the CTRMA and D/B CDA Developer, with the key held only by D/B CDA Developer. Concurrently with approval of each

Change Order or amendment to any Contract Document, one copy of all documentary information used in preparation of the Change Order or amendment shall be added to the cabinet to be held with the other EPDs. The EPDs will be held in such cabinet or otherwise maintained until all of the following have occurred: (a) 180 Days have elapsed from the later of Project Final Acceptance or termination of this Agreement, as applicable; (b) all disputes regarding the Development Work have been settled; and (c) Final Payment has been made and accepted.

26.1.1 Availability for Review.

The EPDs shall be available during business hours for joint review by D/B CDA Developer, the CTRMA and any dispute resolver in accordance with Section 25, in connection with approval of the Project Schedule, negotiation of Change Orders and resolution of disputes under the Contract Documents, and also as described in Section 26.1.6. The CTRMA shall be entitled to review all or any part of the EPDs in order to satisfy itself regarding the applicability of the individual documents to the matter at issue.

26.1.2 Proprietary Information.

Although the EPDs will reside in the CTRMA's office, the EPDs are, and shall always remain, the property of D/B CDA Developer and shall be considered to be in D/B CDA Developer's possession, subject to the CTRMA's right to review the EPDs as provided in this Section 26. D/B CDA Developer will have and control the keys to the filing cabinet containing the EPDs. The CTRMA acknowledges that D/B CDA Developer may consider that the EPDs constitute trade secrets or proprietary information. The CTRMA agrees to maintain the confidentiality of information contained in the EPDs and not to use such information for any purpose other than in connection with the Project.

26.1.3 Representation.

D/B CDA Developer represents and warrants that the EPDs constitute all documentary information used in the preparation of its Development Price. D/B CDA Developer agrees that no other price proposal preparation information will be considered in resolving disputes or claims. D/B CDA Developer further agrees that the EPDs are not part of the Contract Documents and that nothing in the EPDs shall change or modify any Contract Document.

26.1.4 Contents of EPDs.

The EPDs shall, inter alia, clearly detail how each price included in the Proposal has been determined and shall show prices and price elements in sufficient detail as is adequate to enable the CTRMA to understand how D/B CDA Developer calculated the Development Price. The EPDs provided in connection with quotations and Change Orders shall, inter alia, clearly detail how the total price and individual components of that price were determined. The EPDs shall

itemize the estimated costs of performing the required work separated into usual and customary items and cost categories and sub-items and cost categories to present a detailed estimate of costs, such as direct labor, repair labor, equipment ownership and operation, expendable materials, permanent materials, Subcontract costs, plant and equipment, indirect costs, contingencies, mark-up, overhead and profit. The EPDs shall itemize the estimated annual costs of insurance premiums for each coverage required to be provided by D/B CDA Developer under Section 10. The EPDs shall include all assumptions, detailed quantity price reductions, rates of production and progress calculations, and quotes from Subcontractors used by D/B CDA Developer to arrive at the Development Price, amendment price or Change Order price.

26.1.5 Form of EPDs.

Except as otherwise provided in the RFDP, D/B CDA Developer shall submit the EPDs in such format as is used by D/B CDA Developer in connection with its Proposal. D/B CDA Developer represents and warrants that the EPDs provided with the Proposal were personally examined by an authorized officer of D/B CDA Developer prior to delivery, and that the EPDs meet the requirements of Section 26.1.4. D/B CDA Developer further represents and warrants that the EPDs provided in connection with quotations and Change Orders will be personally examined prior to delivery by an authorized officer of D/B CDA Developer, and that they shall meet the requirements of Section 26.1.4.

26.1.6 Review by CTRMA.

The CTRMA may at any time conduct a review of the EPDs to determine whether they are complete. If the CTRMA determines that any data is missing from an EPD, D/B CDA Developer shall provide such data within three Business Days after delivery of the CTRMA's request for such data. At that time of its submission to the CTRMA, such data will be date stamped, labeled to identify it as supplementary EPD information and added to the EPD. D/B CDA Developer shall have no right to add documents to the EPDs except upon the CTRMA's request. The EPDs associated with any Change Order or amendment to this Agreement shall be reviewed, organized and indexed in the same manner described in Section 4.5 of the Instructions to Proposers.

26.2 Subcontract Pricing Documents.

D/B CDA Developer shall require each Subcontractor to preserve all documentary information used in establishing its Subcontract price and to provide such documentation to D/B CDA Developer and/or the CTRMA in connection with any claim exceeding \$250,000 made by such Subcontractor.

26.3 Reporting Requirements.

26.3.1 D/B CDA Developer shall deliver to the CTRMA financial and narrative reports, statements, certifications, budgets and information as and when required under this Agreement.

26.3.2 D/B CDA Developer shall furnish, or cause to be furnished, to the CTRMA such information and statements as the CTRMA may reasonably request from time to time for any purpose related to the Project, this Agreement or the other Contract Documents. In addition, D/B CDA Developer shall deliver to the CTRMA the following financial statements for each Guarantor, at the times specified below:

26.3.2.1 Within 60 Days after the end of each fiscal quarter, duplicate copies of the balance sheet and a consolidated statement of earnings of the Guarantor and its consolidated subsidiaries for such quarter and for the period from the beginning of the then current fiscal year to the end of such quarter, setting forth in comparative form the figures for the corresponding periods during the previous fiscal year, all in reasonable detail and certified as complete and correct, subject to changes resulting from year-end adjustments, by the chief financial officer of the Guarantor;

26.3.2.2 Within 120 Days after the end of each fiscal year, duplicate copies of the balance sheet and a consolidated statement of financial condition of the Guarantor and its consolidated subsidiaries at the end of such year, and statements of earnings, changes in financial position of the Guarantor and its consolidated subsidiaries for such year, setting forth in each case in comparative form the figures for the previous fiscal year, all in reasonable detail and accompanied by an opinion thereon of an independent public accountant of recognized national standing selected by the Guarantor, which opinion shall state that such financial statements have been prepared in accordance with generally accepted accounting principles consistently applied (except for changes in application in which such accountants concur), and that the examination of such accountants in connection with such financial statements has been made in accordance with generally accepted auditing standards, and accordingly, included such tests of the accounting records and such other auditing procedures as were considered necessary in the circumstances; and

26.3.2.3 Upon request of the CTRMA for particular fiscal quarters, copies of all other financial statements and information reported by the Guarantor to its shareholders generally and of all reports filed by the Guarantor with the Securities Exchange Commission under Sections 13, 14 or 15(d) of the Exchange Act, to be provided to the CTRMA as soon as practicable after furnishing such information to the Guarantor's shareholders or filing such reports with the Securities and Exchange Commission, as the case may be.

26.3.3 D/B CDA Developer shall cooperate and provide, and shall cause the Subcontractors to cooperate and provide, such information as determined necessary or desirable

by the CTRMA in connection with the Project financing, including Bond financing, and applications for state and federal assistance (including TIFIA credit and other federal or state financial assistance). Without limiting the generality of the foregoing, D/B CDA Developer shall provide such information deemed necessary or desirable by the CTRMA for inclusion in the CTRMA's securities disclosure documents and in order to comply with Securities and Exchange Commission Rule 15c2-12 regarding certain periodic information and notice of material events. D/B CDA Developer shall provide customary representations and warranties to the CTRMA and the capital markets as to the correctness, completeness and accuracy of any information furnished.

26.3.4 D/B CDA Developer shall cooperate and provide, and shall cause the Subcontractors to cooperate and provide, such information as is necessary or requested by the CTRMA to assist or facilitate the submission by the CTRMA of any documentation, reports or analysis required by the State, TxDOT, USDOT, FHWA and/or any other Governmental Entity with jurisdiction over the Project.

26.3.5 All reports and information delivered by D/B CDA Developer under Sections 26.3.3 and 26.3.4 shall also be delivered electronically, to the extent electronic files exist, and be suitable for posting on the web.

26.4 Maintenance of, Access to and Audit of Records.

26.4.1 D/B CDA Developer shall maintain at its Project administration office a complete set of all books and records prepared or employed by D/B CDA Developer in its management, scheduling, cost accounting and other activities related to the Development Work and the Project. D/B CDA Developer shall grant to the CTRMA such audit rights and shall allow the CTRMA such access to and the right to copy such books and records as the CTRMA may request in connection with the issuance of Change Orders, the resolution of disputes, and such other matters as the CTRMA reasonably deem necessary for purposes of verifying compliance with this Agreement and applicable Law.

26.4.2 Where the payment method for any Development Work is on a time and materials basis, such examination and audit rights shall include all books, records, documents and other evidence and accounting principles and practices sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of such Development Work. If an audit indicates D/B CDA Developer has been overpaid under a previous progress report or progress payment, the excess payment will be credited against current progress reports or payments.

26.4.3 For cost and pricing data submitted in connection with pricing Change Orders, claims or disputes, the CTRMA, TxDOT, FHWA, and their representatives shall have the right to audit all books, records, documents and other data of D/B CDA Developer related to the

performance of Development Work for the purpose of evaluating the accuracy, completeness and currency of the cost or pricing data submitted; provided, however, that the foregoing shall not apply to pricing based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the public or prices set by Law or regulation, in each case, as determined by the CTRMA. Such right of examination shall extend to all documents deemed necessary by the CTRMA, TxDOT, FHWA, and their representatives to permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used therein.

26.4.4 D/B CDA Developer acknowledges that the CTRMA wishes to obtain information regarding the cost of performance of Utility Adjustment Work. D/B CDA Developer agrees to provide the CTRMA with such reports and information as the CTRMA may request from time to time relating to such costs. D/B CDA Developer shall maintain separate records regarding utility costs incurred in performance of the Development Work, and shall allow the CTRMA access to, and the right to copy, such separate records as may be reasonably requested by the CTRMA from time to time, including access to back-up data that would not normally be expected to be delivered in connection with a lump sum contract. The CTRMA agrees that the information described in this Section 26.4.4 shall be used solely for purposes of cost tracking and shall not be relevant for purposes of determining the amount of any payment owing to D/B CDA Developer, provided that the foregoing shall not affect the CTRMA's ability to make any cost adjustment pursuant to any other provision of the Contract Documents.

26.5 Retention of Records.

D/B CDA Developer shall maintain all records and documents relating to the Development Work, including copies of all original documents delivered to the CTRMA, and the Project in Austin, Texas until five years after the date of the expiration of all Warranties hereunder or the termination of this Agreement, whichever is applicable. D/B CDA Developer shall notify the CTRMA where such records and documents are kept. Notwithstanding the foregoing, all records which relate to Demands being processed or actions brought under the dispute resolution provisions hereof shall be retained and made available until such actions and Demands have been finally resolved. Records to be retained include all books, electronic information and files and other evidence bearing on D/B CDA Developer's costs under the Contract Documents. D/B CDA Developer shall make these records and documents available for audit and inspection to the CTRMA, at D/B CDA Developer's offices in Austin, Texas, at all reasonable times, without charge, and shall allow such Persons to make copies of such documents, at no expense to D/B CDA Developer. If approved by the CTRMA, photographs, microphotographs or other authentic reproductions may be maintained instead of original records and documents.

26.6 Public Records Act.

26.6.1 D/B CDA Developer acknowledges and agrees that all records, documents, drawings, plans, specifications and other materials in the CTRMA's possession, including materials submitted by D/B CDA Developer, are subject to the provisions of the Public Information Act. D/B CDA Developer shall be solely responsible for all determinations made by it under such Law, and for clearly and prominently marking each and every page or sheet of materials with "Trade Secret" or "Confidential", as it determines to be appropriate. D/B CDA Developer is advised to contact legal counsel concerning such Law and its application to D/B CDA Developer.

26.6.2 If any of the materials submitted by D/B CDA Developer to the CTRMA are clearly and prominently labeled "Trade Secret" or "Confidential" by D/B CDA Developer, the CTRMA will endeavor to advise D/B CDA Developer of any request for the disclosure of such materials prior to making any such disclosure. Subject to Section 29.2, under no circumstances, however, will the CTRMA be responsible or liable to D/B CDA Developer or any other Person for the disclosure of any such labeled materials, whether the disclosure is required by Law, or court order, or occurs through inadvertence, mistake or negligence on the part of the CTRMA.

26.6.3 In the event of litigation concerning the disclosure of any material submitted by D/B CDA Developer to the CTRMA, the CTRMA's sole involvement will be as a stakeholder retaining the material until otherwise ordered by a court, and D/B CDA Developer shall be fully responsible for otherwise prosecuting or defending any action concerning the materials at its sole cost and risk; provided, however, that the CTRMA reserves the right, in its sole discretion, to intervene or participate in the litigation in such manner as it deems necessary or desirable. All costs and fees, including attorneys' fees and costs, incurred by the CTRMA in connection with any litigation, proceeding or request for disclosure shall be reimbursed and paid by D/B CDA Developer.

27. COOPERATION AND COORDINATION WITH OTHER CONTRACTORS AND GOVERNMENTAL ENTITIES.

27.1 Cooperation with Other Contractors.

The CTRMA reserves the right to contract with others for and perform other or additional work on or near the Site including, but not limited to, the construction of direct connectors at the existing 290 East and SH 183 interchange. D/B CDA Developer shall cooperate with such other contractors to the extent reasonably necessary for the performance by such other contractors of their work, and shall cause all members of the D/B CDA Developer Group to so cooperate. If other separate contracts are awarded by the CTRMA or TxDOT which affect the Development Work, including work related to abutting roadways, connectors and toll collection system design, supply, installation, operation, maintenance and repair, D/B CDA Developer shall conduct its

Development Work without interfering with or hindering the progress or completion of the work being performed by other contractors. The CTRMA shall include similar cooperative language in any other contracts for additional work on or near the Site.

27.2 Interference by Other Contractors.

Except as provided in Section 27.4, if D/B CDA Developer asserts that any of the CTRMA's or TxDOT's other contractors have hindered or interfered with the progress or completion of the Development Work, then D/B CDA Developer's sole remedy shall be to seek recourse against such other contractors.

27.3 Coordination with Governmental Entities and Contractors.

D/B CDA Developer shall coordinate with Governmental Entities, with owners of property adjoining the Project, the toll related work participants, including the System Integrator and CTRMA's contractor for the 183/290E interchange, and contractors involved with Adjacent Work as more particularly described in the Scope of Work.

27.4 Coordination with Toll Related Project Participants; Systems Integrator; Delays.

27.4.1 D/B CDA Developer shall be responsible for coordinating with the CTRMA's contracted Systems Integrator to develop and construct the toll system components of the Project in accordance with Technical Provision 21 and Section 2.5 of the Scope of Work. D/B CDA Developer and the Systems Integrator shall maintain ongoing communication regarding requirements applicable and progress with respect to the intelligent system infrastructure included in the Project as it relates to the tolling system with the CTRMA, representatives of the Texas Department of Public Safety, and TxDOT. The D/B CDA Developer shall not be directly responsible for payment and performance by the Systems Integrator; provided, however, it shall be the responsibility of the D/B CDA Developer to integrate the equipment and services provided by the Systems Integrator into D/B CDA Developer's Project Schedule and to notify the CTRMA immediately if D/B CDA Developer determines that any action or inaction on the part of the Systems Integrator will prevent the D/B CDA Developer from meeting either the Interim Completion Deadline, the Completion Deadline or the Acceptance Deadline.

27.4.2 Subject to the requirements which are generally applicable to Change Orders in Section 14, D/B CDA Developer shall not be entitled to an extension of the Interim Completion Deadline, Completion Deadline and Acceptance Deadline for delays to the Critical Path resulting from D/B CDA Developer's inability to complete activities caused by the Systems Integrator's failure or inability to provide responses to proposed plans, design documents and other submittals and matters for which response is required or any other action or inaction of the Systems Integrator unless D/B CDA Developer contemporaneously with D/B CDA Developer's

discovery of a possible delay caused by the Systems Integrator communicates in writing to the CTRMA a written description of the circumstances that it claims will result in such delay.

28. GOVERNING LAW; COMPLIANCE WITH LAW AND REFERENCE STANDARDS.

28.1 Texas Law.

This Agreement shall be governed and construed in accordance with the laws of the State without regard to conflict of law principles.

28.2 Compliance With Laws and Federal Requirements.

D/B CDA Developer shall comply with, and ensure that all Subcontractors comply with, all requirements of all applicable Laws, including Environmental Laws, and the Federal Requirements.

28.3 Compliance With Referenced Standards.

D/B CDA Developer shall ensure that the Project meets the TxDOT Standards and Specifications, except to the extent that the Contract Documents specifically allow Deviations therefrom. D/B CDA Developer shall also ensure that the Project meets all other applicable referenced standards, except to the extent that the Contract Documents specifically allow Deviations therefrom. Unless specifically designated to the contrary, in cases where this Agreement refers to TxDOT Standards and TxDOT Specifications or any manual, policy, guidance document or other similar document, it shall mean the latest edition or revision thereof and amendments or supplements thereto in effect on the Proposal Date.

29. MISCELLANEOUS.

29.1 Reserved Rights.

Notwithstanding anything to the contrary contained in this Agreement or the other Contract Documents, the CTRMA shall retain and enjoy the Reserved Rights.

29.2 Ownership of Documents.

All data, sketches, charts, calculations, plans, specifications, electronic files, correspondence and other documents created or collected by D/B CDA Developer under the terms of the Contract Documents, with the exception of D/B CDA Developer's internal privileged communications and documents with only incidental references to the Development Work, are the exclusive property of the CTRMA and D/B CDA Developer shall furnish the same

to the CTRMA upon request. All documents prepared by D/B CDA Developer and all documents furnished to D/B CDA Developer by the CTRMA shall be delivered to the CTRMA upon Substantial Completion or termination of this Agreement. The CTRMA acknowledges that such documents delivered to it by Design/Builder were developed specifically for the Project and Design/Builder does not represent that they are suitable for use on another project. Release of any and all information shall be in conformance with the Public Information Act exclusively by and through the CTRMA or its designee. Upon receipt of any such public record request, D/B CDA Developer shall immediately notify the CTRMA, which shall have responsibility for the handling of such request. Prior to the release of any such information, the CTRMA shall provide D/B CDA Developer the opportunity to seek protection for any confidential information through the Texas Attorney General.

29.3 Amendments to Contract Documents.

29.3.1 The Contract Documents may be amended only by a written instrument duly executed by the Parties or their respective successors or assigns. No oral agreement or implied covenant shall be held to vary the terms hereof, any statute, Law or custom to the contrary notwithstanding.

29.3.2 If any provisions of the Contract Documents are rendered obsolete or ineffective in serving their purpose by Change in Law, passage of time, financing requirements or other future events or circumstances, the Parties agree to negotiate in good faith appropriate amendments to or replacements of such provisions in order to restore and carry out the original purposes thereof to the extent practicable; provided, however, that neither Party is obligated to agree to any amendment or replacement which would reduce its rights or enlarge its responsibilities under the Contract Documents in any material respect.

29.4 Waiver.

29.4.1 No waiver by any Party of any right or remedy under the Contract Documents shall be deemed to be a waiver of any other or subsequent right or remedy under the Contract Documents. The consent by one Party to any act by the other Party requiring such consent shall not be deemed to render unnecessary the obtaining of consent to any subsequent act for which consent is required, regardless of whether similar to the act for which consent is given.

29.4.2 No act, delay or omission done, suffered or permitted by one Party or its agents shall be deemed to waive, exhaust or impair any right, remedy or power of such Party under any Contract Document, or to relieve the other Party from the full performance of its obligations under the Contract Documents. No custom or practice between the Parties in the administration of the terms of the Contract Documents shall be construed to waive or lessen the right of a Party to insist upon performance by the other Party in strict compliance with the terms of the Contract Documents.

29.4.3 No waiver of any term, covenant or condition of the Contract Documents shall be valid unless it is in writing and signed by the Party for whom such waiver is sought.

29.4.4 Unless stated expressly to the contrary in any such provision, to the extent that waivers, releases or limitations on liability or remedies are expressed in the Agreement, then all such waivers, releases or limitations shall apply as written, notwithstanding the fault, negligence, or strict liability of the party to be released or whose liability is limited, and shall extend to the officers, employees, and related entities of such party.

29.5 Relationship of Parties.

The relationship of D/B CDA Developer to the CTRMA shall be one of an independent contractor, not an agent, partner, representative, joint venturer or employee. Officials, employees, partners, Subcontractors and agents of D/B CDA Developer shall in no event be considered employees, contractors, agents, partners or representatives of the CTRMA. Notwithstanding the foregoing, Persons performing professional services under this Agreement shall perform their services in keeping with the standard of care applicable to their profession and shall comply with all applicable requirements of the Contract Documents in performance of such services.

29.6 Assignment.

Subject to the limitations of this Section 29.6, the Contract Documents shall be binding upon and shall inure to the benefit of the Parties hereto and their respective legal representatives, successors and permitted assigns, and wherever a reference in any Contract Document to any of the Parties thereto, such reference also shall be deemed to include, wherever applicable, a reference to the legal representatives, successors and permitted assigns of such Party, as if in every case so expressed.

29.6.1 D/B CDA Developer may not, without the prior written consent of the CTRMA (in its sole discretion), voluntarily or involuntarily assign, convey, transfer, pledge, mortgage or otherwise encumber its rights or interests under the Contract Documents. No partner, joint venturer, member or shareholder of D/B CDA Developer may assign, convey, transfer, pledge, mortgage or otherwise encumber its ownership interest in D/B CDA Developer without the prior written consent of the CTRMA, in its sole discretion.

29.6.2 The CTRMA may transfer and assign its interests in the Project, this Agreement and any other Contract Document

(a) to any other public agency or public entity as permitted by Law, provided that the successor or assignee has assumed all of the CTRMA's obligations, duties and liabilities

under the Contract Document then in effect, and has provided D/B CDA Developer with reasonable assurance of its legal and financial authority to honor and perform the same.

(b) to the Bond Trustee as security for the performance of the CTRMA's obligations to the Bond Trustee. In the event of such an assignment, the term "CTRMA" as used in this Agreement shall be deemed to mean the Bond Trustee as assignee of the CTRMA, and as such assignee the Bond Trustee shall have all rights accorded to the CTRMA. Any Bond Trustee may, in connection with any default under any financing document, assign any rights assigned to it hereunder to any Person.

(c) to any other Person with the prior written approval of D/B CDA Developer and the Bond Trustee.

29.7 Designation of Representatives; Cooperation with Representatives and with Financing Entities.

The Parties hereto shall each designate an individual or individuals who shall be authorized to make decisions and bind the Parties on all matters relating to the Contract Documents except insofar as such authority may be limited by the particular provision or the delegation of such authority in accordance with this Section 29.7. Exhibit N hereto provides the initial designations of the authorized representatives. Such designations may be changed by a subsequent writing delivered to the other Party in accordance with Section 29.12.

29.8 No Gift or Dedication.

29.8.1 Nothing contained in this Agreement shall be deemed to be a gift or dedication of any portion of the Project, Final ROW or Development Work to the general public, or be deemed to create any rights to be held by the general public in the Project, Final ROW or Development Work except as expressly set forth herein.

29.8.2 D/B CDA Developer shall not, other than as provided by Law, directly or indirectly, give, offer or promise anything of value to any present or former CTRMA, FHWA or TxDOT employee or consultant that might reasonably tend to influence them in the discharge of their official duties or is offered with the intent to influence official conduct, for or because of any official act performed or to be performed by such employee. The phrase "anything of value", as used herein means any item of value, including invitations or tickets to sporting events, social gatherings, outings or parties, or the provision of meals or lodging, or the use of vehicles of any kind, and any other item or thing of monetary value.

29.9 Use of Police and Other Powers.

Nothing in this Agreement limits the authority of the CTRMA to exercise its regulatory, statutory and police powers granted by Law, including its powers of condemnation with respect to all or any part of the Project, the Final ROW and any of D/B CDA Developer’s rights hereunder.

29.10 Survival.

All covenants, agreements, representations and warranties made in or pursuant to the Contract Documents shall be deemed continuing and made at and as of the date of each such document and at and as of all other applicable times during the course of the Project. All covenants, agreements, representations and warranties made in or pursuant to the Contract Documents shall survive the expiration or earlier termination thereof and shall not be waived by the execution and delivery of the Contract Documents, by completion of construction, by any investigation by the CTRMA or by any other event except a specific written waiver by the Party against whom waiver is asserted.

29.11 No Third Party Beneficiaries.

Nothing contained in the Contract Documents is intended or shall be construed as creating or conferring any rights, benefits or remedies upon, or creating any obligations of the Parties toward any Person or entity not a Party hereto, except to the extent that specific provisions (such as the warranty and indemnity provisions) identify third parties and state that they are entitled to benefits hereunder.

29.12 Notices and Communications.

29.12.1 Notices under the Contract Documents shall be in writing and (a) delivered personally, (b) sent by certified mail, return receipt requested, (c) sent by a recognized overnight mail or courier service, with delivery receipt requested, or (d) sent by facsimile communication followed by a hard copy and with receipt confirmed by telephone, to those individuals designated by D/B CDA Developer and the CTRMA from time to time in writing:

D/B CDA Developer:
Central Texas Mobility Constructors, LLC
14333 Chrisman Road
Houston, Texas 77039
Atten: Lawrence G. Hurley
Phone: 281-987-8787
Fax: 281-449-6658

With a copy to:

Mario Menendez
14333 Chrisman Road
Houston, Texas 77039
Phone: 281-987-8787
Fax: 281-227-8849

CTRMA:

Central Texas Regional Mobility Authority
301 Congress Ave.
Suite 650
Austin, Texas 78701
Attn: Director of Engineering
Phone: (512) 996-9778
Fax: (512) 996-9784

In addition, copies of all notices to proceed and suspension, termination and default notices forwarded by either Party shall be delivered to the following Persons:

Curtis R. Ashmos
Locke Lord Bissell & Liddell LLP
100 Congress Ave.
Suite 300
Austin, Texas 78701
Phone: (512) 305-4716
Fax: (512) 391-4716

Texas Department of Transportation
Austin District Office
7901 N. IH35
Austin, Texas 78753
Attn: Austin District Engineer
Phone: _____
Fax: _____

All communications to the CTRMA shall be clearly marked with the contract number to identify this Agreement and the Project name and location.

29.12.2 Notices shall be deemed received when actually received in the office of the addressee, or by the addressee if personally delivered, or when delivery is refused, as shown on the receipt of the U. S. Postal Service, private carrier or other Person making the delivery. Notwithstanding the foregoing, notices sent by telefacsimile after 4:00 p.m. Central Standard or Daylight Time, as applicable, and all other notices received after 5:00 p.m. shall be deemed received on the first Business Day following delivery. As an example, in order for a fax to be deemed received on the same Day, at least the first page of the fax must have been received before 4:00 p.m. D/B CDA Developer's representatives shall be available at all reasonable times for consultation with the CTRMA.

29.12.3 D/B CDA Developer shall forward a copy of all written correspondence pertaining to the Project between D/B CDA Developer any railroad, Utility Owner, owner of any property adjacent to the Project or which may potentially be acquired in connection with the Project and any representative of any Governmental Entity to the CTRMA within five 5 Days after receipt thereof.

29.13 **Further Assurances.**

Each Party shall promptly execute and deliver to other all such instruments and other documents and assurances as are reasonably requested by the other Party to further evidence the obligations of the Parties hereunder.

29.14 **Severability.**

If any term or provision of the Contract Documents, the deletion of which would not adversely affect the receipt of any material benefit by either Party hereunder, shall be held by a court of competent jurisdiction to be invalid or unenforceable, the remainder of the Contract Documents shall not be affected thereby and each other term and provision of the Contract Documents shall be valid and enforceable to the fullest extent permitted by Law. If any clause or provision of the Contract Documents that is found to be illegal, invalid or unenforceable, the Parties agree that they shall in good faith (a) promptly meet and negotiate a substitute therefore which shall, to the greatest extent legally permissible, effect the original intent of the Parties; and (b) if necessary or desirable, apply to the court which declared such invalidity for a judicial construction of the invalidated portion to guide the negotiations.

29.15 **Headings.**

The captions of the sections of the Contract Documents identified therein are inserted solely for convenience. Under no circumstances are they or any of them to be treated or construed as part of each such instrument, except to the extent that the provision cannot be understood without the caption.

29.16 Interpretation of Contract Documents.

29.16.1 In the Contract Documents, where appropriate and unless otherwise specified: the singular includes the plural and vice versa; references to statutes or regulations include all statutory or regulatory provisions consolidating, amending or replacing the statute or regulation referred to; the words “including,” “includes” and “include” shall be deemed to be followed by the words “without limitation”; references to sections, appendices or schedules are to the document in which they are contained; words such as “herein,” “hereof” and “hereunder” shall refer to the entire document in which they are contained and not to any particular provision or section; words not otherwise defined which have well-known technical or construction industry meanings, are used in accordance with such recognized meanings; references to Persons include their respective permitted successors and assigns and, in the case of Governmental Entities, Persons succeeding to their respective functions and capacities; and words of either gender used herein shall include each other gender where appropriate. Unless otherwise specified, lists contained in the Contract Documents defining the Project or the Development Work shall not be deemed all-inclusive. Furthermore, notwithstanding the rule of law to the effect that specific provisions contained in a contract shall govern over general provisions, and specific provisions in the Contract Documents which describe tasks included in the Development Work shall not constitute a limit on the Scope of Work, unless specifically so stated.

29.16.2 D/B CDA Developer acknowledges and agrees that it had the opportunity and obligation, prior to submission of its Proposal, and during the negotiation process prior to award of this Agreement, to review the terms and conditions of the Contract Documents and to bring to the attention of the CTRMA any conflicts or ambiguities contained therein. D/B CDA Developer further acknowledges and agrees that it has independently reviewed the Contract Documents with legal counsel, and that it and each of its members has the requisite experience and sophistication to understand, interpret and agree to the particular language of the provisions of the Contract Documents. Accordingly, in the event of an ambiguity in or dispute regarding the interpretation of the Contract Documents, they shall not be interpreted or construed against the Party which prepared them, and instead other rules of interpretation and construction shall be utilized.

29.16.3 The final answers to the questions posed during the Proposal process shall in no event be deemed part of the Contract Documents and shall not be relevant in interpreting the Contract Documents except as they may clarify provisions otherwise considered ambiguous.

29.16.4 Headings set forth in the Contract Documents are set forth for convenience and shall not be used to interpret the terms thereof.

29.17 Approvals under Contract Documents.

In all cases where approvals or consents are required to be provided under the Contract Documents by the CTRMA, D/B CDA Developer or other parties thereto, such approvals or consents shall not be withheld unreasonably except in cases where a different standard (such as sole discretion) is specified. In cases where sole discretion is specified, the decision shall not be subject to dispute resolution hereunder.

29.18 Counterparts.

This instrument may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

29.19 Non-Business Days.

If the date to perform any act or give any notice specified in the Contract Documents falls on a non-Business Day, such act or notice may be timely performed on the next succeeding Business Day. Notwithstanding the foregoing, requirements contained in the Contract Documents relating to actions to be taken in the event of an emergency, and other requirements for which it is clear that performance is intended to occur on a non-Business Day, shall be required to be performed as specified, even though the date in question may fall on a non-Business Day.

29.20 Entire Agreement.

The Contract Documents constitute the entire and exclusive agreement between the Parties relating to the specific matters covered herein and therein. All prior or contemporaneous oral or written agreements, understandings, representations and/or practices relative to the foregoing are hereby superseded, revoked and rendered ineffective for any purpose.

29.21 Monetary Obligations Subject to Appropriation.

All monetary obligations under the Contract Documents are subject to the availability of funds provided to the CTRMA by TxDOT, some or all of which may be subject to appropriation by the Texas Legislature or by the United States Congress. In the event that either the Texas Legislature or the United States Congress fails to appropriate funds required to satisfy the monetary obligations under the Contract Documents, CTRMA shall terminate this Agreement pursuant to Section 16, and such termination will not be a default by the CTRMA. The CTRMA shall only be obligated to make payments under the Contract Documents for services rendered through the effective date of any such termination together with D/B CDA Developer's termination costs, if any, as contemplated by such Section. The Contract Documents do not create a debt under the Texas Constitution.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date and year first set forth above.

D/B CDA DEVELOPER: CENTRAL TEXAS MOBILITY CONSTRUCTORS, LLC.

By: Webber, LLC

By: _____
Name: _____
Title: _____

By: Texas Sterling Construction Co.

By: _____
Name: _____
Title: _____

CTRMA: CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

By: _____
Name: _____
Title: _____

EXHIBIT A

ABBREVIATIONS AND DEFINITIONS

EXHIBIT A

ABBREVIATIONS AND DEFINITIONS

Unless otherwise specified, wherever the following abbreviations or terms are used in this Agreement and the Scope of Work, they shall have the meanings set forth below:

AAP	AASHTO Accreditation Program
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
ACI	American Concrete Institute
ACT	Antiquities Code of Texas
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AISC	American Institute of Steel Construction, Inc
ANSI	American National Standards Institute
ARC	Average Recycled Content
AREMA	American Railway Engineering Association
ASTM	American Society of Testing and Materials
ATC	Alternative Technical Concept
AVI	Automatic Vehicle Identification
AWS	American Welding Society
BI	Base Index
BMP	Best Management Practice
BO	Biological Opinion
CADD	Computer Aided Drafting and Design
CCI	Construction Cost Index
CDA	Comprehensive Development Agreement
CD-R	Compact Disc Recordable
CD ROM	Compact Disc Read Only Memory
CFR	Code of Federal Regulations
CMP	Construction Monitoring Plan
CO	Carbon Monoxide
CQA	Construction Quality Acceptance
CQC	Construction Quality Control

CQCM	Construction Quality Control Manager
CQMP	Construction Quality Management Plan
CRCP	Continuous Reinforced Concrete Pavement
CSJ	Control Section Job
CST/M&P	Construction Division, Materials and Pavement Section (TxDOT)
CTRMA	Central Texas Regional Mobility Authority
CUE	Civil/Utility Engineer
CWA	Clean Water Act
CWMP	Construction and Demolition Waste Management Plan
D/B	Design Build
DBE	Disadvantaged Business Enterprise
DEIS	Draft Environmental Impact Statement
DQA	Design Quality Assurance
DQC	Design Quality Control
DQCM	Design Quality Control Manager
DQMP	Design Quality Management Plan
DP	Development Price
DRB	Disputes Review Board
DSS	Decent Safe and Sanitary (dwelling)
EA	Environmental Assessment
ECI	Environmental Compliance Inspector
ECM	Environmental Compliance Manager
ED	Environmental Documents
EIS	Environmental Impact Statement
EMR	Environmental Monitoring Report
EP	Extraction Procedure (toxicity)
EPA	United States Environmental Protection Agency
EPD	Escrowed Proposal Documents
EPIC	Environmental Permits Issues and Commitments
ESA	Endangered Species Act of 1973, as amended
ESAL	Equivalent Single-Axle Load
ET	Environmental Team
ETC	Electronic Toll Collection
ETCS	Electronic Toll Collection System
FA	Final Acceptance
FAPG	FHWA's Right-of-Way Project Development Guide

FCA	Final Construction Acceptance (Final Acceptance)
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FSS	Facilities Security System
FTP	File Transfer Protocol
FHWA	Federal Highway Administration
FOB	Field Operation Building
FWA	Final Warranty Acceptance
GAAP	Generally Accepted Accounting Principles
GIS	Geographical Information System
HMA	Hot Mix Asphalt
HOV	High Occupancy Vehicle
HVAC	Heating Ventilation and Air Conditioning
IA	Independent Assurance
ID	Identification
IH	Interstate Highway
IRI	International Roughness Index
ISDN	Integrated Services Digital Network
ISI	Initial Serviceability Index
ITP	Instructions to Proposers
ITS	Intelligent Transportation System
IWP	Investigative Work Plan
JSA	Job Safety Analysis
LED	Light-Emitting Diode
LRFD	Load and Resistance Factor Design
LSLS	Licensed State Land Surveyor
MOT	Maintenance of Traffic
MOU	Memorandum of Understanding
MPH	Miles Per Hour
MQAF	Materials Quality Acceptance Firm
MQAM	Materials Quality Acceptance Manager
MQAT	Materials Quality Acceptance Testing
MS4	Municipal Separate Storm Sewer System
MSE	Mechanically Stabilized Earth
MSL	Mean Sea Level

MTP	Mainline Toll Plaza
MUAA	Master Utility Adjustment Agreement
NAVD	North American Vertical Datum
NBI	National Bridge Inventory
NBIS	National Bridge Inspection Standards
NCHRP	National Cooperative Highway Research Program
NCR	Non-Conformance Report
NEC	National Electrical Code
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historical Preservation Act
NHS	National Highway System
NICET	National Institute for Certified Engineering Technicians
NMP	Noise Mitigation Plan
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
NTP	Notice to Proceed
OSB	Overhead Sign Bridge
OSHA	Occupational Safety and Health Administration
OSM	Office of Surface Mining
OVT	Owner Verification Tests
PA	Programmatic Agreement
PCC	Portland Cement Concrete
PCO	Proposed Change Order
PCS	Pavement Condition Survey
PDA	Project Development Agreement
PH	Percent Hydrogen
PI	Plasticity Index
PI	Principle Investigator
PIP	Public Information Plan
PM	Project Manager
PMP	Project Management Plan
POS	Project Operating System
PPDS	Project Power Distribution System
QAP	Quality Assurance Program

QC / QA	Quality Control / Quality Assurance
QMP	Quality Management Plan
QS	Qualifications Submittals
RE	Resident Engineer
RFC	Released for Construction
RFDP	Request for Detailed Proposals
RFI	Request For Information
RFCQ	Request for Competing Qualifications
RHA	Rivers and Harbors Act
ROD	Record of Decision
ROW	Right-of-Way
ROWIS	Right-of-Way Information System
RPLS	Registered Public Land Surveyors
RTP	Ramp Toll Plazas
S.F.	Square Foot
SH	State Highway
SHPO	State Historic Preservation Officer
SI	System Integrator
SIR	Site Investigative Report
SSCB	Single Slope Concrete Barrier
SSTR	Single Slope Traffic Railing
SUE	Subsurface Utility Engineering
SW3P	Stormwater Pollution Prevention Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TCLP	Toxicity Characteristic Leaching Procedure
THC	Texas Historical Commission
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIM / OS	Turnpikes Intelligent Management / Operation System
TL	Testing Level
TMUTCD	Texas Manual on Uniform Traffic Control Devices
TPDES	Texas Pollutant Discharge Elimination System
TSI	Terminal Serviceability Index
TxDOT	Texas Department of Transportation
UAA	Utility Adjustment Agreement
UAAA	Utility Adjustment Agreement Amendment

UAR	TxDOT Utility Accommodation Rules
UCL	Utility Clearance Letter
UCS	Utility Coordination Specialist
UJUA	Utility Joint Use Agreement
UM	Utility Manager
UPA	Utility and Personnel Access-Way
UPS	Uninterruptible Power Supply
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USPAP	United States Professional Appraisal Practices
VMS	Variable Message Sign
WBS	Work Breakdown Structure

AASHTO Guidelines shall mean the standards for design and construction of roadways and related facilities promulgated by American Association of State Highway and Transportation Officials.

Abbreviated Utility Assembly shall mean a compilation of utility documents in a format, and containing the documents, as described in Section 8.11.7 of the Technical Provisions.

Acceleration Costs shall mean those fully documented increased costs reasonably incurred by D/B CDA Developer (that is, costs over and above what D/B CDA Developer would otherwise have incurred) which are directly and solely attributable to increasing the rate at which the Development Work is performed in an attempt to complete necessary elements of the Development Work earlier than otherwise anticipated, such as for additional equipment, additional crews, lost productivity, overtime and shift premiums, increased supervision and any unexpected material, equipment or crew movement necessary for re-sequencing in connection with acceleration efforts and/or a Recovery Schedule.

Acceptance Deadline shall have the meaning set forth in Section 5.2.3 of this Agreement.

Act shall have the meaning set forth in Recital C of this Agreement.

Additional Properties shall mean any real property (which term is inclusive of all permanent estates and interests in real property), improvements and fixtures outside of the Schematic ROW, that will be acquired in connection with the Project, including (a) the Mitigation Site and rest area sites, (b) the D/B CDA Developer-Designated ROW, and (c) any additional real property outside of the Schematic ROW that must be acquired due to a CTRMA-Directed Change, including any air space, surface rights and subsurface rights within such additional real property area that CTRMA directs D/B CDA Developer to acquire for the Project. The term specifically excludes (y) New Utility Property Interests and (z) any temporary easements or other temporary real property interests that D/B CDA Developer may deem necessary or advisable to acquire, at its own cost and expense, for work space, contractor lay-down areas, material storage areas, or other convenience of D/B CDA Developer.

Additional Utility MOU shall mean a Utility MOU which is not included in Exhibit D-8b.

Adjacent Work shall mean any project, work, improvement or development to be planned, designed or constructed which could or does impact the Project and/or is adjacent to the Project. Examples of Adjacent Work include proposed subdivisions, other roads constructed by Governmental Entities, site grading and drainage and other development improvement plans and Utility projects.

Adjust shall mean to perform an Adjustment.

Adjustment shall have the meaning set forth in Scope of Work Section 8.1.

Adjustment Permits shall mean all Governmental Approvals and any private approvals, including the consent of a property owner, necessary for any Utility Adjustment. The term specifically excludes Utility Joint Use Agreements.

Affiliate shall mean: (1) any Person which directly or indirectly through one or more intermediaries controls, or is controlled by, or is under common control with, D/B CDA Developer or any Major Participant, other than the entity responsible for Materials Quality Assurance; and (2) any Person for which 10% or more of the equity interest in such Person is held directly or indirectly, beneficially or of record by D/B CDA Developer, any Major Participant other than the entity responsible for Materials Quality Assurance or any Affiliate of D/B CDA Developer under clause (1) of this definition. For purposes of this definition the term “control” means the possession, directly or indirectly, of the power to cause the direction of the management of a Person, whether through voting securities, by contract, family relationship or otherwise.

Agreement (or Contract) shall mean that certain Design/Build Comprehensive Development Agreement, to which this Exhibit A is attached, executed by the CTRMA and D/B CDA Developer, including any and all amendments thereto.

Alternate Procedure shall mean the alternate procedure for processing Utility Adjustments for FHWA approval pursuant to 23 C.F.R. Section 645.119, which was approved by the FHWA for TxDOT by letter dated October 16, 1973.

Alternative Technical Concept shall mean a concept developed by a Proposer, during the procurement, that requires approval by the CTRMA due to a deviation or deviations from the Project requirements. Alternative Technical Concepts approved by the CTRMA, and included in the successful Proposer’s Proposal, shall be incorporated into the Development Work.

Archaeologist shall mean a member of the Project Environmental Team responsible for assessment of cultural resources potentially impacted by the Development Work.

As-Built Documents or Record Drawings shall mean the documents to be provided by D/B CDA Developer for the completed Project as described in the Technical Provisions.

Audited Financial Statements shall have the meaning set forth in Section 22.2(s).

Austin District shall mean the Austin District of the Texas Department of Transportation

Average Recycled Content shall mean the ratio of recycled material to total material as expressed in a percentage as determined in accordance with Technical Provision 26.

Baseline Schedule shall mean the original Project Schedule submitted with the Proposal.

Basic Configuration shall mean the following elements defining the Project as set forth in the Schematic Plan:

- (a) the mainline horizontal and mainline vertical alignments,^{1/}
- (b) number of lanes, including auxiliary lanes,
- (c) the general location of the toll gantries,
- (d) the general location of ramps, and
- (e) the general location of interchanges and the type of interchanges, if any.

Basic Costs shall have the meaning set forth in the definition of “Cost Differential” as set forth in this Exhibit A.

Basic Material shall mean any material that cannot be segregated without changing the material composition of the material component itself including but not limited to binders, aggregate, base and subbase or embankment materials, metal, finished plastic, and wood. Existing asphalt qualifies as a Basic Material when used as recycled asphalt pavement because it is difficult to separate the binder from the aggregate.

Best Efforts means the efforts that a prudent business person desirous of achieving a result would use exercising sound business judgment in similar circumstances to achieve that result as expeditiously as reasonably practical, provided, however, that a person required to use Best Efforts under the Agreement will not be thereby required to take actions that would result in a material adverse change in the benefits to such person under the Agreement

Best Management Practices shall have the meaning set forth in *Storm Water Management For Construction Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA Document 832 R 92-005).

Betterment shall mean, with respect to any Utility being Adjusted, any upgrading of such facility in the course of such Adjustment that is not attributable to the construction of the

^{[1]/} In determining whether a material change in Basic Configuration to the mainline alignment (item (a) of the Basic Configuration definition) has occurred, the following standards shall apply: no material change in Basic Configuration shall be deemed to have occurred as the result of any horizontal alignment or vertical alignment shift unless it causes any component of the project defined by the Schematic Plan (excluding private property access roads, drainage facilities and utility relocations) to be located outside of the Schematic ROW, or requires a re-evaluation of the Environmental Document to be issued.

Project and is made solely for the benefit of and at the election of the Utility Owner; provided, however, that the following shall not be considered Betterments:

- (a) any upgrading which is required by the Project;
- (b) replacement devices or materials that are of equivalent standards although not identical;
- (c) replacement of devices or materials no longer regularly manufactured with the next highest grade or size;
- (d) any upgrading required by applicable Law;
- (e) replacement devices or materials which are used for reasons of economy (e.g., non-stocked items may be uneconomical to purchase); or
- (f) any upgrading required by the Utility Owner's written "standards."

For fiber optic Utilities, extension of an Adjustment to the nearest splice boxes shall not be considered a Betterment if required by the Utility Owner in order to maintain its written telephony standards.

In case of a dispute as to whether or not a particular upgrade to a Utility qualifies as a Betterment, the CTRMA and D/B CDA Developer shall apply the guidance and policies set forth in the TxDOT Utility Adjustment Rules; provided, however, that for purposes of said Rules, any upgrading required by the Utility Owner's written "standards" shall be deemed to be of direct benefit to the highway project.

Notwithstanding the foregoing, (a) any component of an Adjustment which is established as a betterment in the applicable Utility Adjustment Agreement shall be deemed a "**Betterment**" for purposes of this Agreement, and (b) in case of any discrepancy between the definition of "**Betterment**" set forth above in this Exhibit A and the definition of betterment set forth in a particular Utility Adjustment Agreement, the term "**Betterment**" shall have the meaning set forth in such Utility Adjustment Agreement for all Adjustments to which such Utility Adjustment Agreement applies.

Board Member shall mean a member of the Disputes Board described in Section 25 of the Agreement.

Bond or **Bonds** shall mean any bond or bonds issued to fund the costs of development, design, construction, operation, repair and maintenance of the Project, except where specifically used in the context of Proposal Bond, Performance Bond, Payment Bond and Warranty Bond.

Bond Trustee shall mean the Person or Persons acting as bond trustee, paying agent or other designated representative of the bondholders under any bond indenture or resolution for the

Bonds or any other indebtedness issued by the CTRMA to finance the Project, its legal successor, or any other commercial bank or trust company duly organized and existing under the laws of any state or the United States of America, which is authorized under the laws of the State to exercise corporate trust powers and is subject to examination by federal authority, appointed pursuant to the Project Finance Documents as its successor or its successors.

Business Day (or Working Day) shall mean days on which the CTRMA is officially open for business.

Category A Personnel shall mean those individuals performing the roles listed under “Category A” in Technical Provision 1.

Category B Personnel shall mean those individuals performing the roles listed under “Category B” in Technical Provision 1.

Certified Wood shall mean wood deemed certified by the Forest Stewardship Council (<http://www.fscus.org>).

Change in Law shall mean the enactment, adoption, modification, repeal or other change in any Law that occurs after the Proposal Date, including any change in the judicial or administrative interpretation of any Law, or adoption of any new Law, which is materially inconsistent with Laws in effect on the Proposal Date, but excluding any such change in or new Law which was passed or adopted but not yet effective as of the Proposal Date.

Change Order shall mean a written order issued by the CTRMA to D/B CDA Developer delineating changes in the requirements of the Contract Documents in accordance with Section 14 of this Agreement and establishing, if appropriate, an adjustment to the Development Price, the Completion Deadline or the Acceptance Deadline.

Claim shall mean a separate demand by D/B CDA Developer, which is disputed by the CTRMA, for a time extension under this Agreement, or payment of money or damages arising from work done on behalf of D/B CDA Developer in connection with this Agreement.

Completion Deadline shall have the meaning set forth in Section 5.2.1 of this Agreement.

Construction and Demolition Waste Management Plan shall mean the plan developed by the D/B CDA Developer in accordance with Technical Provision 26 that addresses how waste on the Project will be handled.

Construction Documents shall mean all shop drawings, working drawings, fabrication plans, material and hardware descriptions, specifications, construction quality control reports, construction quality acceptance reports and samples necessary or desirable for construction of the Project in accordance with the Contract Documents.

Construction Fund shall mean the Construction Fund established by the Project Finance Documents, and includes any separate accounts or sub-accounts established by the terms of the Contract Documents.

Construction General Permit shall mean a permit under the TPDES program for the management of storm water discharges from construction sites as more particularly described in Technical Provision 9.

Construction Monitoring Plan (CMP) shall mean the plan indicating times, locations, and other conditions under which monitoring of construction activities are to be performed to maintain and ensure compliance with Environmental Laws and Contract Documents as more particularly described in Technical Provision 9.

Construction Quality Control Manager (CQCM) shall have the meaning set forth in Technical Provision 2.

Construction Quality Management Plan (CQMP) shall have the meaning set forth in Technical Provision 2.

Contract Documents shall mean this Agreement, including all exhibits, appendices, and the other documents listed in Section 1.2 of this Agreement, including all amendments to the foregoing and all Change Orders issued.

Cost Differential shall mean the following:

- (a) For any Unidentified Utility for which D/B CDA Developer is claiming an increase in the Development Price, the “**Cost Differential**” shall be the incremental increase in the “Basic Costs” described below for such Utility which is directly attributable to the lacking or inaccurate information which was included in the Existing Utility Information.

For purposes of this definition, the “Basic Costs” for the Adjustment of any Utility shall mean the costs for the following, whether incurred by D/B CDA Developer directly or reimbursed by D/B CDA Developer to a Utility Owner:

- (i) design and construction of such Adjustment, plus
- (ii) acquisition of New Utility Property Interests or compensation to the Utility Owner for relinquishment of Existing Utility Property Interests within the Final ROW required for such Adjustment.

For purposes of paragraph (a) above, any incremental increase in Basic Costs shall be determined by comparing (i) the Parties’ reasonable estimate of the actual Basic Costs which D/B CDA Developer will incur in Adjusting such Utility, based on D/B CDA Developer’s final determination of its location, ownership, type and other characteristics (referred to in this

definition as the “Final Utility Information”) and in accordance with the final Adjustment design developed and approved pursuant to Technical Provision 8 (provided, however, that for any Unidentified Utility which is not in fact Adjusted, the amount of such estimate shall be zero), with (ii) the Parties’ reasonable estimate of the Basic Costs which D/B CDA Developer would have incurred in Adjusting such Utility, based on the Existing Utility Information (provided, however, that for any Unidentified Utility not shown at all on the Existing Utility Information, or for which no Adjustment would have been necessary based on the Existing Utility Information, the amount of such estimate shall be zero). The estimates used for the foregoing comparisons shall comply with the requirements of Section 14.6 of this Agreement. If the Parties are unable to agree upon a reasonable estimate of the actual Basic Costs which D/B CDA Developer will incur in Adjusting a Utility based on the Final Utility Information and final Adjustment design, then the amount of such actual Basic Costs shall be based on time and materials records pursuant to Section 14.7 of this Agreement.

The calculation of the Cost Differential with respect to a particular facility shall be subject to all limitations on Change Orders set forth in Section 14 of this Agreement, in addition to the following:

- (i) All estimates of Basic Costs (A) shall exclude Acceleration Costs and any other delay or disruption damages, and (B) shall be made in accordance with Section 14.6 of this Agreement (including mark-ups not to exceed the amounts specified in Section 14.7 of this Agreement).
- (ii) The costs for comparable items shall be determined on the same basis for each estimate prepared for a particular Utility, whether based on the Existing Utility Information or on the Final Utility Information.
- (iii) The Basic Costs and Cost Differential shall be calculated on a facility-by-facility basis, individually for each Utility facility, regardless of whether such facility is addressed together with other facilities in a single Utility Adjustment Agreement.

Critical Path shall mean each critical path on the Project Schedule, which ends on the Completion Deadline or the deadline for Final Acceptance, as applicable (i.e. the term shall apply only following consumption of all available Float in the schedule for Substantial Completion or Final Acceptance, as applicable). The lower case term "critical path" shall mean the activities and durations associated with the longest path(s) through the Project Schedule.

CTRMA shall mean the Central Texas Regional Mobility Authority, and any entity succeeding to the powers, authorities and responsibilities of the CTRMA invoked by or under the Contract Documents. References herein to CTRMA with respect to certain approvals and the exercise of certain authority shall include CTRMA’s duly appointed designees.

CTRMA-Caused Delays shall mean unavoidable delays arising from the following matters and no others, but only to the extent that they (i) materially adversely affect a Critical Path, (ii) are not mitigated or susceptible of handling by a work around, and (iii) are not due to an act, omission, negligence, recklessness, willful misconduct, breach of contract or violation of Law of or by any member of the D/B CDA Developer Group:

- (a) CTRMA-Directed Changes;
- (b) Failure or inability of the CTRMA to make D/B CDA Developer Designated ROW available on or before 120 Days following CTRMA or TxDOT approval of the condemnation packet in accordance with Section 6.5 of this Agreement;
- (c) Failure or inability of the CTRMA to make Schematic ROW available for construction within the time frame specified in Section 6.6 of this Agreement;
- (d) Failure or inability of the CTRMA to provide responses to proposed schedules, plans, Design Documents, condemnation and acquisition packages, and other submittals and matters for which response is required, within the time periods (if any) indicated in the Contract Documents, or other failure of CTRMA to act within a reasonable time period with respect to actions which it is required to take under this Agreement, following delivery of written notice from D/B CDA Developer requesting such action in accordance with the terms and requirements of this Agreement;
- (e) Uncovering, removing and restoring Development Work pursuant to Section 7.3.3 of this Agreement if such Development Work exposed or examined is in conformance with the requirements of the Contract Documents, the Governmental Approvals and applicable Law, unless such conforming Development Work was performed or materials used without adequate notice to and opportunity for prior inspection by the CTRMA.
- (f) Failure or inability of the CTRMA to provide New Environmental Approvals to the extent that such New Environmental Approvals are necessitated by a CTRMA-Directed Change.
- (g) Failure or inability of the CTRMA to complete those Utility Adjustments specified in Section 14.12.8 within the time period set forth in such Section 14.12.8.

Any suspension of Development Work arising from litigation shall not be considered a CTRMA-Caused Delay (although it may qualify as a Force Majeure Event under clause (g) of

the definition of “**Force Majeure Event**”) despite the fact that CTRMA may specifically direct D/B CDA Developer to suspend the Development Work.

CTRMA-Directed Changes shall mean any changes in the scope of the Development Work or terms and conditions of the Contract Documents (including changes in the standards applicable to the Development Work) that increase D/B CDA Developer’s costs by more than \$50,000, which CTRMA has directed D/B CDA Developer to perform as described in Section 14.1 of this Agreement.

CTRMA Director of Engineering shall mean the person designated by the CTRMA to serve in such capacity for the Project.

CTRMA-Provided Approvals shall mean the following:

- (a) the EA, FONSI and re-evaluation decision;
- (b) approvals under the National Historic Preservation Act (16 U.S.C. §470(f)) and implementing regulations (36 C.F.R §§800, et seq.) to the extent the CTRMA has agreed to be responsible therefor; and
- (c) any other CTRMA provided Governmental Approval set forth in Section 9.1.1 of Exhibit B – Scope of Work.

Day or day shall mean calendar days unless otherwise expressly specified.

D/B CDA Developer shall mean Central Texas Mobility Constructors, LLC, a Texas limited liability company, together with its partners, members, employees, agents, officers, directors, shareholders, representatives, consultants, successors and assigns.

D/B CDA Developer-Designated ROW shall mean any permanent interest in real property (which term is inclusive of all estates and interests in real property), improvements and fixtures outside of the Schematic ROW that D/B CDA Developer determines is necessary or advisable to be acquired for the Project and which acquisition is approved by the CTRMA to be acquired at D/B CDA Developer’s cost and expense, excluding the New Utility Property Interests. The term specifically includes any easements required for drainage for the Project defined by the Project Design. The term specifically includes any air space, surface rights and subsurface rights within the D/B CDA Developer-Designated ROW. The term specifically excludes any temporary easements or other temporary real property interests that D/B CDA Developer may deem necessary or advisable to acquire, at its own cost and expense, for excessive work space, contractor lay-down areas, material storage areas, or other convenience of D/B CDA Developer.

D/B CDA Developer Group shall mean (i) D/B CDA Developer, (ii) partners, joint venturers and/or members in or with D/B CDA Developer, (iii) Subcontractors (including Suppliers), (iv) any other Persons performing any of the Development Work, (v) any other

Persons for whom D/B CDA Developer may be legally or contractually responsible, and (vi) the employees, agents, officers, directors, shareholders, representatives, consultants, successors, assigns and invitees of any of the foregoing.

D/B CDA Developer-Managed Utility Adjustment Agreement shall mean a Utility Adjustment Agreement providing for construction by the D/B CDA Developer of the Utility Adjustment(s) addressed therein.

DBE Performance Plan shall mean D/B CDA Developer's plan for meeting the DBE participation goals submitted with the Proposal.

DBE Program shall mean that program used by the CTRMA for federally assisted projects such as the Project, as set forth in Exhibit H to this Agreement.

Delay Event shall have the meaning set forth in Section 17.3 of this Agreement.

Design Acceptance shall mean the CTRMA's program to provide confidence that the DQMP objectives and results meet the requirements of the Contract Documents. While the D/B CDA Developer retains responsibility for internal quality control and quality assurance of its design products, the CTRMA's Design Acceptance program will include external assurance reviews of the D/B CDA Developer processes that may include calculation checks, plan reviews, audits of the D/B CDA Developer's DQMP or other actions as deemed appropriate by the CTRMA. TxDOT and the FHWA will retain the right to review and comment on all design submittals.

Design Documents shall mean all drawings (including plans, elevations, sections, details and diagrams), specifications, reports, calculations, records and submittals necessary for, or related to, the design of the Project in accordance with the Contract Documents, the Governmental Approvals and applicable Law.

Design Exception shall mean a deviation from the Project design criteria and any design standards referenced in the Contract Documents. A Design Exception requires written approval by the CTRMA, TxDOT and FHWA depending on the deviation for which approval is sought.

Design Firm shall mean the qualified Registered Professional Engineer's firm responsible for the design of the Project.

Design QMP shall have the meaning set forth in Technical Provision 2.

Design Quality Management Plan (DQMP) shall have the meaning set forth in Technical Provision 2.

Design Quality Control Manager (DQCM) shall have the meaning set forth in Technical Provision 2.

Development Price shall mean the price set forth in Section 13.1 of this Agreement, as it may be modified from time to time in accordance with the express provisions of this Agreement.

Development Work or Work shall mean all of the work required to be furnished and provided by D/B CDA Developer under the Contract Documents, including all administrative, design, engineering, real property acquisition and occupant relocation, support services, Utility Adjustment Work to be furnished or provided by D/B CDA Developer, reimbursement of Utility Owners for Utility Adjustment Work furnished or provided by such Utility Owners or their contractors and consultants, procurement, professional, manufacturing, supply, installation, construction, supervision, management, testing, verification, labor, materials, equipment, maintenance, documentation and other duties and services to be furnished and provided by D/B CDA Developer as required by the Contract Documents, including all efforts necessary or appropriate to achieve Final Acceptance of the Project except for those efforts which such Contract Documents expressly specify will be performed by Persons other than members of the D/B CDA Developer Group.

Deviations shall mean any change, deviation, modification or alteration from the requirements of the Contract Documents, applicable Law and the Governmental Approvals.

Differing Site Condition shall mean: (1) subsurface or latent conditions which differ materially from those conditions indicated in the geotechnical reports included in Exhibit D-Item 06 - Geotechnical Reports, at the actual boring holes as identified in such geotechnical reports; or (2) physical conditions of an unusual nature, differing materially from those ordinarily encountered in the area and generally recognized as inherent in the type of work provided for in the Agreement. The term shall specifically exclude all such conditions of which D/B CDA Developer had actual or constructive knowledge as of the Proposal Date. The foregoing definition specifically excludes (a) changes in surface topography; (b) variations in subsurface moisture content; (c) Utility facilities; (d) Hazardous Materials, including contaminated groundwater; and (e) any conditions which constitute or are caused by a Force Majeure Event.

Direct Costs shall mean the actual out-of-pocket costs incurred with respect to an item of Development Work, without any additional mark up, compensation percentage for overhead, profit or other indirect costs. Such term shall include applicable sales taxes, freight and delivery charges.

Directive Letter shall have the meaning set forth in Section 14.1.1.2 of this Agreement.

Disadvantaged Business Enterprise or **DBE** shall have the meaning set forth in Exhibit H to this Agreement.

Disputes Board shall mean the disputes board established to assist in the resolution of disputes arising out of the Development Work, as detailed in Section 25 of the Agreement.

Disputes Board Agreement shall have the meaning set forth in Section 25.3.7 hereof.

Draw Request shall mean a Draw Request and Certificate in the form of Exhibit L to this Agreement.

Duct Bank shall have the meaning provided in Exhibit C – Technical Provision 18.

Dust/Emission and Odor Control Plan shall mean the plan developed by the D/B CDA Developer in accordance with Technical Provision 26 that delineates how dust, emissions, and odor will be mitigated on the Project.

Early Release for Construction shall have the meaning provided in Technical Provision 2.

Early Schematic ROW Acquisition shall mean acquisition of Schematic ROW parcels to be performed by or on behalf of CTRMA prior to issuance of NTP.

Early Utility Adjustment shall mean Utility Adjustment work performed before issuance of NTP as described in Technical Provision 8.

Effective Date shall mean the date of this Agreement or such other date as shall be mutually agreed upon in writing by the CTRMA and D/B CDA Developer.

Engineering News Record Construction Cost Index shall mean the 12-month “Construction Cost Index” published by Engineering News-Record.

Environmental Approvals shall mean all Governmental Approvals arising from or required by any Environmental Law in connection with development of the Project.

Environmental Assessment (EA) shall mean the EA performed by FHWA with respect to the Project.

Environmental Compliance Inspectors (ECIs) shall mean the person(s) who provide on-site monitoring of the Project under direction of the Environmental Compliance Manager as more particularly described in Technical Provision 9.

Environmental Compliance Manager (ECM) shall mean the person responsible for monitoring, documenting, and reporting environmental compliance for the Development Work as more particularly described in Technical Provision 9.

Environmental Documents (ED) shall mean the final versions of the following three (3) documents: (i) Exhibit D-1a – Environmental Assessment; (ii) Exhibit D-1b – Finding of No Significant Impact (FONSI); and (iii) Exhibit D-1c – Environmental Assessment Re-Evaluation, as more particularly described in Exhibit B – Scope of Work, Section 1.

Environmental Law shall mean any Law that regulates or governs the use, generation, manufacture, storage, handling, treatment, recycling, transportation, or disposal of Hazardous Material or pollution or protection of human health, safety, and the environment, including: (1) the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. §§ 9601, *et seq.*); (2) the Hazardous Materials Transportation Act (49 U.S.C. §§ 1801, *et seq.*); (3) the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901, *et seq.*); (4) the Toxic Substances Control Act (15 U.S.C. §§ 2601, *et seq.*); (5) the Clean Water Act (33 U.S.C. §§ 1251, *et seq.*); (6) the Clean Air Act (42 U.S.C. §§ 7401, *et seq.*); (7) the Emergency Planning and Community Right-to-Know Act (42 U.S.C. §§ 11001, *et seq.*); (8) the Oil Pollution Act (33 U.S.C. §§ 2701, *et. seq.*); (9) the Texas Health and Safety Code, including Chapter 382 (the Clean Air Act), Chapter 383 (the Clean Air Financing Act), Chapter 361 (the Texas Solid Waste Disposal Act), Chapter 362 (the Solid Waste Resource Recovery Financing Act), Chapter 363 (the Municipal Solid Waste Act), Chapter 364 (the County Solid Waste Control Act), Chapter 370 (the Texas Toxic Chemical Release Reporting Act), Chapter 371 (the Texas Used Oil Collection, Management, and Recycling Act), Chapter 401 (the Texas Radioactive Materials and Other Sources of Radiation Act), Chapter 402 (the Texas Low-Level Radioactive Waste Disposal Authority Act), Chapter 502 (the Texas Hazard Communication Act), Chapter 505 (the Texas Manufacturing Facility Community Right-To-Know-Act), Chapter 506 (the Texas Public Employer Community Right-To-Know-Act), and Chapter 507 (the Texas Nonmanufacturing Facilities Community Right-To-Know-Act); (10) the Texas Natural Resources Code, including Chapter 40 (the Texas Oil Spill Prevention and Response Act of 1991); (11) the Texas Water Code; (12) the Texas Parks and Wildlife Code; (13) the Texas Agriculture Code, including Chapter 76 (Pesticide and Herbicide Regulation) and Chapter 125 (the Agricultural Hazard Communication Act); (14) the Texas Asbestos Health Protection Act (Article 4477-3a, Texas Civil Statutes); (15) the Surface Coal Mining and Reclamation Act (Article 5920-11, Texas Civil Statutes); and (16) any other analogous state, local or municipal statutes, all as amended, enacted or as they may be amended or enacted from time to time. The term "Environmental Law" shall not include the Occupational Safety and Health Act (29 U.S.C. Section 651, *et seq.*).

Environmental Monitoring Program shall mean the program that the Environmental Compliance Manager supervises. The program includes monitoring field activities for environmental compliance by environmental inspectors, producing weekly reports, providing an environmental training program including a training staff, and developing an environmental team as more particularly described in Technical Provision 9.

Environmental Monitoring Reports (EMRs) shall mean the weekly reports prepared by D/B CDA Developer providing detailed information on development activities, species or resources monitored, and compliance / non-compliance issues as more particularly described in Technical Provision 9.

Environmental Protection Training Program shall mean that program to be initiated by D/B CDA Developer and overseen by CTRMA personnel to ensure the Development Work is conducted in accordance with the environmental commitments and requirements set forth in all

Laws, rules, regulations, and environmental approvals applicable to the Project as more particularly described in Technical Provision 9.

Environmental Team (ET) shall mean the personnel team appointed by D/B CDA Developer to ensure compliance with all Laws, rules, regulations, and environmental approvals applicable to the Project as more particularly described in Technical Provision 9.

Environmental Training Staff shall mean project personnel with appropriate experience appointed by D/B CDA Developer to develop and implement an Environmental Protection Training Program as more particularly described in Technical Provision 9.

Escrowed Proposal Documents or **EPDs** shall have the meaning set forth in Section 26.1 of this Agreement.

Event of Default shall have the meaning set forth in Section 17.2 of this Agreement.

Existing Design Plans shall mean the preliminary design plans provided in Exhibit D-3a, Exhibit D-3b, and Exhibit D-3c.

Existing Utility Information shall mean the documents provided in Exhibit D-8a.

Existing Utility Property Interest shall mean any right, title or interest in real property (e.g., a fee or an easement) claimed by a Utility Owner as the source of its right to maintain an existing Utility in such real property, which is compensable in eminent domain.

Expendable Materials shall mean construction materials (e.g. wood, steel, concrete and re-bar) and equipment (e.g. shovels, power tools, office equipment or computers) that are completely incorporated into the Development Work or have no salvage value at completion of the Development Work.

Federal Requirements shall mean the provisions required to be part of federal-aid construction contracts, including the provisions set forth in Exhibit E to this Agreement.

Federal Utility Procedure List shall mean the list of applicable Utility Owners and other pertinent information as described in Section 8.13.3 of the Technical Provisions that will be submitted to FHWA.

Final Acceptance or **Project Final Acceptance** or **Final Contract Acceptance** or **Final Construction Acceptance** shall mean the occurrence of all of the events and satisfaction of all of the conditions set forth in Section 20.3 of this Agreement for final acceptance of the Project.

Final As-Built Plans shall mean the final plans on which the D/B CDA Developer shall have documented all changes made to the Final Design Package during the construction process. All field changes shall be documented and updated on the Final As-Built Plans set including changes from all Construction RFI's.

Final Design shall mean, depending on the context: (a) the Final Design Plans, (b) the design concepts set forth in the Final Design Plans or (c) the process of development of the Final Design Plans.

Final Design Plans or **Final Design Documents** or **Final Design Package** shall mean the complete design package of Plans and supporting documentation addressing all constructability, DQC, DQA, CTRMA, TxDOT, FHWA or other agency reviews and comments in accordance with the Contract Documents. The Final Design Package represents a complete package for the Project corridor or a pre-established section of the Project with defined Project station limits.

Final Design Submittal shall have the meaning set forth in Technical Provision 2.

Final Draw Request shall mean the written request for Final Payment under the Agreement as described in Section 13.6 of this Agreement.

Final Environmental Impact Statement (FEIS) shall mean the final environmental impact statement issued by the FHWA with respect to the Project.

Final Payment shall mean payment by CTRMA of the final installment of the Development Price, as modified in accordance with the terms of this Agreement.

Final ROW shall mean the Schematic ROW and the Additional Properties, but excluding therefrom any portion of the Schematic ROW eliminated from the Project by a Change Order.

Final Utility Information shall have the meaning set forth in the definition of “**Cost Differential**” as set forth in this Exhibit A.

Final Warranty Acceptance shall have the meaning set forth in Technical Provision 3.

Finance Closing Date shall mean the date on which all of the following have occurred (i) adoption of the CTRMA Board resolution authorizing the Indenture securing the Bonds; (ii) the Bonds have been issued, sold and delivered to investors in accordance with the terms of the Project Finance Documents and the initial funds for performance of the Development Work have been released thereunder; (iii) adoption of the TxDOT Minute Order authorizing TxDOT funding for the Project; and (iv) all other capital and funds required for payment of the Development Work and the Development Price for the Project shall have been contractually obligated.

Finding of No Significant Impact (FONSI) shall mean the FONSI issued by the FHWA with respect to the Project.

Fiscal Year shall mean the calendar year or any other consecutive 12-month period selected by D/B CDA Developer and approved by the CTRMA.

Float shall mean generally the difference between early completion times and late completion times for activities as shown on the Project Schedule, and shall include any float contained within an activity as well as any period containing an artificial activity (that is, one which is not encompassed within the meaning of “Development Work”), as more particularly described in Section 5.6 of this Agreement.

Force Majeure Event shall mean any of the events listed in clause (a) through (h) below, subject to the exclusions listed in clauses (i) through (viii) below, which materially and adversely affects D/B CDA Developer’s obligations, provided such events are beyond the control of members of the D/B CDA Developer Group and are not due to an act, omission, negligence, recklessness, willful misconduct, breach of contract or Law of any member of the D/B CDA Developer Group, and further provided that such events (or the effects of such events) could not have been avoided by the exercise of caution, due diligence, or reasonable efforts by D/B CDA Developer:

- (a) Any earthquake, tornado, hurricane or other natural disaster in the vicinity of and directly affecting the Project;
- (b) Any epidemic, blockade, rebellion, war, riot, act of sabotage or civil commotion in the vicinity of and directly affecting the Project;
- (c) The discovery at, near or on the Final ROW (excluding D/B CDA Developer-Designated ROW) of any archaeological, paleontological or cultural resources provided that the existence of such resources or substances was not disclosed in, or ascertainable from, the RFDP Documents, was not otherwise known to D/B CDA Developer prior to the Proposal Date and would not have become known to D/B CDA Developer by undertaking reasonable investigation prior to the Proposal Date, and excluding any risks of delays arising from such discovery allocated to D/B CDA Developer in Section 14.10.1 of this Agreement;
- (d) The discovery at, near or on the Final ROW of any species listed as threatened or endangered under the federal or State endangered species act (regardless of whether the species is listed as threatened or endangered as of the Proposal Date);
- (e) Any Change in Law, which results in an increase in D/B CDA Developer’s costs of at least \$150,000 as a result of (1) a material modification of the Project design, (2) a new major State or federal environmental approval not previously required for the Project, or (3) a law that specifically targets the Project or D/B CDA Developer;
- (f) Any Release of Hazardous Material by a third party who is not a member of the D/B CDA Developer Group which occurs after the Proposal Date and is required to be reported to a Governmental Entity and which renders use of the roadway or construction area unsafe absent assessment, containment and/or remediation;

- (g) Issuance of a temporary restraining order or other form of injunction by a court that prohibits prosecution of a material portion of the Development Work, except to the extent arising out of, related to or caused by, the delay, act, omission, negligence, willful misconduct, recklessness or breach of contract or Law by any member of the D/B CDA Developer Group; and
- (h) The suspension, termination, interruption, denial or failure to obtain or non-renewal of any CTRMA-Provided Approval, except to the extent that such suspension, termination, interruption, denial or failure to obtain or non-renewal arises from any modification by D/B CDA Developer in the Final Design from the original design concept included in the Environmental Document.

The term “**Force Majeure Event**” shall be limited to the matters listed above and specifically excludes from its definition the following matters which might otherwise be considered a force majeure event:

- (i) any fire or other physical destruction or damage, or delays to the Project which occur by action of the elements, including lightning, explosion, drought, rain, flood, snow, storm, except as specified in clause (a) above;
- (ii) except as provided in clause (b) above, malicious or other acts intended to cause loss or damage or other similar occurrence, including vandalism or theft;
- (iii) any strike, labor dispute, work slowdown, work stoppage, secondary boycott, walkout or other similar occurrence;
- (iv) the suspension, termination, interruption, denial, failure to obtain, non-renewal or change in any requirements of any Governmental Approval, except for any such matter falling within the scope of clause (e), (f) or (h) above;
- (v) any increased costs or delays related to any Utility Adjustment Work or railroad work or failure to obtain any approval, work or other action from a Utility Owner or railroad, except to the extent directly due to any of the matters listed in clause (a) through (h) above;
- (vi) the presence at, near or on the Site, as of the Effective Date, of any Hazardous Material, including substances disclosed in the Reference Documents;
- (vii) any Change in Law which has the effect of modifying a Utility Owner’s required specifications, standards of practice and/or construction methods for the Utility Adjustment Work to be furnished or performed by D/B CDA Developer (or reimbursed by D/B CDA Developer), which occurs

after the Proposal Date but prior to the date on which the applicable Utility Adjustment Agreement is signed by the Utility Owner; and

- (viii) any matters not caused by the CTRMA or beyond the control of the CTRMA and not listed in clause (a) through (h) above.

Formal Design Review shall mean Plan reviews required in the process of developing the Final Design Package:

- (i) Preliminary Submittal (30%) Design: Schematic plans modified to reflect the final plan format with D/B CDA Developer suggested revisions.
- (ii) Intermediate Submittal (65%) Design: Plans completed to reflect all improvements sufficiently detailed to allow clear understanding of intentions and impacts.
- (iii) Final Submittal (100%) Design: Plans completed to reflect all improvements sufficiently to allow construction to be completed.

Generally Accepted Accounting Principles or **GAAP** shall mean such accepted accounting practice as, in the opinion of the accountant, conforms at the time to a body of generally accepted accounting principles.

General Engineering Consultant (GEC) shall mean PBS&J, or any other entity designated in writing by the CTRMA to serve as its GEC, together with any subconsultants to PBS&J.

Geotechnical Engineering Reports shall mean the reports which meet the requirements described in the Technical Provision 14.

Governmental Approval shall mean any permit, license, consent, authorization, waiver, variance or other approval, guidance, mitigation agreement, or memoranda of agreement/understanding, and any amendment or modification of any of them provided by Governmental Entities including State or federal regulatory agencies, agents, or employees, which authorize Development Work, but excluding any such approvals given by or required from any Governmental Entity in its capacity as a Utility Owner or railroad owner.

Governmental Entity shall mean any federal, State or local government and any political subdivision or any governmental, quasi-governmental, judicial, public or statutory instrumentality, administrative agency, authority, body or entity other than the CTRMA.

Green Credit(s) shall mean the credits awarded to the D/B CDA Developer for completion of Mandatory Sustainable Initiatives and Optional Sustainable Initiatives as more fully described in Technical Provision 26.

Guarantor shall mean each of the entities which provided a guarantee in the form of some or all of the obligations of D/B CDA Developer under this Agreement.

Hazardous Materials shall mean (i) any chemical, material or substance at any time defined as or included in the definition of “hazardous substances”, “hazardous wastes”, “hazardous materials”, “extremely hazardous waste”, “acutely hazardous waste”, “radioactive waste”, “bio-hazardous waste”, “pollutant”, “toxic pollutant”, “contaminant”, “restricted hazardous waste”, “infectious waste”, “toxic substance”, or any other term or expression intended to define, list or classify substances by reason of properties harmful to health, safety or the indoor or outdoor environment (including harmful properties such as ignitability, corrosivity, reactivity, carcinogenicity, toxicity, reproductive toxicity, “TCLP” toxicity” or “EP toxicity” or words of similar import under any applicable Environmental Laws); (ii) any oil, petroleum, petroleum fraction or petroleum derived substance; (iii) any drilling fluids, produced waters and other wastes associated with the exploration, development or production of crude oil, natural gas or geothermal resources; (iv) any flammable substances or explosives; (v) any radioactive materials; (vi) any asbestos-containing materials; (vii) urea formaldehyde foam insulation; (viii) electrical equipment which contains any oil or dielectric fluid containing polychlorinated biphenyls; (ix) pesticides; and (x) any other chemical, material or substance, exposure to which is prohibited, limited or regulated by any Governmental Entity or which may or could pose a hazard to the health and safety of the owners, operators, users or any Persons in the vicinity of the Project or to the indoor or outdoor environment.

Hazardous Materials Delay shall have the meaning set forth in Section 14.8.5 of this Agreement.

Hazardous Materials Management shall mean sampling, stock-piling, storage, backfilling in place, asphalt batching, recycling, treatment, clean-up, remediation, transportation and/or off-site disposal of Hazardous Materials, whichever is the most cost-effective approach authorized under applicable Law.

Hazardous Materials Management Plan shall have the meaning set forth in Technical Provision 9.

Hazardous Materials Manager shall mean the person designated by the Environmental Compliance Manager to provide expertise in the safe handling of Hazardous Materials in accordance with Technical Provision 9.

Identified Utility shall mean any Utility impacted by the Project to which any one or more of the following applies:

- (a) Its owner is accurately stated on the Existing Utility Information, and, as determined by the CTRMA, the location and extent of such Utility as shown on the Existing Utility Information (whether as existing or proposed) is a reasonable representation of the location and extent of such

Utility, given the quality level of investigation performed in developing the Existing Utility Information;

- (b) Its type (e.g., gas, water, electric) is accurately stated on the Existing Utility Information (differences in material, e.g., clay vs. plastic, shall not be considered a difference in type), and, as determined by the CTRMA, the location and extent of such Utility as shown on the Existing Utility Information (whether as existing or proposed) is a reasonable representation of the location and extent of such Utility, given the quality level of investigation performed in developing the Existing Utility Information;
- (c) It is an overhead Utility existing as of the Proposal Date or which commenced installation prior to the Proposal Date;
- (d) A surface inspection of the area in which the Utility is located on the Proposal Date would have shown the Utility's existence or the likelihood of its existence by reason of above-ground facilities such as buildings, meters, manholes or markers; provided, however, that if D/B CDA Developer has not been granted access to the parcel on which a Utility is located prior to the Proposal Date, then for purposes of determining whether a surface inspection would have shown the Utility's existence or likelihood of its existence, such surface inspection shall be deemed to have been made from the nearest parcel to which D/B CDA Developer has been granted access prior to the Proposal Date, or from the nearest public right of way, whichever is closer; or
- (e) It is located in the same trench as an Identified Utility, and is of the same type or ownership as the Identified Utility.

If a Utility falls within any of the categories listed in clauses (a) through (e) above, then it is an Identified Utility regardless of any discrepancy between (i) the information provided on the Existing Utility Information, and (ii) the actual characteristics of that Utility with respect to its size, its horizontal or vertical location, its ownership, its type, or any other characteristic. Without limiting the generality of the foregoing, if a Utility is shown on the Existing Utility Information as being on public right of way, and it is in fact located on private right of way, or vice versa, that discrepancy is of no relevance in determining whether or not that Utility is an Identified Utility.

Incidental Utility Adjustment Work shall mean all of the following that is necessary or determined by the D/B CDA Developer to be required for the construction and/or accommodation of the Project:

- (a) service line relocation/adjustments including appurtenances whether or not shown as an Identified Utility;
- (b) temporary relocation/adjustments;
- (c) Utility appurtenance adjustments;
- (d) protections-in-place; and,
- (e) all surface restoration work including resurfacing pavements and sidewalks, reconstruction of curbs and gutters, restriping, and landscaping where necessary due to Utility Adjustment Work.

Incentive Payment shall have the meaning set forth in Section 13.5 of this Agreement.

Indemnified Parties shall mean the CTRMA, TxDOT, the State and their respective successors, assigns, officeholders, officers, directors, agents, representatives, consultants and employees (including the Project Engineer).

Indenture shall mean the indenture of trust or similar trust and security agreement entered into between the CTRMA and the Bond Trustee pursuant to which the Bonds are issued, and any authorized amendment or supplement thereto.

Instructions to Proposers shall mean the Instructions to Proposers issued by the CTRMA on November 4, 2010 as part of the RFDP with respect to the Project, including all attachments thereto and any subsequent addenda.

Intelligent Transportation System (ITS) shall have the meaning set forth in Technical Provision 18.

Interim Completion shall mean the occurrence of all the events and satisfaction of all the conditions set forth in Section 20.2.2 of this Agreement.

Interim Completion Deadline shall have the meaning set forth in Section 5.2.2 of this Agreement.

Interim Development Work shall, at a minimum, mean the following:

- Providing west bound 290 East mainlane toll traffic access to the 290 East/US 183 west bound direct connectors;
- Providing access to the east bound 290 East mainlane toll traffic from the 290 East/US 183 east bound direct connectors;

- Providing east bound and west bound 290 East mainlane toll traffic overpasses, with a minimum of two lanes in each direction, at Tuscany Way and Springdale Road;
- Tolling of a minimum of two lanes for both east bound and west bound 290 East mainlane traffic from just east of the 290 East/US 183 interchange to east of Springdale Road; and
- Providing east bound and west bound 290 East frontage roads, with a minimum of two lanes in each direction, from the western Project limits to east of Springdale Road.

Intermediate (65%) Design Submittal shall have the meaning set forth in Technical Provision 2.

Investigative Work Plan (IWP) shall mean a plan prepared by D/B CDA Developer addressing the methods, techniques, and analytical testing requirements to adequately characterize the extent of impacts by Hazardous Materials to an area of concern as more particularly described in Technical Provision 9.

Key Personnel shall mean those individuals and D/B CDA Developer personnel (Category A and B) identified in Technical Provision 1.

Lane Rental Bank shall mean the cost figure established by the D/B CDA Developer in Form L-1 of the Proposal that establishes the total amount of lane rental fees available to the D/B CDA Developer during execution of the Development Work. This bank will be reduced in accordance with lane rental fees established in Section 22 of the Scope of Work.

Law or **Laws** shall mean any statute, law, regulation, ordinance, rule, judgment, order, decree, permit, concession, grant, franchise, license, agreement, directive, guideline, policy requirement or other governmental restriction or any similar form of decision of or determination by, or any interpretation or administration of any of the foregoing by, any Governmental Entity, which is applicable to the Project, the Final ROW, and/or the Development Work, whether now or hereafter in effect, including Environmental Laws.

Lien shall mean any pledge, lien, security interest, mortgage, deed of trust or other charge or encumbrance of any kind, or any other type of preferential arrangement (including any agreement to give any of the foregoing, any conditional sale or other title retention agreement, any lease in the nature of a security instrument and the filing of or agreement to file any financing statement under the Uniform Commercial Code of any jurisdiction).

Liquidated Damages shall have the meaning set forth in Section 18.1 of this Agreement.

Losses shall mean any loss, damage (including personal injury, property damage and natural resource damages), injury, liability, cost, expense (including attorneys' fees and expenses (including those incurred in connection with the enforcement of any provision of this Agreement)), fee, charge, demand, investigation, proceeding, action, suit, claim, judgment, penalty, fine or Third Party Claims.

Major Participant shall mean each entity with: (a) primary responsibility for design; (b) primary responsibility for the Design Quality Control (DQC); (c) primary responsibility for the construction; (d) primary responsibility for the Construction Quality Control (CQC) and/or Materials Quality Assurance Testing; (e) a direct equity interest in the Proposer (whether as a member, partner, shareholder or otherwise); or (f) a proposed subcontract with a value greater than or equal to \$5 million. Notwithstanding the foregoing, if the Proposer is a publicly traded company, shareholders owning less than 10% of the outstanding stock shall not be considered Major Participants.

Major Subcontracts shall mean a Subcontract in excess of \$3,000,000.

Mandatory Sustainable Initiative shall mean an activity that the D/B CDA Developer is required to complete in accordance with Technical Provision 26 with the goal of achieving a more environmentally sustainable Project.

Master Utility Adjustment Agreement shall mean an agreement with a particular Utility Owner in the format provided in Exhibit D-8c that specifies the delegation of Utility Adjustment cost and work responsibility between the D/B CDA Developer and the Utility Owner. See Also "Utility Adjustment Agreement."

Materials Quality Acceptance Firm (MQAF) shall have the meaning provided in Technical Provision 2.

Materials Quality Acceptance Manager (MQAM) shall have the meaning provided in Technical Provision 2.

Materials Quality Acceptance Testing (MQAT) shall have the meaning provided in Technical Provision 2.

Maximum Payment Curve shall mean the curve set forth in Exhibit G which constitutes a cap on the aggregate amount of payments which may be made to D/B CDA Developer hereunder at any specified time.

Mitigation Plan shall mean the plan prepared by D/B CDA Developer detailing the mitigation requirements contained in the Governmental Approvals and CTRMA-Provided Approvals.

Mitigation Site shall mean any real property (which term is inclusive of all estates and interests in real property), improvements and fixtures outside of the Schematic ROW that will be

acquired to mitigate the Project's environmental effects pursuant to the requirements set forth in the Scope of Work, and pursuant to Sections 3 and 17 of this Agreement. The term specifically includes any air space, surface rights and subsurface rights within the Mitigation Site that the CTRMA directs D/B CDA Developer to acquire for the Project.

Monthly Updates shall have the meaning set forth in Technical Provision 5.

Natural Resource Biologist shall mean the team member designated by the Environmental Compliance Manager to provide expertise on monitoring impacts on wildlife and the natural environment due to construction activities related to the Development Work as more particularly described in Technical Provision 9.

New Environmental Approval shall mean (a) any Environmental Approval required for the Project, other than the CTRMA-Provided Approvals, and (b) any revision, modification, or amendment to any CTRMA-Provided Approval.

New Utility Property Interest shall mean any permanent right, title or interest in real property outside of the Final ROW (e.g., a fee or an easement) which is acquired for a Utility being reinstalled in a new location as a part of the Utility Adjustment Work. The term specifically excludes any statutory right of occupancy or permit granted by a Governmental Entity for occupancy of its real property by a Utility.

Noise Mitigation Plan shall mean the plan developed by the D/B CDA Developer in accordance with Technical Provision 26 to address how to mitigate construction noise.

Nonconforming Work shall mean Development Work that D/B CDA Developer, the MQAM, the Resident Engineer, any Governmental Entity or the CTRMA determines does not conform to the requirements of the Contract Documents, the Governmental Approvals, applicable Law or the Design Documents.

Notice of Intent (NOI) shall mean the notice of intent prepared and submitted by D/B CDA Developer to the TCEQ under the Construction General Permit for storm water discharges from construction sites.

Notice of Termination shall mean a notice issued by CTRMA to terminate all or a portion of this Agreement and the performance of the Development Work by D/B CDA Developer pursuant to Section 16.3 of this Agreement.

Notice to Proceed (NTP) shall mean a written notice issued by CTRMA to D/B CDA Developer authorizing D/B CDA Developer to proceed with Development Work.

Optional Sustainable Initiative shall mean an activity that the D/B CDA Developer chooses to perform to achieve Green Credits. These activities are described in Technical Provision 26.

Owner Managed Utility Adjustment Agreement shall mean a Utility Adjustment Agreement providing for construction by the Utility Owner of the Utility Adjustment(s) addressed therein.

Owner Verification Testing (OVT) shall have the meaning provided in Technical Provision 2.

Party shall mean D/B CDA Developer or the CTRMA, as the context may require, and “**Parties**” shall mean D/B CDA Developer and the CTRMA, collectively.

Payment Bond shall have the meaning set forth in Section 9.1.3 of this Agreement, the form of which is attached to this Agreement as Exhibit J.

Payment Curve shall mean the Payment Curve set forth in Exhibit G, which constitutes the aggregate amount of payments which may be made to D/B CDA Developer hereunder at any specified time.

PCO Notice shall have the meaning set forth in Section 14.3.2.3 of this Agreement.

Performance Bond shall have the meaning set forth in Section 9.1.2 of this Agreement, the form of which is attached to this Agreement as Exhibit I.

Person shall mean any individual, corporation, joint venture, limited liability company, company, voluntary association, partnership, trust, unincorporated organization or Governmental Entity.

Plans shall mean approved contract drawings, working drawings, supplemental drawings, detail sheets or exact reproductions thereof, which show the location, character, dimensions and details of the Development Work to be done.

Preliminary (30%) Design Submittal shall have the meaning set forth in Technical Provision 2.

Private Pipeline means a private line, facility or system used for the carriage, transmission and/or distribution of gas, oil, petroleum products, hydrocarbons, and similar substances, which is used for the benefit of one or more individual recipients rather than directly or indirectly serving the public.

Programmatic Agreement (PA) shall mean a cooperative agreement between the FHWA, TxDOT, Advisory Council on Historical Preservation (ACHP) and Texas Historical Commission (THC) which addresses the responsibilities for coordination and communication between agencies for the conservation of cultural resources in regards to State and federal transportation projects.

Project shall have the meaning set forth in the first Recital to this Agreement.

Project Design shall mean the design developed by the D/B CDA Developer for the facility to be constructed by D/B CDA Developer in accordance with such design, meeting at least the minimum requirements of the Contract Documents.

Project Development Agreement (PDA) shall mean the Project Development Agreement between TxDOT and the CTRMA with respect to the Project, a copy of which is included as Exhibit D-14a.

Project Finance Documents shall mean those documents, including trust agreements, to be entered into by the CTRMA to secure or evidence the Bonds and the other obligations to be issued or entered into for the purpose of financing the Project.

Project Engineer shall mean the Person designated in writing by CTRMA as its Project Engineer.

Project Management Plan shall have the meaning set forth in the Scope of Work and Technical Provision 1.

Project Manager shall mean the individual designated by D/B CDA Developer and approved in writing by the CTRMA who will be in the position to take full responsibility for the prosecution of the Development Work and who will act as a single point of contact on all matters on behalf of D/B CDA Developer, pursuant to Section 3.6.3 of this Agreement.

Project Schedule shall have the meaning set forth in Technical Provision 5.

Proposal shall mean the Proposal submitted by D/B CDA Developer to the CTRMA on or before February 3, 2011 in response to the RFDP issued by the CTRMA on November 4, 2010, as amended.

Proposal Bond shall mean the proposal bond provided by D/B CDA Developer on the Proposal Date as required by the RFDP Documents.

Proposal Date or Proposal Due Date shall mean February 3, 2011.

Proposer shall mean each entity that was shortlisted based on the CTRMA's evaluation of submissions in response to the Request for Competing Qualifications for the Project.

Protection in Place or **protection in place** shall mean any action taken to avoid damaging a Utility which does not involve removing or relocating that Utility, including staking the location of a Utility, exposing the Utility, avoidance of a Utility's location by construction equipment, installing steel plating or concrete slabs, encasement in concrete, temporarily de-energizing power lines, and installing physical barriers. The term includes both temporary measures and permanent installations meeting the foregoing definition.

Public Affairs Coordinator shall have the meaning set forth in Technical Provision 4.

Public Information Act shall mean the Texas Government Code Chapter 552.001 *et seq.*

Public Information Plan shall have the meaning set forth in Technical Provision 4.

Punch List shall mean the list of Development Work which remains to be completed after Substantial Completion has been achieved and before Final Acceptance, and shall be limited to items of the Development Work that are necessary to correct minor imperfections and deviations from the requirements of the Contract Documents, Governmental Approvals, applicable Law and Design Documents, but which have no material or adverse effect on the use, safety or operability of the Turnpike.

Quality Assurance Program (QAP) shall have the meaning set forth in Technical Provision 2.

Quitclaim Deed shall mean a quitclaim deed to be executed by a Utility Owner relinquishing its rights to maintain a Utility in a particular location, as more particularly described in Technical Provision 8.

Record Drawings. See “As Built Documents.”

Record of Decision (ROD) shall mean the decision document completed by the FHWA for this Project.

Recovery Schedule shall mean the schedule D/B CDA Developer is required to provide under Section 5.5 of this Agreement.

Reference Documents shall mean those documents listed in Exhibit D of this Agreement. The Reference Documents are not considered Contract Documents, except to the extent portions may be incorporated into the Contract Documents by a specific reference, and were provided to D/B CDA Developer for informational purposes only and without representation or warranty by the CTRMA.

Referenced Standard shall mean any standard applicable to the Project established by reference contained in the Contract Documents to a described publication.

Registered Professional Engineer shall mean a person who has been duly licensed and registered by the Texas State Board of Registration for Professional Engineers to engage in the practice of engineering in the State.

Reimbursable Hazardous Materials Costs shall mean D/B CDA Developer’s actual costs of performance of Hazardous Materials Management, determined in accordance with Section 14.8 of this Agreement.

Release of Hazardous Materials shall mean any spill, leak, emission, release, discharge, injection, escape, leaching, dumping or disposal of Hazardous Materials into the soil, air, water,

groundwater or environment, including any exacerbation of an existing release or condition of Hazardous Materials contamination.

Released-for-Construction shall have the meaning provided in Technical Provision 2.

Replacement Utility Property Interest shall mean any right, title or interest in real property (e.g., a fee or an easement) required by a Utility Owner to replace an Existing Utility Property Interest as a result of Adjustment due to the Project.

Request for Change Order Resolution Meeting shall have the meaning set forth in Section 14.3.2.2 of this Agreement.

Request for Change Proposal shall mean a written notice issued by the CTRMA to D/B CDA Developer under Section 14.2.1 of this Agreement, advising D/B CDA Developer that the CTRMA may issue a CTRMA-Directed Change or wishes to evaluate whether to initiate such a change pursuant to Section 14.2.1 of this Agreement.

Request for Detailed Proposals or **RFDP** shall mean the Request for Detailed Proposals issued by the CTRMA on November 4, 2010 with respect to the Project, including all attachments thereto and any subsequent addenda.

Request for Early Opening shall mean a request by D/B CDA Developer to open up a portion or the entire Project to traffic prior to the Acceptance Deadline.

Request for Information (RFI) shall mean a written request for information prepared by D/B CDA Developer after Final Design to initiate the process for potential design changes or clarifications during the construction period.

Reserved Rights shall mean all of the following:

(a) CTRMA's right, subject to TxDOT concurrence, to use, possess, develop and enjoy any real and personal property over, on, under or adjacent to the Final ROW for other transportation or related facilities, including tunnels, flyovers, frontage roads, local roads, interchanges and fixed guide-ways; and

(b) all right to use, and use of:

(i) all electrical, fiber optic and wireless conduit, cable, capacity, towers, antennas and associated equipment or other telecommunications equipment, hardware and capacity existing over, on, under or adjacent to any Final ROW installed by anyone, whether before or after the Effective Date, and all software which executes such equipment and hardware and related documentation, to the extent not necessary and required for traffic management for the Project or for other project purposes;

- (ii) any area or space over, on, under or adjacent to the Final ROW for development and operation of any office, commercial, industrial, residential, retail or mixed use real estate project, including revenue-generating service or rest areas;
- (iii) any equipment, facilities or capabilities for ITS studies or applications installed by or on behalf of the CTRMA and the right to install any such equipment, facilities or capabilities; and
- (iv) any area or space over, on, under or adjacent to the Final ROW for any other commercial or non-commercial development or use.

Resident Engineer shall have the meaning provided in Technical Provision 2.

Retainage shall have the meaning set forth in Section 13.3.10 of this Agreement.

Revised Project Schedule shall mean CTRMA approved modifications to the Baseline Schedule.

RFDP Documents shall mean all of the information and materials supplied to D/B CDA Developer in connection with the issuance of the RFQ, the RFDP, including Instructions to Proposers, the Contract Documents and the Reference Documents and any addenda issued in connection therewith.

ROW Project Manager shall mean D/B CDA Developer's representative responsible for preparation and quality review of all documents required for the acquisition of all D/B CDA Developer Designated ROW and for coordination with CTRMA's and TxDOT's ROW agents in connection with TxDOT's acquisition of the Schematic ROW.

Rules shall have the meaning set forth in Recital C of this Agreement.

Safety and Health Plan or **Safety Plan** shall have the meaning set forth in Technical Provision 25.

Schedule of Values shall mean a schedule of items by which D/B CDA Developer will be paid for the Development Work.

Schematic Plan shall mean the roadway schematic plan for the design of the Project as set forth as Exhibit D-2a and Exhibit D-2b to this Agreement.

Schematic ROW shall mean any real property (which term is inclusive of all estates and interests in real property), improvements and fixtures within the lines established by CTRMA in Exhibit D-2a and Exhibit D-2b to delineate the outside limits of the Schematic Plan, as such limits may be adjusted from time to time in accordance with the Contract Documents. The term

specifically includes all air space, surface rights, and subsurface rights within the limits of the Schematic ROW.

Schematic ROW Maps and Documents shall mean the documents shown in Exhibit D-7b.

Scope of Work shall mean the document describing the scope of the Development Work, attached hereto as Exhibit B.

Select Fill shall have the meaning provided in Exhibit C – Technical Provision 20.

Service Line shall mean a Utility line, the function of which is to directly connect the improvements on an individual property to another Utility line located off such property, which other Utility line connects more than one such individual line to a larger system.

Site shall mean Schematic ROW, Additional Properties, New Utility Property Interests, and any temporary rights or interests that D/B CDA Developer may acquire at its own cost and expense in connection with the Project.

Site Recycling Plan shall mean the plan developed by the D/B CDA Developer in accordance with Technical Provision 26 that addresses recycling of materials on the Project.

State shall mean the State of Texas.

Subcontract shall mean any agreement by D/B CDA Developer with any other Person, Subcontractor or Supplier to perform any part of the Development Work or provide any materials, equipment or supplies for any part of the Development Work, or any such agreement at a lower tier, between a Subcontractor and its lower tier Subcontractor or a Supplier and its lower tier Supplier, at all tiers.

Subcontractor shall mean any Person with whom D/B CDA Developer has entered into any Subcontract to perform any part of the Development Work or provide any materials, equipment or supplies for the Project on behalf of D/B CDA Developer and any other Person with whom any Subcontractor has further subcontracted any part of the Development Work, at all tiers.

Substantial Completion shall mean the occurrence of all of the events and satisfaction of all of the conditions set forth in Section 20.1.2 of this Agreement.

Supplemental Utility Assembly shall mean a compilation of utility documents in a format, and containing the documents, as described in Section 8.11.7 of the Technical Provisions.

Supplier shall mean any Person not performing work at or on the Site which supplies machinery, equipment, materials, hardware, software, systems or any other appurtenance to the

Project to D/B CDA Developer or to any Subcontractor in connection with the performance of the Development Work. Persons who merely transport, pick up, deliver or carry materials, personnel, parts or equipment or any other items or persons to or from the Site shall not be deemed to be performing Development Work at the Site.

Surety shall mean each properly licensed surety company, insurance company or other Person approved by the CTRMA, which has issued any Payment Bond or Performance Bond.

Sustainability Level 2 Project shall have the meaning set forth in Technical Provision 26.

Sustainability Level 3 Project shall have the meaning set forth in Technical Provision 26.

Systems Integrator shall mean the CTRMA's contractor that shall design, supply, install, test and commission the toll collection system and ITS for the Project, including scanners, readers, loops, enforcement mechanisms, automated toll collection systems, and ITS Equipment.

Tangible Net Worth shall mean, for a corporation, the difference between (the sum of paid-in capital stock plus preferred stock plus retained earnings) less (the sum of treasury stock plus minority interest plus intangible assets e.g., goodwill, patents, licenses), all determined in accordance with Generally Accepted Accounting Principles (GAAP) and as interpreted by the Securities and Exchange Commission in connection with financial statements filed pursuant to the Securities Exchange Act of 1934. With respect to a partnership or limited liability company, the term shall mean the sum of the partners' or members' capital accounts determined in accordance with GAAP.

Technical Provisions means Exhibit C, as revised or amended pursuant to the Agreement.

Third Party Claims shall mean any and all claims, disputes, disagreements, causes of action, demands, suits, actions, judgments, investigations or proceedings brought by a Person that is not a Party with respect to damages, injuries, liabilities, obligations, losses, costs, penalties, fines or expenses (including attorneys' fees and expenses) sustained or incurred by such Person.

Threatened and Endangered Species shall mean any species listed by the USFWS as threatened or endangered pursuant to the Endangered Species Act, as amended, 16 U.S.C. §§ 1531, *et seq.* or any species listed as threatened or endangered pursuant to the State endangered species act.

Time and Materials Change Order shall mean a Change Order issued in accordance with Section 14.7 of this Agreement.

Toll Gantry means the structures and equipment associated with collection of tolls at a specific location.

Turnpike Intelligent Management/Operation Systems shall have the meaning set forth in Technical Provision 18.

TxDOT Austin District Standards shall mean those standards for design and construction contained in Exhibit D-12a.

TxDOT Prices shall mean the average low bid prices for the Austin District of TxDOT, as published by TxDOT with respect to certain specified materials and products.

TxDOT Specifications shall mean the Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, adopted by the Texas Department of Transportation on June 1, 2004, as modified, supplemented and/or superseded and replaced with requirements referenced on Exhibit F.

TxDOT Standards shall mean the Texas Department of Transportation (TxDOT) Policies, Procedures, Guidelines, Manuals, Standard Drawings, General Notes and other related documents published on TxDOT's internet system.

TxDOT Utility Manual shall mean the Utility Manual issued by the Right of Way Division of TxDOT in 2005, as the same may be amended, supplemented or replaced from time to time.

Ultimate Design or **Ultimate Project Design** shall mean the design marked "Ultimate" on the roadway Schematic Plan set forth in Exhibit D-4a.

Unidentified Utility shall mean any Utility impacted by the Project (other than a Service Line) which is not an Identified Utility.

Uniform Act shall mean the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, P.L. 91-646, as amended.

US 183 Interchange Project shall mean the project currently under construction by another contractor at the US 183 and US 290 interchange.

Utility(ies) or **utility(ies)** shall mean (1) a public, private, cooperative, municipal and/or government line, facility or system used for the carriage, transmission and/or distribution of cable television, electric power, telephone, telegraph, water, gas, oil, petroleum products, steam, chemicals, hydrocarbons, telecommunications, sewage, storm water not connected with the drainage of the Project, and similar substances that directly or indirectly serve the public, and/or (2) a Private Pipeline. The term "Utility" or "utility" specifically excludes (a) storm water facilities providing drainage for the Final ROW, and (b) street lights and traffic signals. The necessary appurtenances to each utility facility shall be considered part of such utility. Without

limitation, any Service Line connecting directly to a utility shall be considered an appurtenance to that utility, regardless of the ownership of such Service Line.

Utility Accommodation Rules (UAR) shall mean the provisions contained in 43 TAC 21.31 through 21.56, as the same may be amended, supplemented or replaced from time to time.

Utility Adjustment Agreement shall mean an agreement between D/B CDA Developer, TxDOT or CTRMA and a Utility Owner which sets forth terms and conditions for one or more Utility Adjustments, as the same may be amended or supplemented from time to time and as more particularly described in Technical Provision 8. A document is a “**Utility Adjustment Agreement**” if it meets the foregoing definition, without regard to the title of the document. A reference in the Contract Documents to any Utility Adjustment Agreement shall include, in addition to the Utility Adjustment Agreement, any Utility Adjustment Agreement Amendment executed by D/B CDA Developer, TxDOT or CTRMA and the Utility Owner with respect thereto, as well as any informal supplement or modification entered into between D/B CDA Developer, TxDOT or CTRMA and the Utility Owner as permitted by Technical Provision 8. The term “**Master Utility Adjustment Agreement**” shall have the same meaning.

Utility Adjustment Agreement Amendment shall mean an agreement between D/B CDA Developer or CTRMA and the Utility Owner which amends a Utility Adjustment Agreement, as more particularly described in Technical Provision 8.

Utility Adjustment Concept Plan shall mean a design document which shows the existing location and D/B CDA Developer’s Adjustment recommendation for each Utility impacted by the Project, as more particularly described in Technical Provision 8.

Utility Adjustment Field Modification shall mean a modification to an Adjustment or group of Adjustments as described in Section 8.11.7 of the Technical Provisions.

Utility Adjustment Plan(s) shall mean the construction plans for a particular Adjustment or group of Adjustments as described in Section 8.11.7 of the Technical Provisions.

Utility Adjustment Work shall mean (a) the work associated with Adjustment of Utilities as necessary to accommodate the Project Design or permit construction of the improvements of the Project (except for Early Adjustments), and (b) any Betterments added to the Development Work pursuant to Section 14.12.2 of this Agreement. The term includes all coordination, design, design review, permitting, construction, inspection, maintenance of records, relinquishment of Existing Utility Property Interests, preparation of Joint Use Agreements, and acquisition of New Utility Property Interests as necessary for the work described in the preceding sentence, whether provided by D/B CDA Developer or by the Utility Owners, and all other work described as “**Utility Adjustment Work**” or “**Incidental Utility Adjustment Work**” in Technical Provision 8.

Utility Appurtenance Adjustment shall mean the adjustment of Utility appurtenances (e.g. manholes, valve boxes, and vaults) for line and grade upon completion of roadway work.

Utility Assembly shall mean a compilation of utility documents that fully describes the applicable Utility Adjustment(s) in a format, and containing the documents, as described in Section 8.11.7 of the Technical Provisions.

Utility Clearance Letter shall have the meaning set forth in Technical Provision 8.

Utility Enhancement shall mean a Betterment or a Utility Owner Project.

Utility Joint Use Acknowledgement shall mean an agreement between (i) the CTRMA and/or TxDOT and (ii) a Utility Owner which establishes the rights and obligations of the CTRMA and/or TxDOT and the Utility Owner with respect to occupancy of the Final ROW by a Utility owned by such Utility Owner.

Utility MOU shall mean any non-binding agreement or memorandum of understanding between (i) the CTRMA or TxDOT and (ii) a Utility Owner establishing a general framework for the Adjustment of such Utility Owner's Utilities as necessary for the Project.

Utility Owner shall mean the owner or operator of any Utility (including both privately held and publicly held entities, cooperative utilities, and municipalities and other governmental agencies).

Utility Owner Delay shall have the meaning set forth in Section 14.12.5.3 of this Agreement.

Utility Owner Project shall mean the design and construction by or at the direction of a Utility Owner (or by D/B CDA Developer pursuant to Section 14.12.2.3 of this Agreement) of a new Utility other than as part of a Utility Adjustment. Betterments are not Utility Owner Projects. Utility Owner Projects shall be entirely the financial obligation of the Utility Owner.

Utility Strip Map shall mean the plan showing all of the Utilities within the Final ROW as more fully described in Technical Provision 8.

Utility Tracking Report shall mean a report regarding Utilities likely to be impacted by the Project which D/B CDA Developer shall maintain on a current basis, and which D/B CDA Developer shall periodically submit to the CTRMA, as more particularly described in Technical Provision 8.

Warranty shall have the meaning set forth in Section 12.1.1 of this Agreement.

Warranty Bond shall have the meaning set forth in Section 9.4 of this Agreement, the form of which is attached to this Agreement as Exhibit K.

Work – see “Development Work” above.

Work Breakdown Structure (WBS) shall mean the organization of Project activities and elements as more particularly described in Technical Provision 5.

[END OF DEFINITIONS]

EXHIBIT B

SCOPE OF WORK

**Manor Expressway
(290 East Toll Project)
From US 183 to SH 130**

**A PROJECT OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

**CTRMA Office Address
301 Congress Avenue, Suite 650
Austin, Texas 78701**

**Addendum #2
January 25, 2011**

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ATTACHMENTS:

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1.0 PROJECT ADMINISTRATION AND MANAGEMENT

1.1 GENERAL STATEMENT OF SCOPE

This document provides information relating to, and requirements applicable to, the Work to be performed under the Design/Build Comprehensive Development Agreement (the "Agreement") for the 290 East Toll Project. This document shall be interpreted as provided in the Agreement. Initially capitalized terms not otherwise defined in the body of this *Scope of Work* have the definitions set forth in *Exhibit A – Abbreviations and Definitions* of the Agreement. References to Exhibits shall mean Exhibits to the Agreement, unless otherwise specified. References to sections contained herein shall mean sections of this *Scope of Work*, unless otherwise specified. References to Attachments shall mean documents included in *Exhibit D – Reference Documents*, unless otherwise specified.

The D/B CDA Developer is responsible for the completion of all Work in accordance with the requirements of the Agreement. Any revisions to the Scope of Work included in the D/B CDA Developer's Proposal may be implemented only if approved in writing by the CTRMA and incorporated into the Agreement. Acceptance of the D/B CDA Developer's Proposal, and/or award of the Agreement, shall not serve as written approval for deviations from the scope. Unless expressly stated otherwise, no provision contained herein which states that the D/B CDA Developer may propose revisions shall be construed to allow the D/B CDA Developer to implement any revisions without the CTRMA's prior written approval. The CTRMA, at its sole discretion, shall have the right to accept or reject any D/B CDA Developer-proposed revisions to the Scope of Work. All work shall be done in accordance with the applicable requirements of *Exhibit C – Technical Provisions*, even if not referenced under specific section herein. The D/B CDA Developer shall not rely on the physical description contained in this *Section 1* to identify all Project components. The D/B CDA Developer shall determine the full scope of the Project through examination of the RFDP and the Project Site or as may be reasonably inferred from such examination.

1.1.1 Project Description

The Project (also referred to as the Manor Expressway) is a fully controlled access corridor approximately 6.2 miles long located in eastern Travis County along the existing US 290 facility. The project extends from the intersection at US 183 to just east of the SH130 intersection.

D/B CDA Developer shall coordinate the Work with the contractor currently constructing the US 183 Interchange Project. The current forecasted completion date for the US 183 Interchange Project is June 15, 2012. D/B CDA Developer shall complete the Interim Development Work by the Interim Completion Date established in the Agreement.

The existing US 290 roadway includes two lanes in each direction with a depressed grassed median. Average right-of-way width is approximately 210 feet. There are signalized at-grade intersections located at Tuscany Way, Springdale Road, Johnny Morris Road, Harris Branch Parkway, Decker Lane, SH 130 and Parmer Lane.

The proposed facility includes three tolled mainlanes and three non-tolled frontage lanes (i.e., non-limited access road running parallel to a higher speed road) in each direction. The controlled access mainlanes shall provide grade separated interchanges at Tuscan Way, Springdale Road, Arterial A, Johnny Morris Road, Harris Branch Parkway, SH 130 and Parmer Lane allowing unimpeded flow through these intersections. The three lane frontage roads will provide non-toll access replacing the current US 290 facility. A 30-foot grassed center median is included to separate main lane traffic. The Basic Configuration is provided in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2.

The Project shall accommodate and be compatible with future construction of the elements included in the Ultimate Design, as shown in Exhibit D – Item 4a – Ultimate Design Exhibits.

1.2 PROGRAM SCOPE COMPONENTS

The D/B CDA Developer shall manage, plan, execute, and control all aspects of the Work except for those retained by the CTRMA.

1.2.1 Project Management

The D/B CDA Developer shall be responsible for developing, implementing, and maintaining the Project Management organization and system in accordance with the requirements identified in Exhibit C – Technical Provision 1.

The D/B CDA Developer shall provide the personnel, equipment, materials, and tools necessary to plan, design, construct, and perform all Work, including final Utility Adjustments (as outlined in Section 8). If D/B CDA Developer-Designated ROW is required by D/B CDA Developer's design and approved by the CTRMA, the D/B CDA Developer will be responsible for these acquisition services (as outlined in Section 7). The D/B CDA Developer's organization must be structured and staffed with experienced, qualified personnel to manage the Work in a manner that ensures safety, quality and environmental sensitivity. The D/B CDA Developer shall provide for Key Personnel as identified in Exhibit C – Technical Provision 1. The D/B CDA Developer shall abide by the procedures set forth in the Contract Documents with respect to Key Personnel, including removal and replacement requirements.

The D/B CDA Developer shall schedule an initial Partnering workshop to be held within twenty (20) miles of the Project. The location should be appropriate for the anticipated attendees. The workshop shall provide coffee breaks and lunch for the participants. Additional workshops may be scheduled during the Project at the request of the CTRMA or the D/B CDA Developer.

The D/B CDA Developer shall schedule a weekly meeting to discuss Project issues and the upcoming weekly schedule. The D/B CDA Developer shall assure that a representative from each Subcontractor's working on the Project or scheduled to work during the upcoming week attends the weekly meeting. The D/B CDA Developer and the CTRMA shall jointly determine the agenda for the meeting. Representatives from other third parties shall be invited to also attend the weekly meeting as required.

The D/B CDA Developer shall coordinate and report to the CTRMA all activities with Governmental Entities and other Persons that are directly or indirectly impacted by the Work. Meetings with

Governmental Entities shall be scheduled in accordance with procedures outlined in Exhibit C – Technical Provision 1, so that the CTRMA, at its discretion, may be in attendance. In addition, the D/B CDA Developer shall document and report all Work in accordance with Exhibit C – Technical Provision 1 and the other Contract Documents.

1.2.2 Documentation and Reporting

The D/B CDA Developer shall be responsible for the documentation of all Work and Project-related actions. Requirements for documentation are outlined in Exhibit C – Technical Provision 1 and Section 26 of the Agreement. Specific reporting requirements are located in various other sections of the Contract Documents.

1.2.3 Quality Program

The D/B CDA Developer shall be responsible for assuring quality performance in accordance with the requirements identified in Exhibit C – Technical Provision 2.

1.2.4 Environmental Program

The D/B CDA Developer shall be responsible for completing the Work in accordance with the requirements identified in Section 9 and Exhibit C – Technical Provision 9, and all applicable Laws and Governmental Approvals.

The D/B CDA Developer is responsible for performing the environmental commitments reflected in the Environmental Documents.

1.2.5 Scheduling and Progress Payments

The D/B CDA Developer shall be responsible for the adequacy of its plan and schedule in accordance with the requirements identified in Section 5 and Exhibit C – Technical Provision 5, to manage its personnel, equipment, materials, Subcontractors, and other resources to meet the requirements of the Contract Documents.

1.2.6 Public Information Plan

The D/B CDA Developer shall be responsible for assisting the CTRMA with the implementation of a comprehensive Public Information Plan (“PIP”) to inform the public throughout the design and construction of the Project as described in Section 4 and Exhibit C – Technical Provision 4.

1.2.7 Permit Requirements

The D/B CDA Developer shall be responsible for obtaining all Governmental Approvals required for the Project or otherwise necessary to undertake and complete the Work (except those expressly identified and specified as the responsibility of others). The D/B CDA Developer is responsible for satisfying and complying with all requirements (including, but not limited to, testing, monitoring, documentation) of the individual Governmental Approvals (including those obtained by others).

Unless otherwise approved in writing by the CTRMA, all permits must be closed prior to Final Acceptance.

1.3 DESIGN AND CONSTRUCTION COMPONENTS

1.3.1 Basic Configuration

The Basic Configuration is provided in *Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2*. The D/B CDA Developer shall develop the Project Design based on this *Scope of Work*, and *Exhibit C – Technical Provisions*.

1.3.2 Documentation of Existing Conditions

The D/B CDA Developer shall provide documentation of the existing conditions along the entire Project corridor, including all adjacent facilities and Utilities that could be impacted by Work operations by video and/or photos, prior to starting construction operations.

1.3.3 Design Components

The CTRMA's criteria for design and construction of the Project are specified in *Exhibit C – Technical Provisions*. All Work shall be done in accordance with *Exhibit C – Technical Provisions* even if not referenced under specific section herein.

1.3.4 Codes, Standards, and Specifications

Unless otherwise specified herein, the design shall be governed by the standards, policies, and specifications in the Agreement, this *Scope of Work* and *Exhibit C – Technical Provisions* with all addenda, supplements, and revisions thereto. This requirement shall include all Reference Documents to the extent such Reference Documents are specifically incorporated into the Contract Documents.

The D/B CDA Developer shall use sound engineering judgment in applying design criteria in situations where a strict adherence to these criteria is not possible. If Project conditions warrant that an exception to the design criteria be considered, the D/B CDA Developer shall submit the Design Exception with justification in writing to the CTRMA for the CTRMA's review and comment. Use of Design Exceptions is discouraged and the D/B CDA Developer shall investigate and present alternatives prior to submitting a Design Exception to the CTRMA. The D/B CDA Developer shall resolve CTRMA review comments prior to formal submission of a Design Exception to TxDOT and FHWA. The CTRMA reserves the right to reject Design Exceptions.

Design Exceptions shall be submitted in accordance with the procedures outlined in the TxDOT *Roadway Design Manual* and other relevant design references. The D/B CDA Developer shall be responsible for obtaining all approvals for the Design Exception.

1.3.5 Use of Existing Design Plans

Existing Design Plans have been developed for the Project and are included in Exhibit D – Item 3 – Existing Design Plans. These plans have been provided for informational purposes. Conflicts between this Scope of Work, the Schematic Plan, and the Technical Provisions identified by the D/B CDA Developer shall be brought to the CTRMA’s attention.

The CTRMA does not guarantee accuracy of estimate/quantities contained within the Existing Design Plans. It shall be the D/B CDA Developer’s responsibility to review plans and perform material take-offs, including those relating to plan revisions, for the purpose of inclusion in the Development Price.

1.4 SCHEMATIC REVISIONS

D/B CDA Developer initiated modifications to the Schematic Plan, including those provided in any approved ATCs, remain the sole risk of the D/B CDA Developer in accordance with the Agreement including, but not limited to, any modifications required to the Environmental Documents and Governmental Approvals and are not subject to schedule and price relief.

2.0 QUALITY MANAGEMENT

No additional requirements.

3.0 WARRANTIES

No additional requirements.

4.0 PUBLIC INFORMATION PLAN

4.1 INTRODUCTION

The D/B CDA Developer shall be responsible for assisting with a comprehensive Public Information Plan to inform and engage the public throughout the design and construction of the Project as described in Exhibit C – Technical Provision 4. The CTRMA seeks an effective and proactive approach to Public Information on the Project.

4.2 PUBLIC INFORMATION PLAN

The CTRMA will develop the Public Information Plan. The D/B CDA Developer shall support the CTRMA in development of this plan by providing relevant information regarding the Project.

4.3 STAFFING REQUIREMENTS

The D/B CDA Developer will not be required to retain a Public Affairs Coordinator for the Project; but, will be required to designate a point of contact for coordination with the CTRMA.

4.4 PROJECT WEBSITE

No additional requirements.

4.5 SPECIAL EVENTS AND ACTIVITIES

Groundbreaking Ceremony: The D/B CDA Developer will not be required to participate in a groundbreaking ceremony as described in Exhibit C – Technical Provision 4.

Kids’ Day Events: The D/B CDA Developer shall be responsible for kids’ day events as described in Exhibit C – Technical Provision 4.

Grand Opening Ceremony: The D/B CDA Developer shall be responsible for participation in the grand opening ceremony as described in Exhibit C – Technical Provision 4.

4.6 COMMUNITY BUSINESS OUTREACH

The D/B CDA Developer will not be responsible for taking professional quality photos at public meetings or for taking quarterly aerial still photography of the corridor as described in detail in Exhibit C – Technical Provision 4.6. All other requirements of Exhibit C – Technical Provision 4.6 still apply.

4.7 BRIEFINGS, MEETINGS, AND COORDINATION

No additional requirements.

4.8 EMERGENCY RESPONSE ACTIVITIES

No additional requirements.

5.0 PROJECT SCHEDULE

The following is in addition to the requirements of Exhibit C – Technical Provision 5:

The D/B CDA Developer shall incorporate the System Integrator (SI) schedule into the Project Schedule. The D/B CDA Developer shall meet with the SI to ensure the SI's scheduled tasks, dependencies, and durations are accurately incorporated.

An estimated number of Days the SI will require for installation and operational testing of toll systems at each type of facility is listed below. This is provided for informational purposes only and may be revised based upon field conditions, material availability, and labor force. At this time, the D/B CDA Developer shall assume installation can occur at only one location at a time. The time required for operational testing is in addition to the time required for installation.

- Ramp toll installation: 21 Days
- Main lane toll installation: 21 Days
- SI's operational testing: 30 Days prior to Substantial Completion

The D/B CDA Developer shall complete the following items of the Work prior to the SI commencing installation:

- Final pavement through toll gantry area
- Complete toll gantry
- Complete Duct Bank and conduits in vicinity of toll gantry location
- Installation of permanent power to the ILP
- Support foundations required for SI equipment installations
- ILP and roadside cabinet slabs
- Lightning protections and grounding systems

The D/B CDA Developer shall complete the following items of the Work prior to the SI commencing operational testing:

- Complete paving for Project
- Complete Duct Bank for Project
- Complete lighting for Project

The D/B CDA Developer is responsible for providing enough time prior to both completion of the Interim Development Work and Substantial Completion of the Project to accommodate all SI installation and operational testing.

6.0 RAILROAD COORDINATION

Not used for this Project.

7.0 RIGHT-OF-WAY

The requirements in this Section 7 are in addition to the requirements in Exhibit C – Technical Provision 7.

7.1 PLANS FOR ACQUISITION OF FINAL ROW

7.1.1 Schematic ROW

Schematic ROW required for the construction of the Project is being acquired by the CTRMA. There are currently fifty-five (55) parcels of the Schematic ROW that remain to be acquired; all other parcels established by the Schematic ROW have been acquired.

The CTRMA will acquire these remaining parcels, and set permanent monuments. The CTRMA will be responsible for abatement and removal of any above-ground building structures on all Schematic ROW. The CTRMA will abate, but will not remove concrete slabs. Additionally, the CTRMA will evacuate and backfill all septic tanks within the Schematic ROW. The CTRMA will remove known underground storage tanks (USTs) within the Schematic ROW. Known underground storage tanks are located on parcels 7, 14, and 16 as identified in Exhibit D – Item 7a – Interim Milestone Schematic ROW Maps. The CTRMA will be responsible for all ROW activities and costs necessary for the acquisition of the Schematic ROW to complete Project construction. Pursuant to Section 6.6 of the Agreement, the D/B CDA Developer may be entitled to change order relief in the event Schematic ROW is not made available by the CTRMA within a certain time frame and results in an unrecoverable impact to the Project critical path schedule.

The D/B CDA Developer shall be responsible for removal of any below ground structures including concrete slabs and any non-ROW fencing, abandoned property fencing, or abandoned cross fencing on all Schematic ROW. All parcels in the Schematic ROW that contain wells shall have wells capped in accordance with Texas Department of Licensing and Regulation standards prior to any construction activities. The D/B CDA Developer shall be responsible for well capping along with any permitting required for Governmental Approvals, as specified in Exhibit C – Technical Provision 9. The D/B CDA Developer shall also be responsible for testing and abatement of any Hazardous Materials encountered within the Schematic ROW including any Hazardous Materials associated with the demolition of existing bridge structures. The cost and schedule impacts associated with any Hazardous Materials identified on the Schematic ROW shall be dealt with in accordance with Section 7.5 of the Agreement.

The Schematic ROW maps included in Exhibit D – Item 7a – Interim Milestone Schematic ROW Maps and Exhibit D – Item 7b – Schematic ROW Maps, depict existing and proposed right-of-way. The right-of-way (ROW) shown on Exhibit D – Item 7a – Interim Milestone Schematic Row Maps and Exhibit D – Item 7b – Schematic ROW Maps takes precedence over the ROW shown on other Reference Documents, and the D/B CDA Developer must restrict its operations accordingly. It shall be the responsibility of the D/B CDA Developer to adequately mark in the field the limits depicted on Exhibit D – Item 7a – Interim Milestone Schematic Row Maps and Exhibit D – Item 7b – Schematic ROW Maps in order to control and limit its operations to these areas and any acquired D/B CDA

Developer Designated ROW. The D/B CDA Developer will be required to replace any monuments previously installed by the CTRMA that are damaged or altered by the actions of the D/B CDA Developer. D/B CDA Developer Designated ROW documents shall be prepared in accordance with the practices, guidelines, procedures and methods indicated in Exhibit C – Technical Provision 7.

7.1.2 D/B CDA Developer Temporary Construction ROW

The D/B CDA Developer shall be responsible for the costs and schedule ramifications of acquisition, and the costs of all services and preparation of all documentation for the acquisition of any temporary right or interest in real property that the D/B CDA Developer deems necessary or advisable to acquire for work space, contractor lay-down areas, material storage areas, or other convenience of the D/B CDA Developer. The CTRMA shall not be obligated to exercise its power of eminent domain in connection with the D/B CDA Developer's acquisition of any such temporary right or interest, and the CTRMA shall have no obligations or responsibilities with respect to the acquisition, maintenance or disposition of such temporary rights or interests. Prior to Final Acceptance, it shall be the D/B CDA Developer's responsibility to restore temporary construction ROW and remove any residual construction materials.

7.1.3 D/B CDA Developer Designated ROW

The D/B CDA Developer shall be responsible for the costs of all services and preparation of certain documentation for all D/B CDA Developer Designated ROW acquisition, easement acquisition (temporary and/or permanent), permitting, and related relocation assistance for the Project. The Work related to D/B CDA Developer Designated ROW acquisition is described in Exhibit C – Technical Provision 7. The D/B CDA Developer acknowledges that it has incorporated the value of saleable improvements not retained by the property owner into the Development Price and that the D/B CDA Developer shall retain the rights to said saleable improvements.

The D/B CDA Developer must obtain the CTRMA's approval of all appraisals, requests to acquire D/B CDA Developer Designated ROW, acquisition documentation, and requests to commence condemnation proceedings. The D/B CDA Developer shall provide the CTRMA with all specific reports and supporting documentation for review and approval during the acquisition process. In connection with the acquisition of any D/B CDA Developer Designated ROW, the D/B CDA Developer shall comply with all of the requirements of Exhibit C – Technical Provision 7 applicable to such acquisition.

7.1.4 EXHIBIT D REFERENCE DOCUMENTS

The following ROW related documents constitute the Schematic ROW and are included in Exhibit D:

Item 7a – Interim Milestone Schematic ROW Maps

Item 7b – Schematic ROW Maps

8.0 UTILITIES

The requirements in this *Section 8* are in addition to the requirements in *Exhibit C – Technical Provision 8*.

8.1 RESPONSIBILITY OF THE D/B CDA DEVELOPER

The D/B CDA Developer's Work may include coordination, design, design review, permitting, construction, construction inspection, maintenance of records, easement acquisition coordination, and other Utility Adjustment Work as may be required to complete the Work as described within the Contract Documents. The term "Adjustment" includes each reinstallation in a new location, adjustment, reconstruction, adjustment-to-grade, restoration, provision of temporary services as required, maintenance, support and protection-in-place (whether permanent or temporary), removal, and/or abandonment (in accordance with procedures identified in *Exhibit C – Technical Provision 8*) of existing Utilities:

1. As necessary to accommodate or permit construction of the Project improvements (or as may be determined by the D/B CDA Developer to be required for its construction activity).
2. As necessary within the Project limits to accommodate the construction of the Ultimate Design for the Project.

The D/B CDA Developer will be responsible for Incidental Utility Adjustment Work, which has the meaning set forth in the Agreement.

The D/B CDA Developer shall ensure that the design and construction of all Utility Adjustments are compatible with the Project Design and that all such Utilities are compatible with and interface properly with the Project. For additional requirements, see *Exhibit C – Technical Provision 8*.

The D/B CDA Developer's Development Price shall include the coordination, identification of existing utilities, field investigations, design, design review, permitting, construction, construction inspection, maintenance of records, easement acquisitions, relinquishing property interests and management and preparation of utility agreements.

8.2 UTILITY ADJUSTMENT WORK PERFORMED BY THE CTRMA

The CTRMA has caused the Adjustment of Utilities for the US 183 Interchange Project. The Adjustment plans are provided in *Exhibit D – Item 8d – Executed Utility Design Files for the US 183 Interchange Project*.

Additionally, the CTRMA will perform Utility Adjustment Work associated with certain Utilities for the Project as described in this *Section 8.2*. The CTRMA will cause the Adjustment of the Utilities shown in *Exhibit D – Item 8b – Preliminary Utility Adjustment Concept Plan for Interim Milestone* in accordance with *Section 14.12.8* of the Agreement. D/B CDA Developer acknowledges that this plan is conceptual in nature, and that the actual Adjustment of these Utilities may vary from this plan.

Specifically, the CTRMA will cause the Adjustment of the following utilities as shown in Exhibit D – Item 8b – Preliminary Utility Adjustment Concept Plan for Interim Milestone:

Austin Energy Distribution

Austin Energy Transmission (at the Mogan Crossing only)

Texas Gas

GAATN

Grande

The CTRMA is currently coordinating the Adjustment of the Austin Energy Electric Transmission facility located at approximately STA 327+10 (as stationing applies to Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2). The CTRMA will cause this Utility to be Adjusted prior to issuance of the NTP. Exhibit D – Item 8c – Preliminary Adjustment Plans for Austin Energy Transmission Facility shows the preliminary design for this Adjustment. D/B CDA Developer acknowledges that this plan is preliminary in nature and that the Adjustment may differ from the information provided in this plan. D/B CDA Developer shall incorporate the Adjusted location of this Utility into the Final Design. Other than those Utilities specifically addressed above, all Utility Adjustments required as a result of the Project, shall be the responsibility of the D/B CDA Developer.

The CTRMA has also initiated the coordination efforts of other Utilities that require Adjustment for the Project. The CTRMA, through coordination with these Utility Owners, anticipates that certain Utilities will utilize a joint trench as shown in Exhibit D – Item 3 – Existing Design Plans. Adjustment of these Utilities will be the responsibility of the D/B CDA Developer as part of the Utility Adjustment Work. The CTRMA anticipates that the following Utilities would utilize the joint trench as described in this Section 8.2:

AT&T (local and long distance)

Qwest Communications

Level 3 Communications

Time Warner

8.3 D/B CDA DEVELOPER’S USE OF STANDARD UTILITY FORMS

The D/B CDA Developer shall use the CTRMA’s standard Utility forms for all Utility Adjustment Work. The standard Utility forms are included in Exhibit D-Item 8e – Standard Utility Forms. Revisions to the standard Utility forms must be approved by the CTRMA.

8.4 UNDERGROUND UTILITY REQUIREMENTS FOR THE PROJECT

All Adjustments crossing the Project shall be installed underground with the exception of electric transmission lines, which may be installed aerially across the Project.

All underground Adjustments must be designed and constructed in accordance with the requirements of *Exhibit C – Technical Provision 8*.

9.0 ENVIRONMENTAL COMPLIANCE

The requirements in this *Section 9* are in addition to the requirements in *Exhibit C – Technical Provision 9*.

9.1 GENERAL REQUIREMENTS

The D/B CDA Developer shall develop, implement, operate, and maintain an environmental protection program for the Work in accordance with the requirements identified in *Exhibit C – Technical Provision 9*. The program shall require the D/B CDA Developer to protect the environment and document the measures taken during the performance of the Work to minimize impacts on the environment from the design, construction and long-term operation of the Project.

The D/B CDA Developer shall be responsible for coordinating, preparing, and providing all environmental documentation, supporting documentation, information, and data (with support and oversight by the CTRMA) necessary to obtain all the Environmental Approvals, including approvals in addition to the CTRMA-Provided Approvals and any amendments to CTRMA-Provided Approvals, for the Development Work of the Project in accordance with *Exhibit C – Technical Provision 9*.

The D/B CDA Developer acknowledges that CTRMA-Provided Approvals as shown in *Section 9.1.1* are based on the Project's Ultimate Design as presented in the Environmental Document and *Exhibit D – Item 4a – Ultimate Design Exhibits*, and that such approvals may require amendment as the design progresses.

The D/B CDA Developer shall be responsible for coordinating, preparing, and providing all environmental documentation, supporting documentation, information and data necessary to obtain Environmental Approvals for CTRMA-Directed Changes, for which the costs and time extensions will be administered as specified in *Section 7.6.1.2* of the Agreement.

The D/B CDA Developer shall be responsible for ensuring compliance with the conditions and schedules of all environmental commitments outlined in the Environmental Documents. A list of the major commitments is included in Table 9.1 for convenience.

9.1.1 CTRMA-Provided Environmental Approvals and Permitting

A FONSI on the “Environmental Assessment for US 290 from US 183 to SH 130” was issued on March 9, 2009. A copy of the Environmental Assessment (EA) is contained in *Exhibit D – Item 1a – Environmental Assessment (EA)*. The FONSI is contained in *Exhibit D – Item 1b – FHWA Finding of No Significant Impact (FONSI)*.

In addition to the EA and FONSI, the CTRMA prepared a reevaluation of the EA to environmentally clear design changes to the Schematic Plan. The EA Reevaluation is part of the CTRMA-Provided Approvals and is included as *Exhibit D – Item 1c – Reevaluation to the EA*.

The CTRMA has cleared the project of all NEPA related permits for the Schematic Plan as discussed in this Section 9.1.1. Mitigation requirements and/or conditions for these approvals are set forth in Exhibit D – Item 1a – Environmental Assessment (EA) and compliance therewith is included in the scope of the Work. The D/B CDA Developer acknowledges that CTRMA-Provided Approvals are based on the Schematic Plan, and that such approvals may require amendment as the design progresses. D/B CDA Developer, with support and oversight by CTRMA, shall be responsible for all coordination with Governmental Entities necessary to obtain all such amendments to CTRMA-Provided Approvals and for ensuring compliance with the conditions and schedules set forth in the amendment of any CTRMA-Provided Approvals. Any additional mitigation required as a result of amendments or modifications to Environmental Approvals, except where such additional mitigation is required solely as a result of CTRMA-Directed Changes, shall also be borne by the D/B CDA Developer. The D/B CDA Developer shall comply with any mitigation requirements as a result of CTRMA-Directed Changes; however, D/B CDA Developer shall be entitled to compensation in accordance with Section 7.6.1.2 of the Agreement.

9.2 HAZARDOUS MATERIALS

Any Hazardous Materials found to be present on the Project that require mitigation in order to comply with all applicable State and Federal laws and regulations shall be the responsibility of the D/B CDA Developer. It shall be the D/B CDA Developer's responsibility to coordinate with the CTRMA, to obtain CTRMA approval of any proposed mitigation activities, and to provide adequate time for mitigation of those Hazardous Materials in the Project development schedule. The D/B CDA Developer will be responsible for testing and abatement that is required for proposed demolition of existing structures within the Schematic ROW and the D/B CDA Developer Designated ROW. The CTRMA shall mitigate any Hazardous Materials associated with the removal of the underground storage tanks (USTs) on parcels 7, 14, and 16 as identified in Exhibit D – Item 7a – Interim Milestone Schematic ROW Maps. Please refer to Section 7.5 of the Agreement and Exhibit C – Technical Provision 7 for additional information regarding CTRMA's responsibilities.

The EA documented that there are no known Hazardous Waste Sites in the proposed ROW of the Project but, after approval of the EA, a boring site near US 290 and Ferguson Road revealed the potential for volatile hydrocarbons in the soil.

9.3 STORM WATER POLLUTION PREVENTION PLAN (SW3P) AND ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS (EPIC)

In addition to the requirements in Exhibit C – Technical Provision 9, the D/B CDA Developer shall be aware that this region has a potential for erosion and take specific care in Storm Water Pollution Prevention and Management Activities.

The D/B CDA Developer will be required to construct the Project in accordance with the Project Design, including compliance with standard Environmental Permits, Issues and Commitments (EPIC) and Storm Water Pollution Prevention Plan (SW3P) requirements.

The EPIC provisions will include meeting the requirements of:

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- The Clean Water Act – Section 402 National Pollutant Discharge Elimination System;
 - The Clean Water Act – Section 401 and 404 Permit Compliance;
 - Hazardous Materials or Contamination Issues as listed in the Environmental Documents;
 - Federally Listed and Proposed Threatened and Endangered Species, Critical Habitat, State Listed Species and Candidate Species as listed in the Environmental Documents; and,
 - Other Environmental Issues such as Prime Farmland Preservation as listed in the Environmental Documents.

The SW3P provisions shall address items including but not limited to:

1. A Site Description, including:
 - a. A description of the nature of the construction activity;
 - b. A list of potential pollutants and sources, such as:
 - Soil erosion and sediment from grading activities;
 - Oil and grease from machinery;
 - Trash from workers lunches and other activities;
 - Drilling fluid discharged by drilling shaft subcontractors; and
 - Concrete from concrete trucks.
 - c. A description of the activities that will disturb soils for major portions of the site and the means to control erosion and sedimentation, such as:
 - Installing construction entrances and exits;
 - Conducting limited clearing and grubbing activities;
 - Conducting excavation and embankment activities and drainage structures after silt fences and other controls are in place;
 - Install permanent erosion control measures immediately after grading activities; and,
 - Reseeding disturbed areas after all construction activities are completed.
 - d. A delineation of the total number of acres on the project, and the total number of acres where construction activities will occur;
 - e. A description of the soil type and condition and percent of existing vegetative cover at the site;
 - f. A map showing the general location of the site;
 - g. Detailed maps or plans showing drainage patterns, slopes, proposed soil disturbance areas, locations of major structural erosion control facilities, locations of temporary or permanent stabilization practices, locations of authorized off-site activities, locations of surface waters and wetlands, locations of proposed storm water discharges, and proposed vehicle wash areas;

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- h. Location of authorized off-site support facilities such as asphalt and concrete plants;
 - i. Name of major receiving waters at or near the site; and
 - j. Notice of Intent and Site Notice(s) for the Project.
 2. A list of Best Management Practices, including: Proposed Temporary and Permanent Erosion and Sediment Controls and Stabilization Practices;
 3. Permanent Storm Water Controls;
 4. Other Controls, such as:
 - a. Off-site vehicle tracking and control of dust generation;
 - b. Description of construction and waste materials to be stored on-site;
 - c. Description of pollution sources and controls at off-site facilities where applicable; and,
 - d. Proposed use of velocity dissipation devices where needed.
 5. Compliance of this pollution plan with other general TPDES permits;
 6. A description of how all pollution control facilities will be maintained;
 7. A description of how all pollution control facilities will be inspected for compliance with all requirements;
 8. A description of control measures for non-storm water discharges; and,
 9. A description of all concrete truck wash-out requirements.

9.4 JURISDICTIONAL WATERS, INCLUDING WETLANDS

The CTRMA has determined that the construction of the improvements shown in the Schematic Plan can be constructed utilizing nationwide permits, and that a USACE individual permit is not required. The CTRMA has determined that no pre-construction notice to the USACE is required to construct the improvements shown in the Schematic Plan. Coordination with the USACE may be required if the Final Design results in additional impacts to jurisdictional waters. The D/B CDA Developer shall comply with the requirements in *Exhibit C – Technical Provision 9*. The EA describes the USACE jurisdictional waters identified for the Project. The CTRMA further investigated the West Walter E. Long Lake Tributary near the Schematic ROW. The results of this investigation are provided in *Exhibit D – Item 1d – Wetland Determination Findings*. No mitigation is required for construction of the improvements in the Schematic Plan. The D/B CDA Developer shall be responsible for all mitigation required due to additional impacts associated with the Final Design.

9.5 KARST FEATURES

The CTRMA does not anticipate the existence of karst features within the Final ROW.

9.6 ENVIRONMENTAL COMMITMENTS

The D/B CDA Developer is responsible for all commitments made in the Environmental Documents. A summary of major commitments is included in Table 9.1.

**TABLE 9.1
Anticipated Environmental Commitments**

RESOURCE / ISSUE	COMMITMENT	PHASE MET
Relocation / Displacement	Relocation Assistance Program (Uniform Relocation Act)	Pre-Construction/ Construction
Noise	Construction Noise Minimization by use of mufflers, appropriate construction timing, and equipment placement.	Construction
	A noise barrier was proposed in the EA and FONSI but was later eliminated during the Noise Barrier Workshop with the affected property owners. Further analysis will be require for any design changes to the Schematic Plan and the Existing Design Plans.	Construction / Post-Construction
	Avoiding construction noise at night to the extent practicable.	Construction
Stream Channel, Riparian Habitats	Avoidance and minimization through bridging major steam crossings. Minimization of construction impacts. Enforcement of a Storm Water Pollution Prevention Plan(SW3P). Following appropriate mitigation requirements as outlined in USACE Nationwide Permit 14 and 25. Design to minimize accumulation of debris under Walnut Creek, Big Walnut Creek tributary, and Ferguson Branch Bridges (City of Austin regulation)	Pre-Construction (design) / Construction
Wildlife / Vegetation	Work stoppage and notification of CTRMA if threatened or endangered species observed in the project area. Preserve trees outside safety clear zone.. Minimal construction of work roads.	Construction
Jurisdictional Waters / Special Aquatic Sites	Minimization of impacts through bridging. USAC Nationwide Permitting (with or without pre-construction notification, as appropriate) for unavoidable temporary and permanent impacts. Enforcement of a SW3P including implementation of appropriate Section 401 Water Quality certification best management practices (BMPs).	Pre-construction (design, permits) / Construction
Landscaping / Re-vegetation	Reseeding with grass seed mix containing native species. Landscaping with native trees & shrubs.	Post-Construction
Migratory Bird Nesting	Bridge and Culvert demolition must be scheduled outside of nesting season to avoid nesting impacts to birds or contractor shall remove all old bird nests between Sep 1 and Jan 31 from any structure where work will be done and prevent migratory birds from building nests between Feb 1 and Aug 31. Migratory bird nest surveys will be performed to adhere to the Migratory Bird Treaty Act. The surveys will need to be performed when any clearing of trees or demolition of bridges and culverts take place during nesting season.	Pre-Construction/ Construction
Floodplains	Coordination with appropriate local FEMA floodplain administrators for project encroachment in floodplains.	Pre-Construction/ Construction
Water Quality	Stormwater treatment (SW3P) planning, including Section 401 BMPs, implementation (including hazardous materials traps where feasible and beneficial), monitoring /maintenance, and removal. Field inspection each 14-days or after each 0.5-in rainfall event. Reseeding or re-stabilization of disturbed areas within 14 days. Minimize native vegetation disturbance, signing unused areas as 'Equipment-Free'.	Pre-Construction (SW3P approval) / Construction / Post-Construction
	Segment 1428C of the Colorado River Basin is considered an impaired and/or threatened stream segment (bacteria). US 290E is located w/in 5 miles upstream of this segment, therefore coordination with the TCEQ is required	Pre-Constr / Constr / Post Constr
Cultural Resources	Archeological subsurface surveys of stream terraces by qualified archeologists, including mitigation (as applicable) in accordance with State and Federal guidelines.	CTRMA Completed
	Mitigation (removal if found appropriate) through data collection or other means following Federal and State guidelines	Pre-construction/ Construction
Air Quality (dust control)	Watering, chemical stabilization, construction vehicle speed reduction, as feasible	Construction
Hazardous and or Contaminated Materials	Removal, capping, or other acceptable means of mitigation as outlined by Federal and State Regulations	Pre-construction/ Construction
Cemeteries/ Grave sites	Mitigation (Follow State Regulations)	Pre-construction/ Construction

10.0 LANDSCAPING AND AESTHETICS

10.1 GENERAL PURPOSE

The requirements in this *Section 10.1* are in addition to the requirements in *Exhibit C – Technical Provision 10.1*.

The D/B CDA Developer shall develop a landscape and irrigation plan that accommodates and is compatible with the future improvements included in the Ultimate Design.

The D/B CDA Developer shall install permanent and temporary vegetation in accordance with the following specifications:

- If temporary erosion control is needed, the rates, types of seed, and locations for the straw mulch and broadcast seed items will be determined by the D/B CDA Developer. Mow tall vegetation prior to placement of erosion control measures in order to provide optimal growing conditions. The seasons for “Broadcast Seeding (Temporary Erosion Control) (Cool Season)” and “Broadcast Seeding (Temporary Erosion Control) (Warm Season)” are specified below:

Cool Season: September 1 through November 30

Warm Season: May 1 through August 31

- Apply seeding at the rates listed in Table 10.1 for permanent seeding.

**TABLE 10-1
Permanent Urban Seed Mix (Warm Season)**

CLAY SOILS	
(LB. PLS/AC)	
GREEN SPRANGLETOP	0.3
BERMUDAGRASS	7.4
SIDEOATS GRAMA (HASKELL)	3.6
BUFFALOGRASS (TEXOKA)	1.6

Note: Crimping will be used as the tacking method for hay or straw mulch.

Areas less than ten (10) feet in width shall be treated with concrete riprap, concrete pavers, or a alternative surface as approved by the CTRMA.

The D/B CDA Developer shall retain a Registered Landscape Architect for this Project.

10.2 LOW VISIBILITY BRIDGES

The requirements in this Section 10.2 supersede the requirements in Exhibit C – Technical Provision 10 for low visibility bridges.

Low visibility bridges do not require aesthetic treatments for elements of the bridge that are not visible from the roadway. Low visibility bridges can be designed and constructed to use standard TxDOT bent caps, standard TxDOT round columns, standard TxDOT overhangs, standard TxDOT bridge rails, and sloped concrete riprap at abutments.

Based upon profiles and alignments contained in the Existing Design Plans, the following bridges would be considered low visibility bridges:

- All bridges spanning Walnut Creek Tributary #5
- All bridges spanning Walnut Creek
- The west bound frontage road bridge spanning the Missouri Kansas Texas railroad crossing
- The eastbound frontage road bridge that spans Gilleland Tributary 1
- The westbound frontage road bridge that spans Gilleland Tributary 1
- The east bound frontage road bridge that spans Gilleland Creek

Written approval from the CTRMA is required in order for a bridge, other than those listed in this Section 10.2, to be considered a low visibility bridge.

10.3 AESTHETIC ELEMENT STOCKPILES

The requirements in this Section 10.3 are in addition to the requirements in Exhibit C – Technical Provision 10.

Due to the non-standard elements prescribed in Exhibit D – Item 10a – Landscape and Aesthetic Requirements, the D/B CDA Developer shall provide additional quantities of these unique items to the CTRMA for their use in maintaining the project after completion. Specific elements include:

- Illumination Poles, Arms, and Luminaires. D/B CDA Developer shall provide additional sets for each size/type installed on the project based on the following formula.

The greater of 10% of installed quantities on the project or a minimum 2

- Lighted Street Signs. D/B CDA Developer shall provide 5 additional sets for each size/type installed. This item excludes the actual street sign panels.
- Signal Pole. The D/B CDA Developer shall provide an additional 20% of installed quantities for each size/type installed on the project. Should this calculation result in a value less than one, the contactor shall provide one additional pole of this specific size/type.

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- Signal Mast Arm. The D/B CDA Developer shall provide an additional 20% of installed quantities for each size/type installed on the project. Should this calculation result in a value less than one, the contactor shall provide one additional Mast Arm of this specific size/type.
 - Signal Housings. The D/B CDA Developer shall provide an additional 10% of installed quantities for each size/type installed on the project. Should this calculation result in a value less than two, the contactor shall provide two additional signal housings of this specific size/type.
 - Metal Beam Guard Fence. The D/B CDA Developer shall provide an additional 10% of installed quantities of the steel rail and an additional ten of each end section used on the project, such as; terminal anchor section, transition section, single guardrail terminals, etc.

11.0 ROADWAY DESIGN

The requirements in this Section 11 are in addition to the requirements presented in Exhibit C Technical Provision 11.

11.1 GENERAL DESIGN REQUIREMENTS

11.1.1 Design Requirements

A Schematic Plan for the construction of the Project is provided in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2. The design geometrics for the Project Design shall accommodate the Ultimate Design.

The Work shall include but is not limited to the following elements:

- Complete build-out of the Basic Configuration as illustrated in the Schematic Plan and certain elements to accommodate the Ultimate Design, all in accordance with the Contract Documents.

11.1.2 Design Components

The CTRMA's criteria for design and construction of the Project are specified in Exhibit C – Technical Provisions.

During preparation of the Project Design, the D/B CDA Developer shall minimize potential "throw-away" costs to the CTRMA and others associated with accommodating the Ultimate Design. Following execution of the Agreement, the D/B CDA Developer may, from time to time, propose revised design criteria in accordance with the Agreement. The CTRMA shall have the right to accept or reject such revised design criteria in its sole discretion. The D/B CDA Developer shall have flexibility to propose revised designs that produce time and cost benefits to the CTRMA and/or D/B CDA Developer, without impairing the Project financing or any essential functions and characteristics of the Project Design and/or the Ultimate Design, including safety, traffic operations, aesthetics, maintainability, environmental protection, drainage, as well as the expandability to the full build out of the Ultimate Design and the constraints of any Governmental Approvals.

The D/B CDA Developer shall have the flexibility to propose revisions to the horizontal alignment and vertical profile of the Project Design and/or Ultimate Design. The D/B CDA Developer shall revise the Ultimate schematics, cross-sections, and other applicable Design Documents as necessary to reflect any changes to horizontal and vertical alignments. A schematic reflecting these proposed changes to the Ultimate Design and indicating the portions of the pavement utilized for the Project Design shall be developed and submitted to the CTRMA for review and comment. The D/B CDA Developer shall address all comments to the satisfaction of the CTRMA. Furthermore, any changes to the Final ROW, due to horizontal and/or vertical modifications of the alignment, or to the Basic Configuration that may affect environmental approval, permitting, or Schematic ROW maps

indicated in the reference documents contained in Exhibit D – Item 7a – Interim Milestone Schematic ROW Maps and Exhibit D – Item 7b – Schematic ROW Maps and/or any related impacts shall be at the cost and sole responsibility of the D/B CDA Developer.

11.1.2.1 Project Design

The Project Design shall, at a minimum, meet the following requirements:

1. Mainlanes: provide mainlanes as shown in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2 in accordance with the Basic Configuration that are grade separated, controlled access toll lanes with appropriate ramps, and toll facilities that accommodate toll gantries at locations indicated in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2.
2. Ramps: The D/B CDA Developer shall provide a Project Design that accommodates the ramp connections shown in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2. Deviations from ramp connections will require approval from the CTRMA.
3. Frontage Roads: provide frontage roads as shown in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2 in accordance with the Basic Configuration. Frontage roads shall include turning bay lengths as outlined in Attachment 11 – Design Summary Report.
4. Grade Separated Intersections: Grade separated intersections shall be provided at Tuscan Way, Springdale Road, Missouri Kansas Texas Railroad crossing, Arterial “A”, Johnny Morris/Giles Road, Harris Branch Parkway, SH 130, and Parmer Lane. Vertical clearance requirements for Grade Separated Intersections are outlined in Attachment 11 – Design Summary Report.

The Tuscan Way, Springdale Road, Arterial “A”, Johnny Morris/Giles Road, Harris Branch, and Parmer Lane grade separated intersections shall include a 125-foot center bridge span that spans the cross streets to allow for future widening of the cross streets.

The Project Design shall not contain a sag vertical curve on the mainlanes between Tuscan Way and Springdale Road. The Missouri Kansas Texas Railroad crossing shall provide the vertical clearance required for a standard rail crossing as outlined in Attachment 11 – Design Summary Report.

Bridges that span Walnut Creek shall be designed and constructed to accommodate the vertical clearance requirements for the shared use path crossing shown on Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2.

5. Toll Collection System and ITS: The D/B CDA Developer is responsible for the design and construction of certain components of the Project that support the electronic toll collection and ITS systems as designed by the SI. The D/B CDA Developer’s Project Design shall accommodate the temporary and permanent electronic toll collection and ITS systems. The D/B CDA Developer shall coordinate all work with the SI.
6. Sidewalk: the D/B CDA Developer is responsible for the design and construction of a 6-foot sidewalk along the north side of the westbound frontage road as shown in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2. The D/B CDA Developer is responsible for the design and construction of a 8-foot, curb separated, raised sidewalk along the south side of the existing

eastbound bridge over SH 130 as shown in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2.

7. Shared Use Path: The D/B CDA Developer is responsible for the design and construction of shared use path approximately 10 feet wide along the south side of the Project as shown in Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2 and Exhibit D – Item 10a – Landscape and Aesthetic Requirements. The shared use path shall conform to the geometric requirements identified in Attachment 11 – Design Summary Report.
8. Accommodation of the Ultimate Design: The Project Design shall accommodate and be compatible with the future full build out of the Ultimate Design as outlined in Section 11.1.2.3.
9. Cross Street Limits of Construction: The Project Design shall include full depth pavement reconstruction on cross streets to the point at which the improvements associated with the Project Design are tied horizontally and vertically to the existing cross street pavement. In addition, the Project Design shall include mill and overlay over the full width of the cross street to the limit of construction for the following:
 - a. turning lanes along the cross street,
 - b. auxiliary lanes along the cross street,
 - c. medians of the cross street, and
 - d. any other construction activity that modifies the existing pavement surface along the cross street.
10. Driveways: The Project Design shall include design and construction of a driveway to the Manor New Tech High School with a dedicated right-in and a dedicated right-out with an acceleration lane as shown on Exhibit D – Item 2a – Schematic Plan – Sheets 1 and 2. All existing driveways must be re-established, and shall be incorporated into the Project Design.

11.1.2.2 Ultimate Design

The Ultimate Design shall include the full build out of the Project Design and the following additional elements:

1. Future direct connectors at SH 130: The Ultimate Design shall include full build out of the direct connectors at SH 130 as shown in Exhibit D – Item 4a – Ultimate Design Exhibits.
2. Future ramps at SH 130: The Ultimate Design shall include the ramp connections shown in Exhibit D – Item 4a – Ultimate Design Exhibits.
3. Future westbound mainlanes over Parmer Lane: The Ultimate Design shall include the westbound mainlanes over Parmer Lane as shown in Exhibit D – Item 4a – Ultimate Design Exhibits.
4. Future extensions of Frontage roads: The Ultimate Design shall include future extensions of the Frontage roads at the east end of the project as shown in Exhibit D – Item 4a – Ultimate Design Exhibits.

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5. Future improvements to grade separated intersection: The Ultimate Design shall include future improvements to grade separated intersections as shown in Exhibit D – Item 4a – Ultimate Design Exhibits.

11.1.2.3 Accommodation of Ultimate Design

The Work includes the design and construction of the Project Design. Additionally, the D/B CDA Developer shall ensure that the Work will accommodate, and be compatible with, the full build out of the Ultimate Design.

The Design Documents furnished by the D/B CDA Developer shall provide for a smooth transition from the Project Design to the Ultimate Design. The D/B CDA Developer shall endeavor to minimize potential "throw-away" costs to the CTRMA and others associated with improving the Project Design configuration to meet the requirements of the future Ultimate Design configuration. The Work shall provide for minimal disruption to traffic and toll collection operations during the Ultimate Design construction phase. Additionally, the Work shall be designed and built to minimize the cost associated with the future Ultimate Design construction to the extent that the D/B CDA Developer cost to construct the Project Design configuration is not unreasonably increased. The Work, at a minimum, shall accommodate the Ultimate Design configuration as described below:

1. Roadway Geometrics – The Project Design shall be designed and constructed so as not to preclude the Ultimate Design; final horizontal and vertical alignments of the Project Design shall be constructed coincident to the Ultimate Design. The Project Design shall conform to the geometric requirements identified in Attachment 11 – Design Summary Report. In addition, the Project Design shall meet the turning movement requirements identified in Exhibit D – Item 19a – Non-Tolled Facility Permitted Loads Requirements. Any change to the Basic Configuration shall require the CTRMA's prior written approval.
2. Earthwork – The D/B CDA Developer shall perform earthwork as required to construct the Project Design and Ultimate Design as provided Exhibit D – Item 4a – Ultimate Design Exhibits.
3. Drainage – Open drainage systems (i.e. ditches), shall be designed to accommodate the Ultimate Design and constructed to accommodate the Project Design. Closed drainage systems (i.e. pipes and inlets) required for either the Project Design or Ultimate Design and located within the Project Design limits of construction shall be sized, designed and constructed to satisfy the controlling design requirements of the Ultimate Design. In addition, closed drainage systems shall be sized, designed, and constructed to handle the additional runoff generated from a fully paved concrete mainlane median with normal crown. The physical location of inlet and outlet structures shall accommodate the Ultimate Design. Cross drainage structures (i.e. culverts) shall be designed, and sized to accommodate the Ultimate Design and constructed to accommodate the Project Design. The D/B CDA Developer may construct culverts and large diameter pipes (over 48") to the total length required to meet Ultimate Design configuration. The Project Design shall conform to the hydraulic requirements identified in Attachment 11 – Design Summary Report

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4. Paving – Paving limits shall satisfy the requirements of the Project Design without conflicting with the Ultimate Design. In determining limits of Project Design paving, the D/B CDA Developer shall avoid interferences with the Ultimate Design geometry and minimize future impact on traffic operations. Where possible, the D/B CDA Developer’s design shall accommodate the Ultimate Design without relocation or narrowing traffic lanes.

The Project Design shall include design and construction of the mainlane pavement and approaches required for the future ramps at SH 130 shown on Exhibit D – Item 4a – Ultimate Design Exhibits. The Project Design shall include design and construction of the mainlane entrance and exit ramp gores required for the future ramps at SH 130 shown on Exhibit D – Item 4a – Ultimate Design Exhibits.

5. Bridges & Walls – The D/B CDA Developer shall design and construct bridge structures required for the Project Design to the total length and span arrangement required for the Ultimate Design, including spanning future lanes that will be constructed beneath the structures as a part of the Ultimate Design. The D/B CDA Developer shall design and construct frontage road bridge structures to the width required to satisfy the Ultimate Design.

The Project Design shall meet the vertical clearance requirements for Parmer Lane identified in Exhibit D – Item 19a – Non-Tolled Facility Permitted Loads Requirements.

The Project Design shall include design and construction of the eastbound 290 mainlane retaining walls immediately west of Parmer Lane required for the future direct connectors at SH 130 as shown on Exhibit D – Item 4a – Ultimate Design Exhibits.

The Project Design shall include design and construction of the future eastbound frontage road bridge over Gilleland Creek in its ultimate configuration to accommodate future extension of frontage roads as shown on Exhibit D – Item 4a – Ultimate Design Exhibits.

6. Sign Structures – Sign structures shall be located to accommodate the Project Design. Sign bridges shall include sufficient length to span the Project Design. In addition, columns for sign bridges that are to be placed in the median must be placed in the center of the mainlane median.
7. Lighting – Lighting shall be designed and constructed to meet the requirements of the Project Design, but shall not conflict with provisions for the Ultimate Design.
8. Signals – All signals shall be designed and constructed to accommodate ultimate lane configuration and signal requirements without relocation (mast arms shall support future signal heads as required). For Project Design intersections without ultimate signals, conduit shall be provided under the roadways for future signal placement.
9. Landscape and Irrigation - All landscape and irrigation plans shall be designed and constructed to accommodate the Project Design and the Ultimate Design.

The D/B CDA Developer shall be required to provide supporting design information and, if necessary, cost information, satisfactory to the CTRMA, to ensure that the above requirements have been met. The D/B CDA Developer shall provide a schematic(s) for CTRMA's review and comment (in accordance with TxDOT guidelines) with profiles and cross-sections showing the Ultimate Design with the Project Design superimposed, which supports the constructability of the Ultimate Design. The CTRMA will not accept the Preliminary (30%) Design Submittal or any Early Release for Construction packages until the D/B CDA Developer has resolved all comments to CTRMA's satisfaction. The CTRMA shall have no obligation to accept the Final Design for any element of the Work until the CTRMA, TxDOT, and FHWA have determined that the D/B CDA Developer has achieved the requirements of this Section.

11.2 ROADWAY DESIGN

11.2.1 General Scope Requirements

The D/B CDA Developer shall design the roadway components necessary to construct the Project Design, and accommodate the Ultimate Design as defined in Section 11.1.2.2, within the Final ROW. The Project Design shall conform to the criteria indicated in and in accordance with Exhibit C – Technical Provision 11. In the absence of specific criteria herein, the Project Design shall conform to applicable Standards and criteria of TxDOT, AASHTO and FHWA.

The CTRMA encourages all positive and creative design solutions that facilitate the development plans of adjacent property owners and support the success of the Project. The D/B CDA Developer should also be open to design requests from adjacent property owners that are financially feasible, environmentally sound, and help expedite the overall design, utility, ROW, and construction processes.

In addition to all other requirements applicable to the Work hereunder, the D/B CDA Developer shall prepare the final geometric design of the roadway elements of the Project Design and Ultimate Design. These shall be in accordance with sound engineering judgment and latest standards for safety, operations and maintenance. The Environmental Documents contain certain assumptions and criteria for which certain Environmental Approvals and other Governmental Approvals are or will be based. Deviations from these criteria may require revisions to, or re-issuance of, the Environmental Approvals and/or Governmental Approvals. The D/B CDA Developer shall not be entitled to any time extension or additional compensation in connection with such revisions or re-issuance with the exception of CTRMA requested changes.

11.2.2 Required Coordination with Other Entities

There are several locations along the Project that will require coordination with other entities. At these locations the D/B CDA Developer is required to accommodate design and construction approaches to aid in future expansion or connection. These locations and entities include but are not limited to:

1. US 183 at US 290 – Coordination with the US 183 Interchange Project contractor.
2. Tuscany Way – Coordination with Travis County is required.

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3. Arterial A – Coordination with Travis County and City of Austin is required.
 4. Harris Branch Parkway – Coordination with TxDOT is required.
 5. Decker Lane (FM 3177) – Coordination with TxDOT is required. If the construction of the realignment of FM 3177 is completed prior to construction of the Project improvements in the area of the realignment, the D/B CDA Developer will be required to reestablish the physical tie to the realigned FM 3177 facility. The latest schematic for the FM 3177 realignment is provided as *Exhibit D – Item 25a – Preliminary FM 3177 Realignment Plans*.

It is anticipated that TxDOT will let the FM 3177 realignment project as shown in *Exhibit D – Item 25a – Preliminary FM 3177 Realignment Plans* in the summer of 2011. The D/B CDA Developer will be required to continue the closed drainage system of FM 3177 to the point that the FM 3177 curb intersects the eastbound frontage road. The D/B CDA Developer will be required to extend the FM 3177 median and curb and gutter in order to provide proper intersection control. The D/B CDA Developer will also be required to perform full depth reconstruction on FM 3177 to the limit of the curb lines established on FM 3177 with the FM 3177 project.

6. SH 130 – Coordination with TxDOT is required.
7. Parmer Lane – Coordination with TxDOT is required.
8. Toll System – Coordination with the CTRMA's SI.

11.2.3 Design Criteria

The roadway design criteria for this Project is identified in *Attachment 11 – Design Summary Report*.

Grade breaks, where permitted in the latest version of the TxDOT Roadway Design Manual, shall only be used with prior approval from the CTRMA.

11.2.4 Tolling Evasion Measures

Toll evasion measures as specified in *Exhibit C – Technical Provision 11.3.11* will not be required for the Project.

11.2.5 Median Barrier Requirements

Location and Layout. The D/B CDA Developer shall provide a continuous median cable barrier separating the mainlane roadways on the Project. The cable barrier shall be installed along the flowline of the median in accordance with manufacturer's recommendations. The D/B CDA Developer shall provide a mow strip for the median cable barrier.

12.0 BRIDGES & HIGHWAYS STRUCTURE DESIGN

12.1 HIGHWAY BRIDGE DESIGN REQUIREMENTS

12.1.1 General Requirements

The D/B CDA Developer is responsible for completing the bridge and roadway structures in accordance with the requirements identified in Section 10, Exhibit C – Technical Provision 10, and Exhibit C – Technical Provision 12.

The D/B CDA Developer shall conduct subsurface investigations for all bridges, retaining walls, sound walls, culvert structures, and sign support structures in accordance with the requirements set forth in Section 14 and Exhibit C – Technical Provision 14.

Due to the Adjustment of Austin Energy electric transmission lines the maximum bridge deck elevation between Mainlane Stations 326+26 and 327+26 of the two (2) mainlane and two (2) frontage road bridges at the Mogan/Walnut Creek crossing shall be no greater than 564.0 feet.

Due to the Missouri Kansas Texas Railroad crossing at approximate Mainlane Station 325+80, the minimum low chord elevation for any bridge crossing over the Missouri Kansas Texas railroad crossing at approximate Mainlane Station 325+80 shall be 549.0 feet. Additionally, a horizontal clearance of 60.0 feet to each side of mainlane station 325+80 shall be required to preserve a future rail corridor.

Specific requirements for the design of bridges on this Project shall conform to the following specific parameters:

- LRFD Design method shall be utilized for all bridges.
- The design life for all bridges and culverts shall be based on a 50-year life.
- Concrete bridge decks on stringers shall be a minimum of eight (8) inches thick.
- End slopes and side slopes shall be no steeper than 3:1 (horizontal to vertical).

A record set of design calculations, including the checker's detailed documentation, shall be provided to the CTRMA within thirty (30) Business Days of the CTRMA's acceptance of the Final Design Submittal.

12.1.2 Beams and Girders

The D/B CDA Developer shall provide beams and girders that are of the same uniform depth for each structure.

If the D/B CDA Developer is required to provide steel beams, the D/B CDA Developer shall provide all steel bridge beams in weathering steel. No painted steel bridge beams shall be allowed or utilized.

12.1.3 Bridge Railing and Barriers

For maintenance requirements during construction, see *Exhibit C – Technical Provision 24*.

12.1.4 Retaining Walls

The D/B CDA Developer's design of MSE abutment walls will include four (4) feet of clearance between wall panels and abutment foundations to allow for proper strap development lengths.

In situations where retaining walls are required due to mainlanes being on fill, the wall should be located immediately adjacent to the outside mainlane shoulder or adjacent to the future outside shoulder in locations where the Ultimate Design must be accommodated. If retaining walls that are required due to the mainlanes being on fill are not located immediately adjacent to the outside mainlane shoulder or adjacent to the future outside shoulder in locations where the Ultimate Design must be accommodated, the following conditions must be met:

- The slope from the outside mainlane shoulder to the top of wall shall be 6:1 or flatter.
- A concrete lined pilot channel no less than 2' wide shall be installed at the back of the wall to capture runoff and convey runoff to an appropriate outfall location.
- A concrete traffic barrier shall be installed at the top of the retaining wall.
- Concrete rip rap shall be installed in the area between the outside mainlane shoulder and the top of retaining wall in areas that the distance from the outside mainlane shoulder to the top of retaining is less than 10 feet.
- Concrete rip rap shall be installed in the area between the outside mainlane shoulder and the top of retaining wall in the areas immediately adjacent to bridge abutments.

13.0 PERMANENT SIGNING DESIGN

The D/B CDA Developer shall design and install all toll, guide, warning, and regulatory signs in accordance with the current TxDOT Standards, the TMUTCD and with the requirements identified in Exhibit C – Technical Provision 13.

A preliminary sign schematic has been developed for the Project and is shown in Exhibit D – Item 22a – Preliminary Signing Schematic. The D/B CDA Developer shall finalize the sign schematic as a part of the Project Design. The Project Design shall include overhead sign bridges that accommodate future lane-use control signals to be installed by others at a minimum spacing of every one-half mile, and in front of and within five hundred feet of every mainlane toll gantry for both the eastbound and westbound mainlanes. All signs shall be mounted in the manner prescribed in Exhibit D – Item 22a – Preliminary Signing Schematic.

The Project Design shall meet the requirements outlined in Exhibit D – Item 19b – Permitted Loads Signing Requirements.

The scope of the sign design and installation pertaining to the Work shall include:

- New sign installations located along the proposed Project (including signs required in the toll gantry areas).
- Modification or relocation of existing signs located along the proposed Project.
- New signs and/or replacement signs on existing roadways, including signs outside the Project limits and Final ROW.
- Guide signs required for the Project Design plans for the Project.
- Toll signage shall be consistent with the US 183 Interchange Project.

The D/B CDA Developer shall also design and install guide signs along the Project. The D/B CDA Developer will install signs located outside of the Final ROW in existing rights-of-way controlled by other local or State agencies. As a part of the Formal Design Reviews, the D/B CDA Developer shall provide the CTRMA with a complete sign layout indicating the locations of all signs and advance toll warning signs.

For maintenance requirements during construction, see Exhibit C – Technical Provision 24.

14.0 GEOTECHNICAL DESIGN

Geotechnical borings have been performed within the Project limits and are documented in the reference documents in Exhibit D – Item 6 – Geotechnical Reports and Exhibit D – Item 20 – Pavement Design Report. Each boring identifies subsurface conditions at the location of specific borings at the time and under the conditions existing when the information was obtained.

The geotechnical data provided by the CTRMA shall not be the sole source for design. The D/B CDA Developer shall develop a detailed boring program to supplement the preliminary geotechnical reports provided in Exhibit D – Item 6 – Geotechnical Reports. The D/B CDA Developer shall produce final geotechnical reports in accordance with the requirements of Exhibit C – Technical Provision 14. The D/B CDA Developer shall be responsible for obtaining permission to enter properties not under CTRMA control and shall obtain all Governmental Approvals necessary for geotechnical investigations, including clearance for all Utilities and all Governmental Approvals required for access road grading, temporary fill of jurisdictional waters of the US or State (including wetlands), drilling permits, and groundwater protection from inter-aquifer contamination. The D/B CDA Developer shall also be responsible for any mitigation or restoration associated with its geotechnical investigation program.

15.0 DRAINAGE DESIGN

The requirements in this Section 15 are in addition to the requirements presented in Exhibit C – Technical Provision 15.

The Project drainage and stormwater management systems for the mainlanes, ramps, cross street intersections, and major interchanges shall conform to the standards specified in Exhibit C – Technical Provision 15.

The D/B CDA Developer is solely responsible for the completion of the final hydraulic report(s) needed to address drainage features, under the Project Design in accordance with Exhibit C – Technical Provision 15.

Some easements and detention pond locations are shown in the Schematic Plan. The D/B CDA Developer shall determine the final location and appropriate size for all drainage features needed to address the Ultimate Design and the Project Design.

To meet the requirements set forth in USACE Nationwide Permits (NWP), the D/B CDA Developer shall span all waters of the US or if work is performed below the ordinary high water mark, stay within the criteria limits of the NWP.

15.1 STANDARDS AND GUIDELINES

No additional requirements.

15.2 DRAINAGE ANALYSIS AND EVALUATION

The D/B CDA Developer shall design and construct a drainage system that provides a well-drained corridor and a safe environment for the individuals who construct, use, and maintain the highway. The drainage system will include all curb inlets, grate inlets, manholes, junction boxes, headwalls, safety end treatments, storm sewer pipes, box sewers, lined channels, ditches, swales, ponds and any other appurtenances necessary to provide proper drainage for the Project Design developed by the D/B CDA Developer to meet the intent of the Ultimate Design, including all cross-street intersections and major interchanges as identified in Exhibit C – Technical Provision 15. The D/B CDA Developer shall provide the CTRMA signed and certified Final Hydraulic Report(s), which shall be a record set of all drainage computations, both hydrologic and hydraulic.

The D/B CDA Developer shall select the appropriate hydrologic method based on the criteria in Exhibit C – Technical Provision 15. Models and methods available from adjacent jurisdictions may be considered as appropriate following coordination with CTRMA.

15.3 DESIGN AND CONSTRUCTION CRITERIA

No additional requirements.

15.4 CONVEYANCE SYSTEM DESIGN

No additional requirements.

15.5 BRIDGE HYDRAULICS

No additional requirements.

15.6 OPEN CHANNELS AND DITCHES

No additional requirements.

15.7 STORMWATER MANAGEMENT PLAN

No additional requirements.

15.8 STORMWATER POLLUTION PLAN (SW3P)

The design criteria for the SW3P shall comply with Exhibit C – Technical Provision 15.

15.9 WATER RESOURCE PERMITS

No additional requirements.

15.10 COORDINATION OF WATER RESOURCE ISSUES

No additional requirements.

15.11 AS-BUILT DRAINAGE PLANS

No additional requirements.

16.0 PAVEMENT MARKING

The following is in addition to the requirements of Exhibit C – Technical Provision 16.:

All edge line pavement markings shall be 6” reflectorized profile markings in accordance with TxDOT Standards

All mainlane skip striping shall be in accordance with the special mainlane striping pattern as shown in Exhibit D- Item 16 - US 183 Interchange Project Design Plans

17.0 TRAFFIC SIGNALS

The following is in addition to the requirements of Exhibit C – Technical Provision 17.

The local agency having jurisdiction for the traffic signals required for the Project is the City of Austin. It is anticipated that there will be an inter local agreement between the CTRMA and the City of Austin pursuant to which the operation and maintenance of the traffic signals for the Project will be turned over to the City of Austin after Final Acceptance. The D/B CDA Developer shall coordinate with the City of Austin in accordance with Exhibit C – Technical Provision 17.

The Project Design shall include design and construction of permanent signal systems at the following intersections:

- Tuscany Way
- Springdale Road
- Arterial “A”
- Johnny Morris Road/ Giles Road
- Harris Branch Parkway
- Parmer Lane
- Decker Lane
- SH 130

The Project Design shall meet the vertical clearance requirements for traffic signals outlined in Exhibit D – Item 19a – Non-Tolled Facility Permitted Loads Requirements

18.0 DUCT BANKS & ITS

The following is in addition to the requirements of Exhibit C – Technical Provision 18.

The D/B CDA Developer's responsibilities for design, procurement, and installation of the ITS is provided in Attachment 21 – Toll System & ITS Responsibility Matrix.

To accommodate connection to the TMC, the D/B CDA Developer shall tie to ground boxes at US 183 and SH 130.

19.0 LIGHTING

The requirements in this Section 19 are in addition to the requirements presented in Exhibit C Technical Provision 19.

19.1 LIGHTING REQUIREMENTS

The D/B CDA Developer shall provide lighting design and installation of continuous lighting on the mainlanes and safety lighting on the frontage roads, interchanges, toll facilities, under bridges, and at ramp areas, for the limits shown on Exhibit D – Item 23a – Illumination Limits Exhibit – Sheets 1 and 2 in accordance with Exhibit C – Technical Provision 19 and the current version of the TxDOT *Highway Illumination Manual (HIM)*.

The D/Build CDA Developer shall design and install a lighting system that consists of two independent lighting systems. One lighting system will be maintained and operated by the CTRMA and the other lighting system is to be maintained and operated by others. The D/B CDA Developer shall install two complete lighting systems for the limits as shown in Exhibit D – Item 23a – Illumination Limits Exhibit – Sheets 1 and 2. The D/B CDA Developer shall prepare lighting studies that shall consider illumination levels, uniformity and sources in accordance with the TxDOT HIM. The D/B CDA Developer shall prepare a master lighting plan from the lighting study. The D/B CDA Developer shall be responsible for the development and execution of any permits and agreements necessary for the design and construction of the illumination system.

The D/B CDA Developer's lighting designs should comply with any requirements set forth in the Environmental Document. The D/B CDA Developer shall install cut-off fixtures to eliminate spill-over lighting outside the Final ROW to less than one percent (1%) of the average illumination roadway level. All lighting equipment shall conform to the requirements of the TxDOT HIM and shall be currently listed in latest TxDOT approved material producer list.

150 Watt underpass lighting units shall meet the following specifications:

- Housing. Aluminum housing with integral, weather-tight LED driver compartments and high performance aluminum heatsinks specifically designed for LED lighting application. Bug/debris resistant.
- LED and Optical Assembly. IESNA Type II Short Distribution. 4300K Color Temperature (de-rating is acceptable).
- Ratings. UL listed, suitable for wet locations.
- Mounting. See RID(UP), compatible with Underpass Light Fixture Type 1 and Type 2 mounting shaft.
- Electrical. 120-277V 50/60 hz universal electronic driver. Integral Surge protection per IEEE/ANSI C62.41.

Roadway and area illumination shall be designed in accordance with TxDOT Standards. Lighting design and layout shall conform to the TxDOT HIM. The D/B CDA Developer shall provide photometric layout, including photometric foot prints and area/zone calculations. Electrical design and layout shall conform to the TxDOT HIM and NEC. The D/B CDA Developer shall provide electrical layout, including circuit loading and voltage drop calculations.

High-mast lighting is permitted within US 183 and SH 130 interchanges but not between these interchanges. The D/B CDA Developer shall replace the existing illumination on the eastbound US 290 to northbound SH 130 direct connector bridge with aesthetically enhanced illumination poles.

20.0 PAVEMENT

20.1 PAVEMENT DESIGN

The CTRMA has provided the minimum pavement design for the Project permanent pavement and the pavement for the transition at the eastern Project limits. The Pavement Design Report is provided in Exhibit D – Item 20 – Pavement Design Report. The D/B CDA Developer will not be required to provide a pavement design report for the Project permanent pavement or the transition pavement. As a part of the Formal Design Reviews, the D/B CDA Developer shall submit signed and sealed pavement designs for the temporary pavements required for D/B CDA Developer’s traffic control plans and detours.

Special Provision 341-024 will be allowed for the Project.

For maintenance requirements during construction, see Section 24 and Exhibit C – Technical Provision 24.

20.1.1 Mainlane Pavement and Structural Section Requirements

Mainlanes and mainlane ramp pavements shall be CRCP and shall, at a minimum, be placed with the pavement and structural sections defined in Table 20.1.1 and in accordance with the requirements found in Exhibit D – Item 20 – Pavement Design Report.

TABLE 20.1.1
Minimum CRCP Pavement and Structural Section for Mainlane
and Ramps

Description	Cut	Fill
CRCP or JCPGFRPB	14”	14”
HMA Base D-GR HMA(QCQA) TY-B PG70-22	4”	4”
Prime Coat (AE-P)	Yes	Yes
Embankment Item 132 (DENS CONT) (TY C1) (REQUIRED)	18”	18”
Embankment Item 132 (DENS CONT) (TY C2) (AS REQUIRED TO MEET PROFILE)	N/A	24”
Embankment Item 132 (DENS CONT) (TY C3) (AS REQUIRED TO MEET PROFILE)	N/A	In excess of above Embankment

20.1.2 Mainlane and Ramp Toll Gantry Pavement Requirements

Mainlane and ramp pavements at the toll gantry locations shall be Jointed Concrete Pavement using Glass Fiber Reinforced Polymer Bars (JCPGFRPB) in accordance with the modified TTA standard JCPGFRPB-04 provided in Exhibit D – Item 12b – TTA Standards placed with the sections defined in Table 20.1.1 and in accordance with Exhibit D – Item 20 – Pavement Design Report. Limits of JCPGFRPB shall be as shown in Exhibit D – Item 9a – Toll Facility Guidelines.

20.1.3 Mainlane Transition Pavement and Structural Section Requirements

The mainlane transition east of Parmer Lane shall be flexible pavement and shall, at a minimum, be placed with the section defined in Table 20.1.3 and in accordance with Exhibit D – Item 20 – Pavement Design Report.

TABLE 20.1.3
Minimum Mainlane Transition Pavement and Structural Section

Description	
Stone Matrix Asph SMA-C SAC-A PG76-22	2"
HMA Base D-GR HMA(QCQA) TY-B PG70-22	7"
Prime Coat (AE-P)	yes
Flex Base Item 247 FL BS (TY D GR 5)	12"
Geotextile Fabric (TY 1)	yes
Embankment Item 132 (DENS CONT) (TY C1) (REQUIRED)	18"
Embankment Item 132 (DENS CONT) (TY C2) (AS REQUIRED TO MEET PROFILE)	24"
Embankment Item 132 (DENS CONT) (TY C3) (AS REQUIRED TO MEET PROFILE)	In excess of above Embankment

Embankment Item 132 listed in table above as REQUIRED is required for roads in cut and fill sections.

20.1.4 Frontage Road and Cross Street Pavement and Structural Section Requirements

Frontage Road and Cross Street pavements shall be flexible pavement and shall, at a minimum, be placed with the section defined in Table 20.1.4a and in accordance with Exhibit D – Item 20 – Pavement Design Report.

TABLE 20.1.4a
Minimum Flexible Pavement and Structural Section for Frontage Roads

Description	
Stone Matrix Asph SMA-C SAC-A PG76-22	2"
HMA Base D-GR HMA(QCQA) TY-B PG70-22	8"
Prime Coat (AE-P)	yes
Flex Base Item 247 FL BS (TY D GR 5)	8"
Geotextile Fabric (TY 1)	yes
Embankment Item 132 (DENS CONT) (TY C1) (REQUIRED)	12"
Embankment Item 132 (DENS CONT) (TY C2) (REQUIRED)	12"
Embankment Item 132 (DENS CONT) (TY C3) (REQUIRED)	8"
Embankment Item 132 (DENS CONT) (TY C3) (AS REQUIRED TO MEET PROFILE)	In excess of above embankment

Embankment Item 132 listed in table above as REQUIRED is required for frontage roads in cut and fill sections.

20.1.5 Frontage Road Transition Pavement and Structural Section Requirements

Frontage road transition pavements shall be flexible pavement and shall, at a minimum, be placed with the section defined in Table 20.1.5a and in accordance with *Exhibit D – Item 20 – Pavement Design Report*.

TABLE 20.1.5a
Minimum Flexible Pavement and Structural Section for Frontage Road Transitions

Description	
Stone Matrix Asph SMA-C SAC-A PG76-22	2"
HMA Base D-GR HMA(QCQA) TY-B PG70-22	6.5"
Prime Coat (AE-P)	yes
Flex Base Item 247 FL BS (TY D GR 5)	8"
Geotextile Fabric (TY 1)	yes
Embankment Item 132 (DENS CONT) (TY C1) (REQUIRED)	12"

Embankment Item 132 (DENS CONT) (TY C2) (REQUIRED)	12"
Embankment Item 132 (DENS CONT) (TY C3) (REQUIRED)	8"
Embankment Item 132 (DENS CONT) (TY C3) (AS REQUIRED TO MEET PROFILE)	In excess of above embankment

Embankment Item 132 listed in table above as REQUIRED is required for frontage roads in cut and fill sections.

20.1.6 Shared Use Path Pavement and Structural Section Requirements

Shared use path pavement shall be concrete pavement and shall, at a minimum, be placed with the section defined in Table 20.1.6 and in accordance with Exhibit D – Item 20 – Pavement Design Report.

**TABLE 20.1.6
Minimum Pavement and Structural Section for Shared Use Path**

Description	
Reinforced Class A concrete	5"
Flex Base Item 247 FL BS (TYA GR5)	6"
Geotextile Fabric (TY 1)	
Embankment Item 132 (DENS CONT) (TY C1) (REQUIRED)	6"

21.0 TOLL SYSTEMS

The D/B CDA Developer's Project Design shall include the toll system as provided in Exhibit D – Item 9a – Toll Facility Guidelines except for the minimum vertical clearance from the top of pavement to the bottom of structure, which shall be 19'-6" irrespective of toll equipment below the structure. The D/B CDA Developer's responsibilities for design, procurement, and installation of the toll system are provided in Attachment 21 – Toll System & ITS Responsibility Matrix.

The design of the toll system and facilities shall be in accordance with the requirements found in Exhibit C -Technical Provision 21 and Exhibit D – Item 9a – Toll Facility Guidelines. The requirements in Exhibit D – Item 9a – Toll Facility Guidelines, as previously incorporated into the design of US 183 Interchange Project, are provided in Exhibit D – Item 16a – US 183 Interchange Project Design Plans. The D/B CDA Developer is responsible for coordinating the Project Design of the toll system and facilities with the SI.

The D/B CDA Developer shall provide the toll gantries in the locations as shown in Exhibit D – Item 2 – Schematic Plan and shall provide a temporary toll gantry for the mainlane movements for the Interim Milestone. D/B CDA Developer's responsibilities relative to the temporary toll gantry shall be consistent with those responsibilities for the permanent toll gantries in accordance with Attachment 21 – Toll System & ITS Responsibility Matrix.

22.0 MAINTENANCE OF TRAFFIC

The requirements in this Section 22 are in addition to the requirements presented in Exhibit C Technical Provision 22.

22.1 TRAFFIC CONTROL AND SEQUENCING PLANS

The D/B CDA Developer shall consider traffic control phasing issues very early in the development process. The Preliminary Submittal (30%) Design shall contain a Maintenance of Traffic (MOT) Plan with typical sections showing the sequencing of construction and a description of the traffic control phasing.

The D/B CDA Developer shall provide the CTRMA and TxDOT with a MOT Plan concept presentation to the MOT Task Force and the Austin District prior to the Preliminary Submittal (30%) Design. The CTRMA and TxDOT will provide comments on the MOT concept. The CTRMA will not accept the Preliminary Submittal (30%) Design or any Early Release for Construction package until the D/B CDA Developer resolves all comments from the MOT concept presentation to the satisfaction of the CTRMA. The D/B CDA Developer shall utilize PowerPoint and roll plots to convey this concept at the meeting.

The D/B CDA Developer shall not implement the MOT Plan until the MOT Plan has been through the Formal Design Review. The D/B CDA Developer shall coordinate MOT review with other agencies as required and resolve all review comments to the satisfaction of the CTRMA. The D/B CDA Developer shall prepare Traffic Control and Sequencing Plans as part of the MOT that will maintain traffic flow on all impacted facilities during construction of the Project in accordance with the requirements identified in Exhibit C - Technical Provision 22. The MOT shall include sufficient information and details to adequately explain how the Project construction sequencing and phasing will occur throughout the Project construction.

The following are required for this Project:

- Existing number of lanes will not be reduced except for temporary lane closures that are subject to the lane rental fees set forth in Tables 22.1 and 22.2. The lane rental fees illustrated in table 22.1 apply when traffic is on the existing 2-lane roadway. Table 22.2 applies when traffic is traveling on the new 3-lane frontage road.
- Lane rental fees will be assessed in accordance with Tables 22.1 and 22.2. All lane rental fees will be deducted from the D/B CDA Developer's Lane Rental Bank. If the D/B CDA Developer exceeds the value of its Lane Rental Bank, the CTRMA will deduct lane rental fees in excess of the Lane Rental Bank from the D/B CDA Developer's monthly invoice.
- For the purpose of lane rentals the following apply:
 - ▣ Lane rental fee will be prorated in 15 minute increments

-
- The first minute of a 15 minute increment will be assessed the whole 15 minute prorated fee
 - The closure of one mainlane shoulder will not be charged as a lane rental fee
 - The closure of both mainlane shoulders in a single direction will be counted as a single mainlane closure for the purpose of determining lane rental fees. For the purpose of this Section, closing any part of a shoulder constitutes a shoulder closure
 - The closure of a mainlane entrance or exit ramp will be counted as a single lane closure for the period in which it is closed
- Design speed for mainlane detours shall be 50 mph or as approved by the CTRMA
 - Signed and sealed pavement designs for all detour pavements.
 - Lane closures are not permitted on the day of University of Texas home football games, during the Austin City Limits Music Festival, the ROT Rally, up to five days (per year) of The Star of Texas Fair and Rodeo (as directed by the CTRMA), on Good Friday, Easter weekend, Memorial Day, Memorial Day weekend, July 4th, Labor Day, Labor Day weekend, Thanksgiving Day through Sunday, Christmas Eve, Christmas Day, New Year's Eve, New Year's Day, or on any other high traffic days or holidays (up to seven days per year) as determined by the CTRMA or TxDOT.
 - For the following days or events, lane closures are not permitted after 3:00 PM on the day preceding:
 - University of Texas home football games
 - Austin City Limits Music Festival
 - ROT Rally
 - Easter weekend
 - Memorial Day weekend
 - July 4th
 - Labor Day weekend
 - Thanksgiving Day
 - Christmas Eve
 - New Year's Eve
 - Lane closures for existing 2-Lane US 290 are not permitted during the following times:
 - eastbound 7am-9am Monday through Friday,
 - eastbound 3pm-8pm Monday through Friday,
 - westbound 6am-10am Monday through Friday, and
 - westbound 4pm – 6pm Monday through Friday.

-
- 2 lane, lane closures for the proposed 3-Lane US 290 frontage roads are not permitted during the following times:
 - eastbound 7am-9am Monday through Friday,
 - eastbound 3pm-8pm Monday through Friday,
 - westbound 6am-10am Monday through Friday, and
 - westbound 4pm – 6pm Monday through Friday.
 - US 290 is a hurricane evacuation route; no lane closures or other work which may impede traffic will be allowed during evacuation periods
 - Minimum 11-foot lanes, 8-foot outside shoulder, 4-foot inside shoulder on US 290: variances allowed for short periods with the approval of CTRMA and TxDOT
 - Maintain existing left and right turn lanes
 - Complete closure of the existing US 290 Mainlanes will not be allowed at any time.
 - Upon completion of the Interim Development Work, two lanes must remain open at all times on both the east bound and west bound 290 East frontage roads from the western Project limits to east of Springdale road.
 - Upon completion and opening of the 3-Lane Frontage Roads, complete closure of the frontage roads will not be allowed.

TABLE 22.1**Lane Rental Fees for Existing 2-Lane US 290**

Eastbound Road Closures - Hourly Lane Rental Fees					
No. of Lanes Closed	Morning Peak Hours (7 – 9 AM M-F)	Mid Day Hours (9 AM – 3 PM M-F)	Evening Peak Hours (3 – 8 PM M-F)	Nighttime Hours (8 PM – 7 AM M-F) Weekend Off Peak Hours (5 PM – 11 AM Sat-Sun)	Weekend Peak Hours (11 AM – 5 PM Sat-Sun)
1	\$20,000	\$16,000	\$50,000	\$0	\$10,000

Westbound Road Closures - Hourly Lane Rental Fees					
No. of Lanes Closed	Morning Peak Hours (6 – 10 AM M-F)	Mid Day Hours (10 AM – 4 PM M-F)	Evening Peak Hours (4 – 6 PM M-F)	Nighttime Hours (8 PM – 7 AM M-F) Weekend Off Peak Hours (5 PM – 11 AM Sat-Sun)	Weekend Peak Hours (1 – 7 PM Sat-Sun)
1	\$40,000	\$16,000	\$16,000	\$0	\$10,000

TABLE 22.2**Lane Rental Fees for New 3-Lane Frontage Roads**

Eastbound Frontage Road Closures - Hourly Lane Rental Fees					
No. of Lanes Closed	Morning Peak Hours (7 – 9 AM M-F)	Mid Day Hours (9 AM – 3 PM M-F)	Evening Peak Hours (3 – 8 PM M-F)	Nighttime Hours (8 PM – 7 AM M-F) Weekend Off Peak Hours (5 PM – 11 AM Sat-Sun)	Weekend Peak Hours (11 AM – 5 PM Sat-Sun)
1	\$0	\$0	\$0	\$0	\$0
2	\$20,000	\$16,000	\$50,000	\$0	\$10,000

Westbound Frontage Road Closures - Hourly Lane Rental Fees					
No. of Lanes Closed	Morning Peak Hours (6 – 10 AM M-F)	Mid Day Hours (10 AM – 4 PM M-F)	Evening Peak Hours (4 – 6 PM M-F)	Nighttime Hours (8 PM – 7 AM M-F) Weekend Off Peak Hours (5 PM – 11 AM Sat-Sun)	Weekend Peak Hours (1 – 7 PM Sat-Sun)
1	\$0	\$0	\$0	\$0	\$0
2	\$40,000	\$16,000	\$16,000	\$0	\$10,000

Changes to the approved MOT Plan shall follow the design change process outlined in *Exhibit C – Technical Provision 2.3.10*. The D/B CDA Developer shall review and compare those plans with provisions of this *Scope of Work* and *Exhibit C – Technical Provision 22* to ensure conformance with Project requirements. The D/B CDA Developer shall update MOT Plan as necessary and incorporate with their traffic control plan for construction of the facility to the Project limits.

Cross roads may be closed during construction operations. The D/B CDA Developer will be responsible for providing the CTRMA a Letter of Concurrence signed by the impacted agencies/entities. These agencies/entities may consist of County, City(s), School Systems, Post Offices, Emergency Services, or other impacted entities. Adjacent Cross Roads may not be closed simultaneously. More than one (1) cross road crossing may be closed for construction operations, with CTRMA approval, as long as detours for these closures do not overlap or impact one another. For allowable traffic handling techniques for each crossing road, see Table 22.3- Cross Road Traffic Handling Concepts.

TABLE 22.3
Cross Road Traffic Handling Concepts

Cross Road	Road Closure Allowed With Agency Approval	Detour Design Speed (MPH)	Letter of Concurrence Required for Closure
Tuscany Way	Yes	35	N/A
Springdale Road	Yes	35	N/A
Ferguson Cutoff	Yes	35	Yes
Chimney Hill	No	35	N/A
Johnny Morris/Giles	Yes	35	Yes
Crofford Lane	Yes	35	Yes
Harris Branch	Yes	35	Yes
Blue Goose Road	Yes	35	Yes
Decker Lane (FM 3177)	Yes	35	Yes
SH 130	Yes	50	Yes
Parmer Lane	Yes	50	Yes

Design speed for detours shall be as listed above in Table 22.3 (Cross Road Traffic Handling Concepts) or as approved by the CTRMA.

Four 290 East Mainlane spans will be constructed over SH 130, the D/B CDA Developer shall limit SH 130 closures to 2 nights per span for beam hanging operations and another night to set the precast panels for a total maximum impact of 12 nights for the four spans. Additionally during deck and bridge rail pours the D/B CDA Developer shall perform these operations affecting only one lane of SH 130 utilizing single lane shifts to accommodate these operations. Single lane closures must be limited to a total of 8 nights to complete these pours. The D/B CDA Developer shall provide a two month notice including a written work plan detailing closures on SH 130 to allow for adequate coordination with the Texas Turnpike Authority. Night-time/week-end work is expected to reduce impacts to SH 130.

The existing Decker Lane crossover between east bound and west bound US 290 shall remain open to traffic until the proposed Harris Branch improvements are opened to traffic.

Any reduction in the regulatory speed limit on US-290 will require approval from the CTRMA and a Texas Transportation Commission (TTC) minute order.

The D/B CDA Developer's MOT for the Project shall be reviewed and approved by TxDOT and the CTRMA prior to any work in the US 290 corridor.

The D/B CDA Developer will be responsible for furnishing and installing all of the concrete traffic barrier (CTB), attenuators, and associated hardware that will be required for the D/B CDA Developer's MOT Plan.

The D/B CDA Developer will be responsible for moving and resetting the CTB, attenuators, and associated hardware as required for the D/B CDA Developer's MOT Plan.

The D/B CDA Developer will be responsible for removing all of the CTB, attenuators, and associated hardware once it is no longer required for the D/B CDA Developer's MOT Plan.

23.0 CONSTRUCTION

The following is in addition to the requirements of Exhibit C – Technical Provision 23.

The D/B CDA Developer is responsible for completing the design and construction survey in accordance with the requirements identified in Exhibit C – Technical Provision Sections 11 & 23. The CTRMA has set primary survey control along the Project alignment. The control is provided in Exhibit D – Item 18 – Survey Data.

The CTRMA has provided low-level aerial mapping, planimetrics, Digital Terrain Model (DTM), and digital images for the D/B CDA Developer's use, as shown in Exhibit D – Item 18 – Survey Data. The D/B CDA Developer shall review existing survey data and determine the requirements for updating or extending survey and mapping data. The D/B CDA Developer shall be responsible for the final precision, accuracy, and comprehensiveness of all survey and mapping Work.

The D/B CDA Developer shall confirm horizontal and vertical datum with SH 130 and US 183.

The D/B CDA Developer shall install and maintain all survey control monumentation and Final ROW monumentation in accordance with TxDOT specifications throughout the Work at the D/B CDA Developer's expense. The D/B CDA Developer shall incorporate all supplemental and additional mapping or ground topographic mapping needed to meet the Project requirements into the base mapping files. New mapping shall be shown on all survey, engineering, and ROW products referencing the base map. Supplemental and additional mapping or ground topographic mapping shall include, but not be limited to, the following conditions: new improvements, changes to improvements, areas obscured by vegetation or structures, areas outside the current mapping, areas requiring more accurate topographic information, and changes in the ROW configuration or alignment.

If requested, the D/B CDA Developer will make available to the Systems Integrator electronic file copies of available survey and mapping data necessary for the Systems Integrator to complete his Work.

No open burning will be allowed on this project. Dispose of material in accordance with federal, state, and local requirements. The D/B CDA Developer shall procure the appropriate permits for disposal and supply copies of these permits to the Engineer prior to waste removal.

24.0 MAINTENANCE

No additional requirements.

25.0 SAFETY

No additional requirements.

26.0 SUSTAINABILITY

26.1 INTRODUCTION

The CTRMA is including this *Section 26* to incorporate sustainable practices into the Project. The CTRMA encourages the D/B CDA Developer to incorporate sustainable practices into the Development Work, and has implemented this Green Credits program to accomplish that goal.

26.2 REQUIRED TOTAL OF GREEN CREDITS FOR PROJECT

The D/B CDA Developer will be required to attain a minimum number of Green Credits in accordance with *Exhibit C – Technical Provision 26* as a part of the Development Work.

26.2.1 Suggested Green Credit Values from D/B CDA Developer

In addition to the Mandatory Sustainable Initiatives and the Optional Sustainable Initiatives, the D/B CDA Developer may submit requests to the CTRMA to amend the initiatives listed in *Exhibit C – Technical Provision 26*. These requests must contain a description of the new initiative, the sustainable benefits, and a suggested Green Credit value. Those requests approved by the CTRMA will be available for the D/B CDA Developer's use in attaining the required total number of Green Credits.

26.3 REPORTING

At the end of each quarter (April 1st, July, 1st, October 1st, and January 1st) and at the completion of the Project, the D/B CDA Developer shall submit a report to the CTRMA outlining all Mandatory Sustainable Initiatives and Optional Sustainable Initiatives implemented/utilized on the Project; the associated number of Green Credits earned will also be tabulated.

Should the D/B CDA Developer attain the Green Credit requirement prior to the end of the Project, they must continue to submit accurate reports regarding the implementation/utilization of all initiatives. Failure to do so will result in forfeiture of any awards and/or incentives.

26.4 AWARDS AND INCENTIVES ASSOCIATED WITH EXCEEDING REQUIRED TOTAL OF GREEN CREDITS

In the event that the D/B CDA Developer exceeds the required number of Green Credits at the completion of the Project, the D/B CDA Developer shall be eligible for recognition associated with constructing a Sustainability Level 2 or Sustainability Level 3 Project.

26.4.1 Sustainability Level 2 Project

For exceeding the Project requirement by 10 Green Credits, the D/B CDA Developer will be recognized with a plaque and an incentive payment of \$5,000.00.

26.4.2 Sustainability Level 3 Project

For exceeding the Project requirement by 20 Green Credits, the D/B CDA Developer will be recognized with a plaque and an incentive payment of \$10,000.00.

26.5 EFFECTS ON PRICE AND SCHEDULE

All cost and schedule impacts, both direct and indirect, associated with the inclusion of any and all Mandatory Sustainable Initiatives and Optional Sustainable Initiatives implemented by the D/B CDA Developer in association with this Section 26 are considered to be included in the D/B CDA Developer's Proposal. Inclusion of any and all Mandatory Sustainable Initiatives and Optional Sustainable Initiatives by the D/B CDA Developer in the implementation of this Agreement will not be allowed as basis for any cost or time claims by the D/B CDA Developer.

ATTACHMENT 11 – DESIGN SUMMARY REPORT

TABLE OF CONTENTS

SUBJECT	PAGE NUMBER
PROPOSED GEOMETRIC DESIGN ELEMENTS	2
PROPOSED TURNING BAY STORAGE LENGTHS.....	13
PROPOSED HYDRAULIC ELEMENTS.....	22

PROPOSED GEOMETRIC DESIGN ELEMENTS

Functional classification:

freeway arterial major collector minor collector local

Highway type:

urban freeway urban frontage road rural freeway rural frontage road

rural multilane rural two-lane suburban roadway urban street bike/pedestrian trail

Proposed work: 4R/new construction 3R 2R Terrain: level rolling

A. Traffic

Street	Existing ADT	ADT (letting year)	ADT (design year)
290E (East of US 183)	64,000	75,000	121,000

B. Design criteria (complete the following table)

290E TOLL PROJECT DESIGN CRITERIA

CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
GENERAL									
Prop. Basic Number of Lanes (Per Direction)	3	2	1	2	3	Varies	1	-	Per Schematic
Median Raised (ft)	-	-	-	-	-	Varies	-	-	TxDOT RDM (2010), Ch. 3-2, Pg. 3-6
Median Flush (ft)	-	-	-	-	-	Varies	-	-	TxDOT RDM (2010), Ch. 3-2, Pg. 3-7
Median Depressed (ft) (Does not include inside shoulder width)	30 (min)	-	-	-	-	-	-	-	TxDOT RDM (2010), Ch. 3-6, Pg. 3-63 Per Schematic
Median Opening spacing (ft)	-	-	-	-	-	-	-	-	TxDOT RDM (2010), Ch. 3-2, Pg. 3-8; Ch. 7-6, Pg. 7-13
Median Opening width (ft)	-	-	-	-	-	-	-	-	TxDOT RDM (2010), Ch. 7-6, Pg. 7-13
Stopping Sight Distance (ft)	730	425	425	425	360	Varies Based on Design Speed	-	Descending: 340 (max.), 126 (min.) Ascending: 126 (max.), 103 (min.)	TxDOT RDM (2010), Ch. 2-3, Pg. 2-7, Tbl. 2-1 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 42, Fig. 19

290E TOLL PROJECT DESIGN CRITERIA									
CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
HORIZONTAL ALIGNMENT									
Minimum Radii (ft)	2050 (absolute) 3405 (usual)	835 (absolute) 1055 (usual)	835 (absolute)) 1055 (usual)	835 (absolute) 1055 (usual)	660 (absolute) 830 (usual)	Varies Based on Design Speed	-	100	TxDOT RDM (2010), Ch. 2-4, Pg. 2-13 / 2-19, Tbl. 2-3 / 2-5 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 38, Tbl. 1
Horizontal Curvature of Highways without Superelevation (ft)	10750	6030	6030	6030	4970	-	-	-	TxDOT RDM (2010), Ch. 2-4, Pg. 2-14, Tbl. 2-4
Minimum Radii for Low-Speed Urban Streets without Superelevation (ft)	-	-	-	-	-	Varies Based on Design Speed	50	-	TxDOT RDM (2010), Ch. 2-4, Pg. 2-19, Tbl. 2-5
Maximum Superelevation Rate (%)	6	6	6	6	6	4	4	3	TxDOT RDM (2010), Ch. 2-4, Pg. 2-13 / 2-19, Tbl. 2-3 / 2-5 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 38
Maximum Relative Gradient for Superelevation Transition (%)	0.40	0.50	0.50	0.50	0.54	Varies Based on Design Speed	0.78	0.74	TxDOT RDM (2010), Ch. 2-4, Pg. 2-26, Tbl. 2-8

290E TOLL PROJECT DESIGN CRITERIA									
CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
Superelevation Minimum Transition Length $L_{AP} = 2.93 V_D$ (TxDOT)	206	147	147	147	132	Varies Based on Design Speed	44	25	TxDOT RDM (2010), Ch. 2-4, Pg. 2-19, Tbl. 2-5; Pg. 2-27 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 38
VERTICAL ALIGNMENT									
Profile Grade Maximum (%)	4	4 (des) Max per AASHTO	5	5	7	Varies Based on Design Speed	-	Less than 5 (typ.) / 5 (for up to 800') / 11 (for up to 50')	TxDOT RDM (2010), Ch. 2-5, Pg. 2-33, Tbl. 2-9; Ch. 3-6, Pg. 3-96 AASHTO Geometric Design of Highways and Streets (2004) AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 39 Per Schematic
Profile Grade Minimum With unpaved side ditches (%)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	TxDOT RDM (2010), Ch. 2-5, Pg. 2-34
Profile Grade Minimum For Curb & Gutter (%)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	-	TxDOT RDM (2010), Ch. 2-5, Pg. 2-34
Minimum Length of Vertical Curve ($L=3V_D$) (ft)	210	150	150	150	135	Varies Based on Design Speed	45	Varies	TxDOT RDM (2010), Ch. 2-5, Pg. 2-36 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 44, Tbl. 3

290E TOLL PROJECT DESIGN CRITERIA									
CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
K-Value CREST	247	84	84	84	61	Varies Based on Design Speed	3	-	TxDOT RDM (2010), Ch. 2-5, Pg. 2-37, Fig. 2-7
K-Value SAG	181	96	96	96	79	Varies Based on Design Speed	10	-	TxDOT RDM (2010), Ch. 2-5, Pg. 2-38, Fig. 2-8
ROADWAY FEATURES									
Proposed Lane Width (ft) (Does Not Include Shoulders)	12	12	14	12	12 / 14 (outside lane)	Varies	22	10 (8 on bridge)	TxDOT RDM (2010), Ch. 3-2 / 3-6, Pg. 3-4 / 3-66, Tbl. 3-1 / 3-18 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 35 / 36 Per Schematic
Proposed Auxiliary Lane Width (ft)	12	-	-	12	12	-	-	-	TxDOT RDM (2010), Ch. 2-6, Pg. 2-44
Shoulder Width inside (1 lane-in each direction) (ft)	-	4	4	-	-	-	-	2	TxDOT RDM (2010), Ch. 3-6, Pg. 3-66, Tbl. 3-18 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 35 / 36 Fig. 17 Per Schematic

290E TOLL PROJECT DESIGN CRITERIA									
CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
Shoulder Width inside (2 lanes-in each direction) (ft)	10	4	4	Transition 10' to existing	-	-	-	2	TxDOT RDM (2010), Ch. 3-6, Pg. 3-66, Tbl. 3-18 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 35 / 36 Fig. 17 Per Schematic
Shoulder Width inside (3 lanes-in each direction) (ft)	10	-	-	-	-	-	-	-	TxDOT RDM (2010), Ch. 3-6, Pg. 3-66, Tbl. 3-18 Per Schematic
Shoulder Width Outside (ft)	10	8	8 (des.), 6 (min.)	Transition 10' to existing	-	-	-	2	TxDOT RDM (2010), Ch. 3-6, Pg. 3-66, Tbl. 3-18 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 35 / 36 Fig. 17
Curb offset (ft)	-	-	-	-	2	2	-	-	TxDOT RDM (2010), Ch. 3-2, Pg. 3-4, Tbl. 3-1
Cross Slope Traffic Lanes (%)	2.5	2	2	2	2	2	-	2	TxDOT RDM (2010), Ch. 2-6, Pg. 2-40; Ch. 3-6, Pg. 3-94 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 38 Per Schematic

290E TOLL PROJECT DESIGN CRITERIA									
CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
Cross Slope Inside Shoulder (%)	2.5	2	2	2	-	-	-	16.67 (max)	TxDOT RDM (2010), Ch. 2-6, Pg. 2-41 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 35 / 36 Per Schematic
Cross Slope Outside Shoulder (%)	2.5	2	2	2	-	-	-	16.67 (max)	TxDOT RDM (2010), Ch. 2-6, Pg. 2-41 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 35 / 36 Per Schematic
Distance Between Successive Ramps - Entrance Ramp Followed by Exit Ramp with Auxiliary Lane (ft)	1500 (measured from nose of gore to nose of gore)	-	-	-	-	-	-	-	TxDOT RDM (2010), Ch. 3-6, Pg. 3-93
Distance Between Successive Ramps - Entrance Ramp Followed by Exit Ramp without Auxiliary Lane (ft)	2000 (measured from nose of gore to nose of gore)	-	-	-	-	-	-	-	TxDOT RDM (2010), Ch. 3-6, Pg. 3-93

290E TOLL PROJECT DESIGN CRITERIA									
CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
Distance Between Successive Ramps – Exit Ramp Followed by Exit Ramp without Auxiliary Lane (ft)	1000 (measured from back of gore to back of gore)	-	-	-	-	-	-	-	TxDOT RDM (2010), Ch. 3-6, Pg. 3-93

290E TOLL PROJECT DESIGN CRITERIA

CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
ROADSIDE FEATURES									
Border width (from the roadway to the right-of-way line)	-	-	-	-	20	20	-	-	TxDOT RDM (2010), Ch. 3-2, Pg. 3-4, Tbl. 3-1
Sidewalk (Yes/No), width (ft)	No	No	No	No	Yes, 6	Yes, Varies	-	-	TxDOT RDM (2010), Ch. 2-6, Pg. 2-45
Sidewalk – Cross slope (%)	-	-	-	-	1.5, 2 (max.)	1.5, 2 (max.)	-	-	TxDOT RDM (2010), Ch. 2-6, Pg. 2-46
Ditch front slope – maximum (V:H)	1:4 (des.) 1:3 (max.)	1:4 (des.) 1:3 (max.)	1:4 (des.) 1:3 (max.)	1:4 (des.) 1:3 (max.)	1:4 (des.) 1:3 (max.)	1:4 (des.) 1:3 (max.)	-	1:6	TxDOT RDM (2010), Ch. 2-6, Pg. 2-42 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 36 Per Schematic
Ditch front slope – usual (V:H)	1:6	1:6	1:6	1:6	1:6	1:6	-	1:6	TxDOT RDM (2010), Ch. 2-6, Pg. 2-42 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 36
Ditch back slope – maximum (V:H)	1:4	1:4	1:4	1:4	1:4	1:4	-	-	TxDOT RDM (2010), Ch. 2-6, Pg. 2-42
Commercial Maximum Driveway Grade (%)	-	-	-	-	6	6	-	-	TxDOT RDM (2010), Appendix C, Pg. C-13
Residential Maximum Driveway Grade (%)	-	-	-	-	12, 6 (des.)	12, 6 (des.)	-	-	TxDOT RDM (2010), Appendix C, Pg. C-13

290E TOLL PROJECT DESIGN CRITERIA

CRITERIA	MAINLANES	DIRECT CONNECTORS	RAMPS	TEMPORARY TRANSITION	FRONTAGE ROADS	CROSS-ROADS	U-TURNS	SHARED – USE PATH	REFERENCE
Functional Classification	Urban Freeway	SH 130 DC	Urban Freeway	Urban Freeway	Urban Arterial	Varies	Turn-Around	Shared-Use Path	Per Schematic
Design Speed (mph)	70	50	50	50	45	Varies	15	20	Per Schematic
Horizontal Clearances (Clear Zone) (Uncurbed) (ft)	30	10	16	30	10	10	-	3 (min.)	TxDOT RDM (2010), Ch. 2-6, Pg. 2-52, Tbl. 2-11 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 36
Horizontal Clearances (Clear Zone) (Curbed & Gutter) (ft)	-	-	10	30 (des) 20 (min)	3 (des.), 1.5 (min.)	3 (des.), 1.5 (min.)	-	-	TxDOT RDM (2010), Ch. 2-6, Pg. 2-52, Tbl. 2-11
VERTICAL CLEARANCE									
Height of Vertical Clearance Required over Roadway (ft)	16.5	16.5	16.5	16.5	16.5	16.5	16.5	10	TxDOT RDM (2010), Ch. 3-2, Pg. 3-4, Tbl. 3-1; Ch. 3-6, Pg. 3-64 AASHTO Bicycle Guide (1999), Ch. 2 Design, Pg. 36
Height of Vertical Clearance Required under Roadway when Crossing Railroad Tracks (ft)	23 (min.)	N/A	23 (min.)	-	23 (min.)	23 (min.)	23 (min.)	23 (min.)	TxDOT Bridge Project Development Manual (2008) Ch. 3-2, Pg. 3-18 TxDOT RDM (2010), Ch. 3-6, Pg. 3-65, Fig. 3-16
Height of Vertical Clearance Required over Roadway and under Overhead Signs and Pedestrians Crossovers (ft)	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	GEC
Footnotes...									
RDM – Roadway Design Manual (May 2010)									

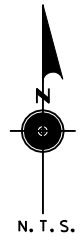
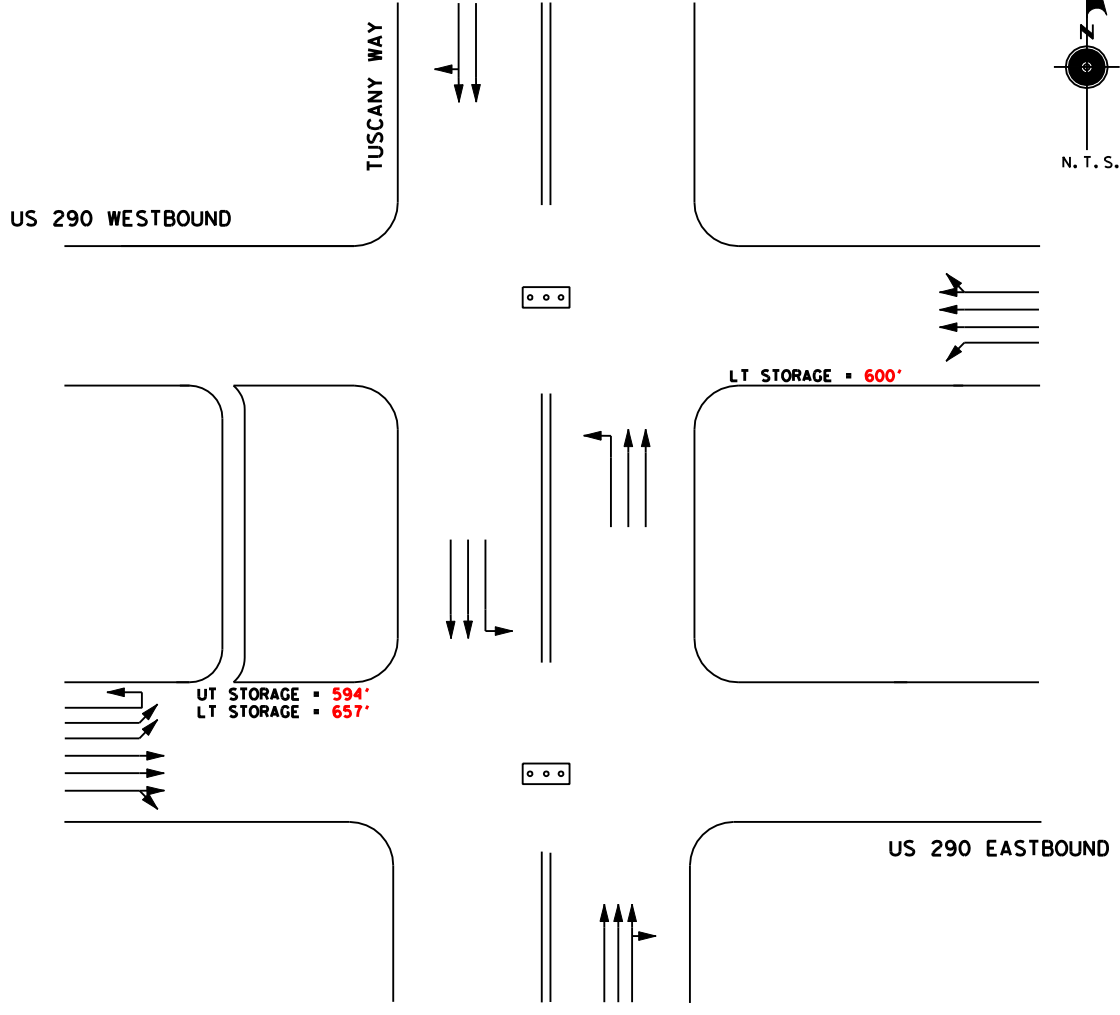
290E CROSS-ROAD TABLE

Cross-road	Functional Class	Design Speed [mph]	SSD [ft]	Min R (e max) [ft]	Min R (NC) [ft]	Max Rel. Gradient [%]	Max Grade [%]	K Crest	K Sag	Design Turning Vehicle
Tuscany Way	Urban Arterial	45	360	665	940	0.54	7	61	79	WB-62
Springdale Rd	Urban Collector	35	250	345	465	0.62	8	29	49	WB-62
Ferguson Cutoff	Local	30	200	230	300	0.66	8	19	37	WB-40
Chimney Hill	Urban Local	30	200	230	300	0.66	< 15	19	37	WB-40
Arterial "A"	Urban Arterial	45	360	665	940	0.54	7	61	79	WB-62
Reservoir Ct	Urban Local	30	200	230	300	0.66	8	19	37	WB-40
Johnny Morris Rd/Giles Rd	Urban Arterial	45	360	665	940	0.54	7	61	79	WB-62
Crofford Ln	Urban Local	30	200	230	300	0.66	8	19	37	WB-40
Harris Branch Pkwy	Urban Arterial	45	360	665	940	0.54	7	61	79	WB-62
Blue Goose Rd	Urban Local	30	200	230	300	0.66	< 15	19	37	WB-40
Decker Ln	Urban Arterial	45	360	665	940	0.54	7	61	79	WB-62
Parmer Ln	Urban Arterial	45	360	665	940	0.54	7	61	79	WB-62

PROPOSED TURNING BAY STORAGE LENGTHS

The following figures indicate the turning bay storage lengths that will be provided at the intersections of these cross-streets:

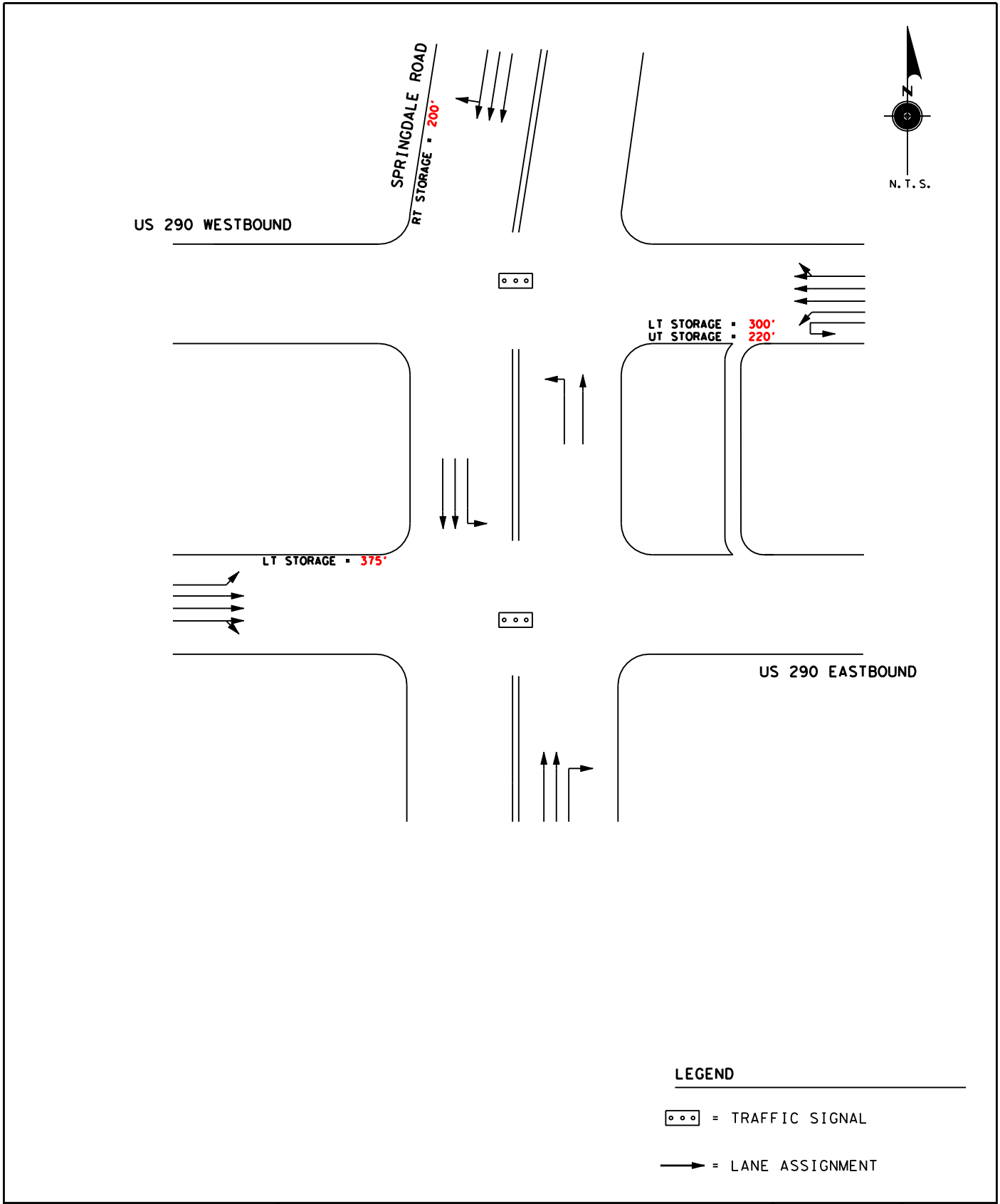
- Tuscany Way
- Springdale Road
- Arterial A
- Giles Road
- Harris Branch
- SH 130
- Parmer Lane



LEGEND

- = TRAFFIC SIGNAL
- = LANE ASSIGNMENT

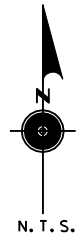
<p>290E AUSTIN, TEXAS</p>	<p>US 290 AT TUSCANY WAY 290E RECOMMENDED INTERSECTION GEOMETRY</p>	<p>DATE 7/29/2010</p>	<p>FIGURE 1</p>
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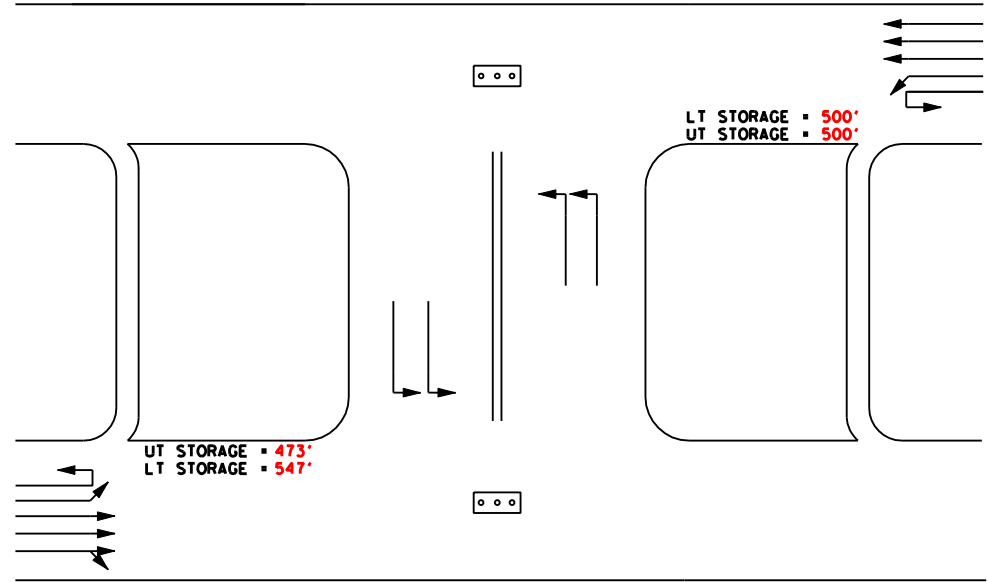
LEGEND

- = TRAFFIC SIGNAL
- = LANE ASSIGNMENT

<p>290E AUSTIN, TEXAS</p>	<p>US 290 AT SPRINGDALE RD 290E RECOMMENDED INTERSECTION GEOMETRY</p>	<p>DATE 9/2/2010</p>	<p>FIGURE 2</p>
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US 290 WESTBOUND



US 290 EASTBOUND

LEGEND

☐☐☐ = TRAFFIC SIGNAL

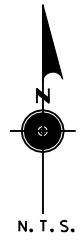
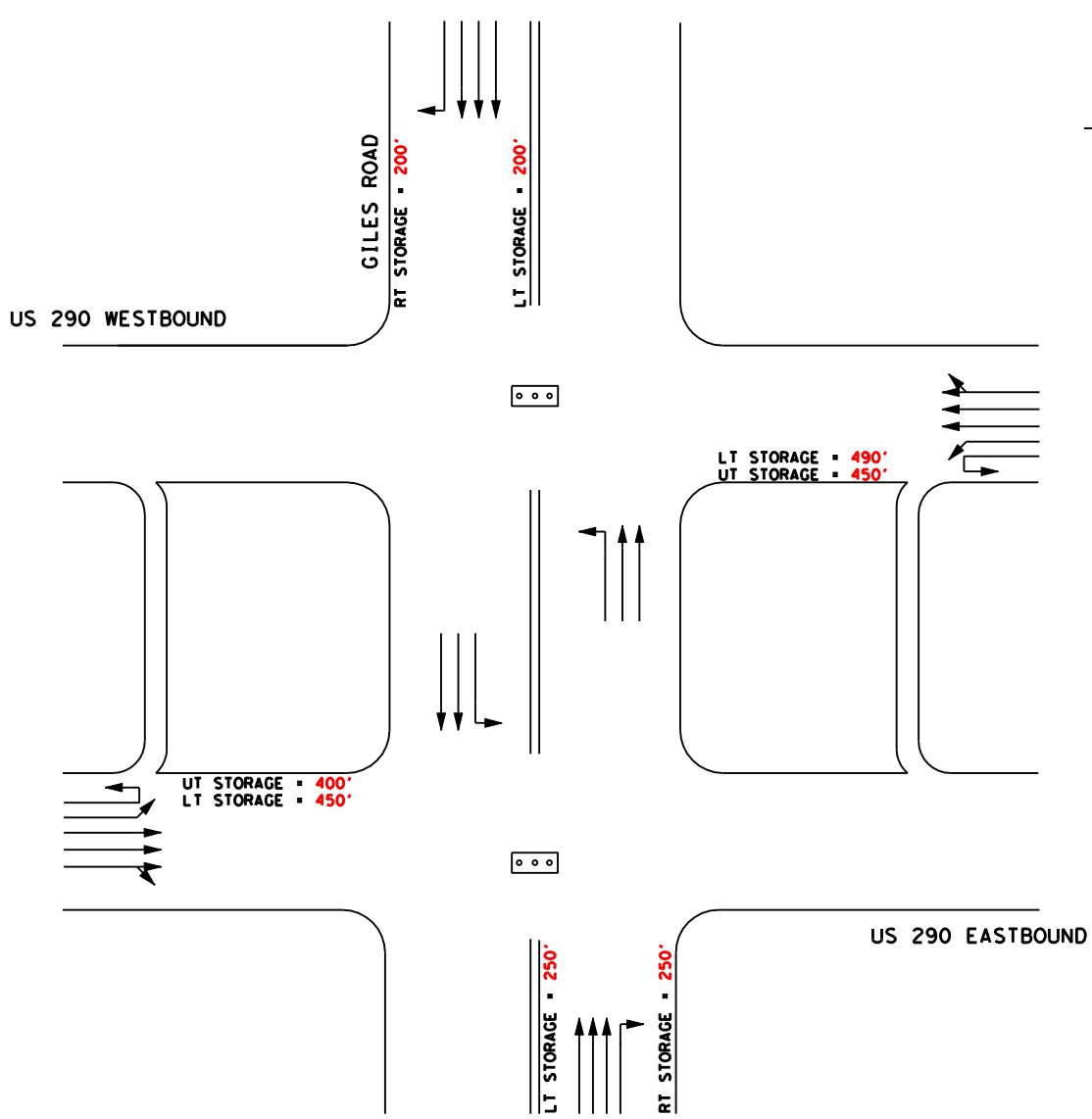
→ = LANE ASSIGNMENT

290E
AUSTIN, TEXAS



US 290 AT ARTERIAL A
290E RECOMMENDED INTERSECTION GEOMETRY

DATE
7/29/2010

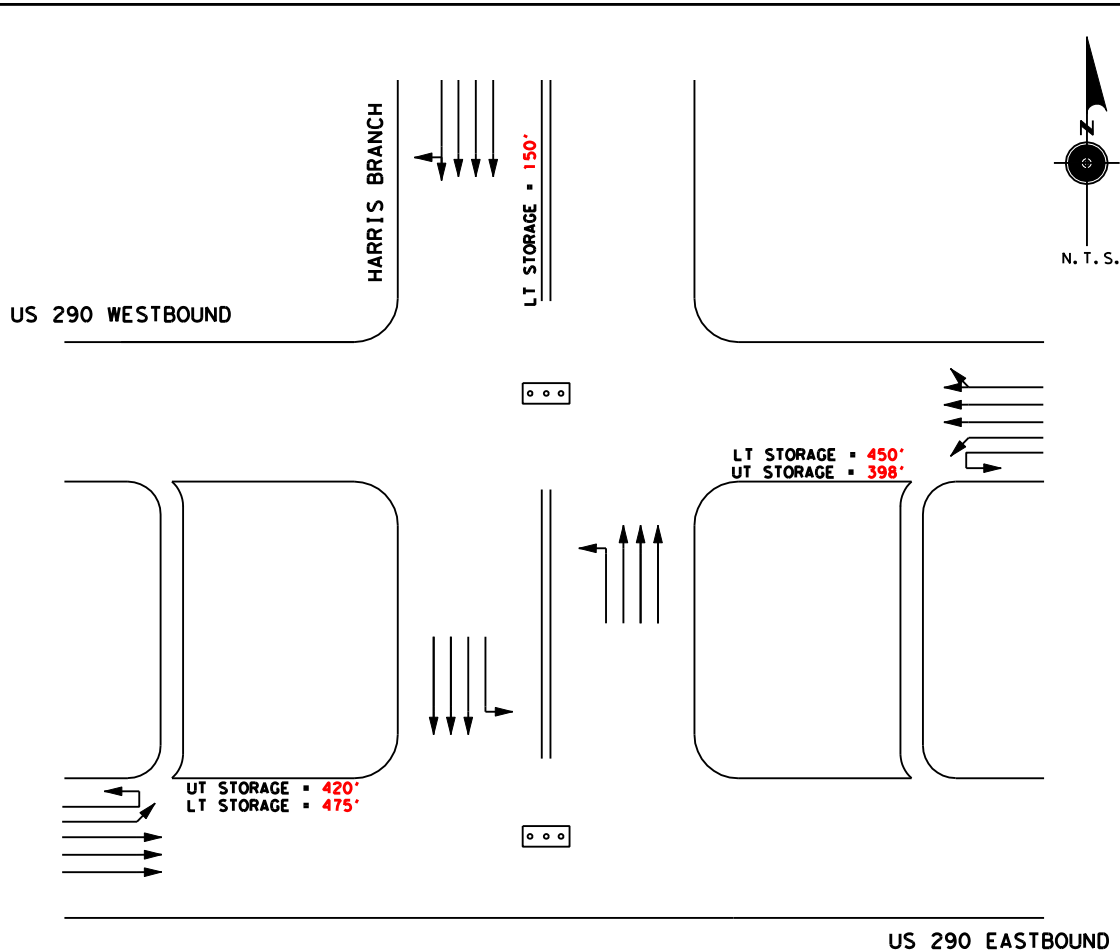
FIGURE
3



LEGEND

-  = TRAFFIC SIGNAL
-  = LANE ASSIGNMENT

<p>290E AUSTIN, TEXAS</p>	<p>US 290 AT GILES ROAD 290E RECOMMENDED INTERSECTION GEOMETRY</p>	<p>DATE 7/29/2010</p>	<p>FIGURE 4</p>
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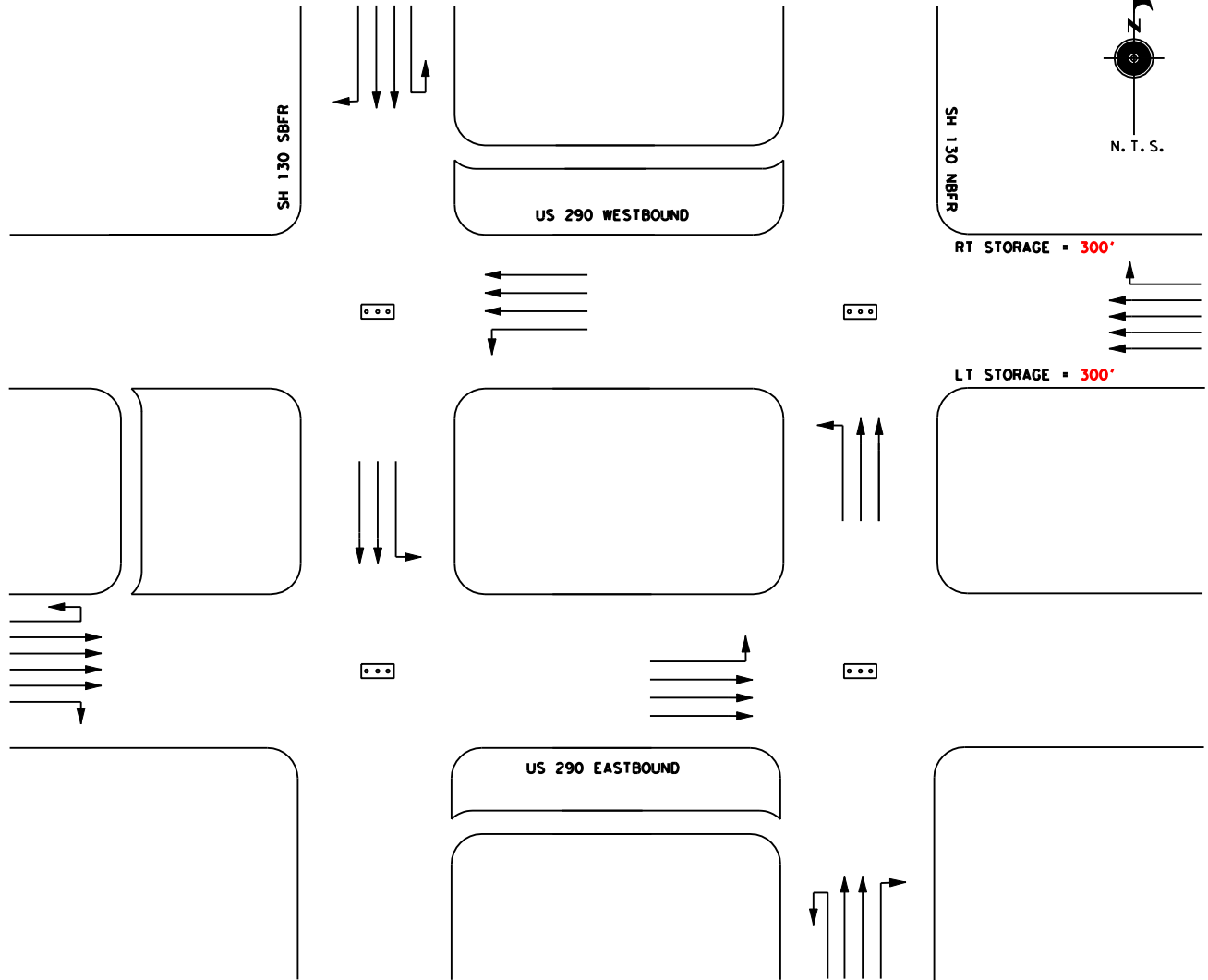


LEGEND

☐☐☐ = TRAFFIC SIGNAL

→ = LANE ASSIGNMENT

<p>290E AUSTIN, TEXAS</p>	<p>US 290 EAST AT HARRIS BRANCH 290E RECOMMENDED INTERSECTION GEOMETRY</p>	<p>DATE 7/29/2010</p>	<p>FIGURE 5</p>
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LEGEND

☐☐☐ = TRAFFIC SIGNAL

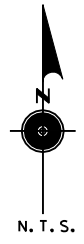
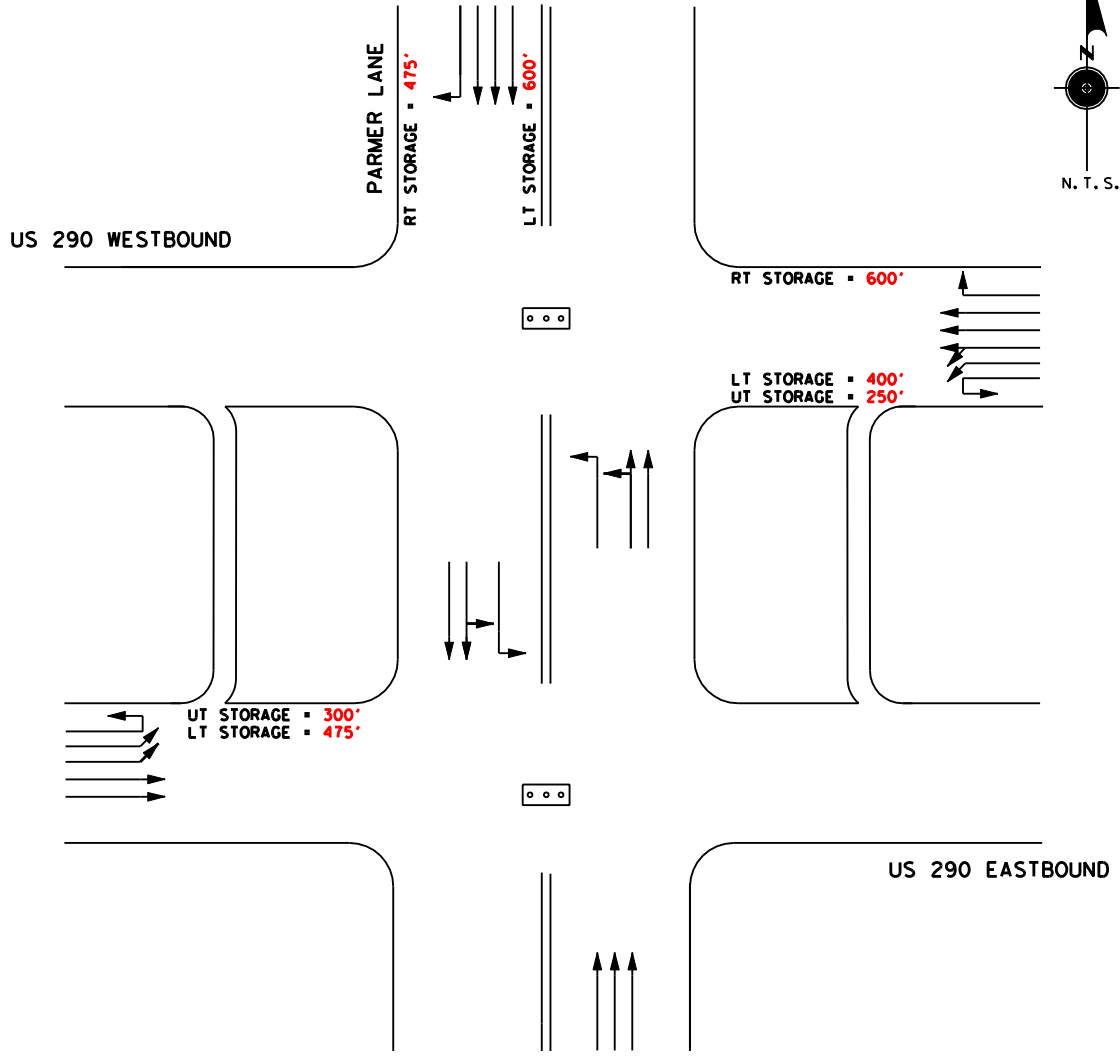
→ = LANE ASSIGNMENT

290E
AUSTIN, TEXAS

US 290 EAST AT SH 130
290E RECOMMENDED INTERSECTION GEOMETRY

DATE
7/29/2010

FIGURE
6



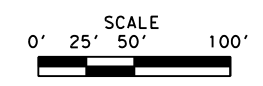
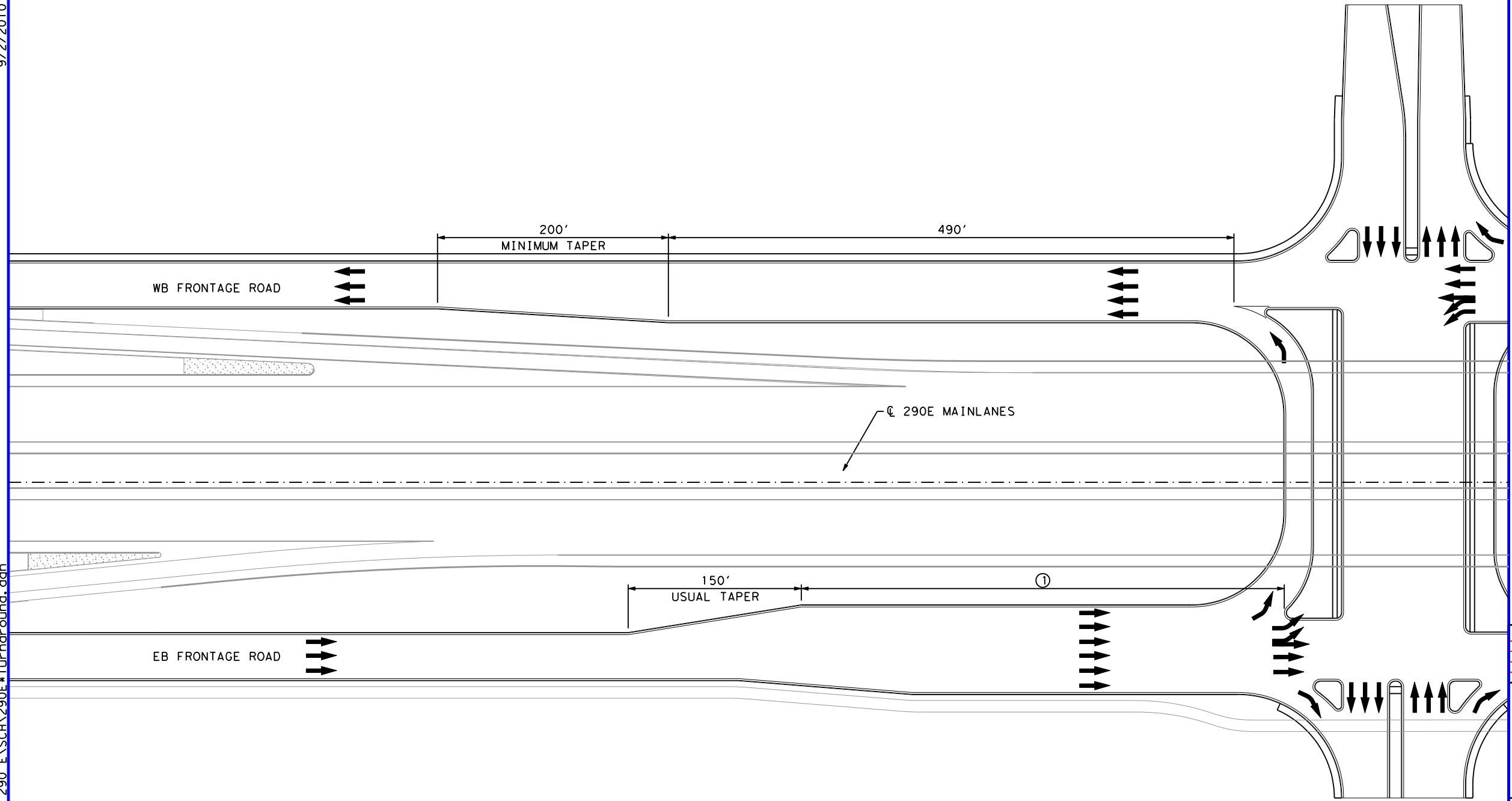
LEGEND

◻◻◻ = TRAFFIC SIGNAL

→ = LANE ASSIGNMENT

<p>290E AUSTIN, TEXAS</p>	<p>US 290 EAST AT PARMER LANE 290E RECOMMENDED INTERSECTION GEOMETRY</p>	<p>DATE 7/29/2010</p>	<p>FIGURE 7</p>
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PLT - RD*Scro11*PDF.plt
 PEN TABLE - PLOTDR, TBL
 R:\Trans-CTRMA\3000 CAD\3100 US 290 E\SCH\290E*Turnaround.dgn
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① TURNAROUND STORAGE LENGTH

INTERSECTION	EB	WB
TUSCANY WAY	594	
SPRINGDALE ROAD		220
ARTERIAL A	478	500
GILES ROAD	400	450
HARRIS BRANCH PKWY	420	398
PARMER LANE	300	250

NO	DATE	REVISION	APPROVED

PRELIMINARY
 SUBJECT TO CHANGE



290E TURNAROUND DETAILS

SHEET 1 OF 1 SHEETS

DESIGNED BY:	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
DRAWN BY:	STATE	DIST.	COUNTY
CHECKED BY:	CONT.	SECT.	JOB HIGHWAY NO.

PROPOSED HYDRAULIC ELEMENTS

A. Design frequency

Notes:

Table shown below is in the TxDOT Hydraulic Design Manual

Shaded boxes denote recommended design frequencies.

When multiple design frequencies are given, select a frequency by checking a box ().

Federal law requires interstate highways to be provided with protection from the 50-year flood event, and facilities such as underpasses and depressed roadways where no overflow relief is available should be designed for the 50-year event.

Functional Classification and Structure Type	Design Frequency (years)					Check 100-yr Flood?
	2	5	10	25	50	
Freeways (main lanes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Culverts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	yes
Bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	yes
Principal arterials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Culverts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	yes
Small bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	yes
Major river crossings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	yes
Minor arterials and collectors (including frontage roads)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Culverts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	yes
Small bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	yes
Major river crossings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	yes
Local roads and streets (off-system projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Culverts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	yes
Small bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	yes
Storm drain systems						
Interstate and controlled access highways (main lanes)						yes
inlets and drain pipe	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	yes
inlets for depressed roadways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	yes
Other highways and frontage						
inlets and drain pipe	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	yes
inlets for depressed roadways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	yes
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PROPOSED HYDRAULIC ELEMENTS (continued)

- B. If design frequency is other than TxDOT guidelines, where it is to be used and the reason (e.g., to use in designing off system facilities or to comply with FEMA requirements) Off-system local road
Off-system local road drainage that is part of this project will be designed per the local community's regulations unless otherwise specified by the Austin District Hydraulic staff.
- C. Comments on special hydrologic considerations (e.g. Basin is regulated by reservoirs, unit hydrograph and routing techniques in HEC-HMS used in lieu of regression equations)
Unit hydrograph and routing techniques in HEC-HMS used in lieu of regression equations
- D. Safety end treatment proposed
 Parallel drainage structures SET (Safety End Treatment)
 Cross drainage structures Wingwalls & SET (Safety End Treatment) for smaller crossings
- E. Will outfall channels be provided? yes no
 If yes, by whom? D/B CDA Developer
- F. Will outfall channels be maintained by others? yes no
 If yes, by whom? CTRMA and/or local community drainage easements
- G. Will others have to approve hydraulic design? yes no
 If yes, by whom? CTRMA and TxDOT will provide approval. Coordination with local community floodplain administrators will be facilitated by CTRMA
- H. Will others participate in funding hydraulic structures (e.g., joint ditch agreements with railroads)?
 yes no
 If yes, who? _____
- I. For storm drain design, is there potential for future development that may redirect flows normally away from the project back to the project? yes no
 If yes, will the actual "modified" contributing drainage area be used if known or will an estimate of a 150' wide area be used instead when the actual modification is not known?

- J. Will pump stations be required? yes no
 If yes, approximate locations _____
- K. Is this an evacuation route where roadway elevation is critical? yes no
 If yes, explain _____
- L. Is the design of any special drainage facility required? yes no
 If yes, explain Detention pond; and other mitigation improvements for flood control may be required
and is explained in the scope of work.
- M. Which hydraulic programs will be required for analysis? GEOPAK Drainage, HEC-RAS, HEC-HMS, HY-8, Winstorm
- N. Are flood insurance study streams within project limits? yes no
 If yes, which streams and what type of map is designated (e.g. Flood Hazard and Boundary Map)?
Zone A & Zone AE

PROPOSED HYDRAULIC ELEMENTS (continued)

O. Informal FEMA coordination should always be initiated early in project development to identify any pertinent issues such as the availability or loss of the accumulative 1-foot rise to previous development. Has the informal FEMA coordination revealed any special issues that may require formal coordination (e.g., such as a no remaining rise or the presence of a designated floodway)? yes no

P. Is there any existing development in the floodplain that may be impacted at any stage by changes (no matter how small) brought about by the project, regardless of whether the project meets FEMA standards? yes no

Allowable Ponding Widths:

Classification	Allowable Ponding Widths
Main lanes	Shoulder (10 ft)
Frontage roads	Outside Lane (15.5 ft)
Ramps	Allow safe passage of one lane of traffic (14 ft)
Side streets	Allow safe passage of one lane of traffic

R. Minimum Pipe Size: 18 inches

ATTACHMENT 21

Central Texas Regional Mobility Authority

Toll Systems & ITS Responsibility Matrix

LEGEND		Work Description		
Primary Responsibility	A	1	2	3
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	D/B CDA Developer (D/B)			System Integrator (SI)			Comments Other Responsibility/Information
	1	2	3	1	2	3	
FACILITIES							
Toll Plaza Layout	A	A	A	B	D	D	SI to provide system design. D/B to incorporate into Project Design. Preliminary design provided in existing design plans
Metered power service to ILP	A	A	A	B	D	C	SI to provide power requirements and special requirement for construction of utilities near toll collection point.
Complete backup power systems: generators, automatic transfer switches, and fuel tanks	C	D	B	A	A	A	
Foundation and conduits for backup power systems	A	A	A	B	D	D	D/B to provide foundations and conduits between foundations
Uniform Uninterruptible Power Supplies	C	C	C	A	A	A	
Lightning Protection & Grounding	A	A	A	B	C	C	
Duct Bank	A	A	A	B	D	C	D/B to install conduit Duct Bank complete with pull strings
Fiber Optic cables in Duct Bank for Toll Systems and ITS components	C	D	B	A	A	A	
Data/Communication service to ILP	C	D	B	A	A	A	SI to provide system design plans indicating power and communication/data requirements, D/B to install up to the ILP at demark panel.
Data/Communication wire/fiber from ILP to equipment	C	C	C	A	A	A	SI to install from ILP to equipment.

ATTACHMENT 21

Central Texas Regional Mobility Authority

Toll Systems & ITS Responsibility Matrix

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Primary Responsibility	A	1	2	3
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	D/B CDA Developer (D/B)			System Integrator (SI)			Comments Other Responsibility/Information
	1	2	3	1	2	3	
Pavement, inclusive of special nonferrous zones and conduit stub outs for in pavement sensors	B	A	A	B	D	C	SI to provide any special requirements for pavement design
Pavement sensors	C	C	C	A	A	A	SI to saw cut and install pavement sensors
Gantries including special framing for equipment mounts	A	A	A	B	D	C	SI to provide requirements for specific equipment mounts, conduits, J boxes, power and data wiring. Developer to incorporate into Structural Design
Equipment mounts on Gantries	B	D	C	A	A	A	SI to install any required equipment mounts on gantries. SI to coordinate with D/B during the design phase to incorporate any required framing to support equipment mounts.
ILP and roadside cabinet slabs	A	A	A	B	D	C	SI to provide requirements for size of slab needed.
ILPs and roadside cabinets (including HVAC systems)	B	D	C	A	A	A	SI to install complete
Lane Controller Hardware	D	D	D	A	A	A	
Communication Equipment	D	D	D	A	A	A	
ELECTRONIC TOLL COLLECTION SUB-SYSTEMS (ETC)							
Installation/Electrical Design and Plans	C	D	C	A	A	A	
Automatic Vehicle Classification System and Image Capturing System (ICS) Hardware	C	C	C	A	A	A	D/B to provide junction boxes and conduits, SI to install all power and data cable and install equipment
In Lane Processing Building Equipment	D	D	D	A	A	A	

ATTACHMENT 21

Central Texas Regional Mobility Authority

Toll Systems & ITS Responsibility Matrix

LEGEND		Work Description		
Primary Responsibility	A	1	2	3
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	D/B CDA Developer (D/B)			System Integrator (SI)			Comments Other Responsibility/Information
	1	2	3	1	2	3	
Computer rack system, routers, hubs, switches, firewalls, VPN, modems, patch/distribution panels,	D	D	D	A	A	A	
Toll Plaza Host Computer	D	D	D	A	A	A	
Back-up Host Computer	D	D	D	A	A	A	
Support equipment at CTRMA admin offices	D	D	D	A	A	A	
Workstations/Printers	D	D	D	A	A	A	
Commissioning and Operational Testing	D	D	C	A	A	A	
Lane controller software	D	D	D	A	A	A	
Plaza Computer Software	D	D	D	A	A	A	
Host Computer Software	D	D	D	A	A	A	
Toll Collection System Application Software	D	D	D	A	A	A	
Security Access System Software	D	D	D	A	A	A	
Maintenance Online Management System Software	D	D	D	A	A	A	
Factory Acceptance Test	D	D	D	A	A	A	
Project Acceptance Test	D	D	D	A	A	A	
Training	D	D	D	A	A	A	
Documentation	D	D	D	A	A	A	
FCC Licenses/Regulations as applies to toll systems	B	D	D	A	A	A	SI to procure process and initiate all required documentation, applications, permits and licenses as required permitting the CTRMA the right to use and or operate equipment and components.
Tolling location phone service	A	A	A	B	C	C	

ATTACHMENT 21

Central Texas Regional Mobility Authority

Toll Systems & ITS Responsibility Matrix

LEGEND		Work Description		
Primary Responsibility	A	1	2	3
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	D/B CDA Developer (D/B)			System Integrator (SI)			Comments Other Responsibility/Information
	1	2	3	1	2	3	
DUCT BANKS & INTELLIGENT TRANSPORTATION SYSTEMS (ITS)							
Duct Bank & ITS design	A	-	-	B	-	-	The D/B CDA Developer shall be responsible for the design of all ITS layouts, foundations, conduits, electrical services, grounding circuits, and support structures
Duct Bank & ITS systems design	B	-	-	A	-	-	The D/B CDA Developer shall coordinate with the SI and accommodate the SI's ITS systems design in the Project Design
Duct Bank	A	A	A	B	D	C	
Fiber optic cables	C	D	B	A	A	A	
CCTV Camera foundations, conduits, grounding, camera poles, and electrical services	A	A	A	B	C	C	
CCTV Camera, communications, and equipment enclosures	B	D	B	A	A	A	
DMS foundations, conduits, grounding, DMS support structures, and electrical services	A	A	A	B	C	C	
DMS, communications, and equipment enclosures	B	D	B	A	A	A	
Vehicle detectors foundations, conduits, grounding, vehicle detector support structures, and electrical services	A	A	A	B	C	C	
Vehicle detectors, communications, and equipment enclosures	B	D	B	A	A	A	

ATTACHMENT 21

Central Texas Regional Mobility Authority

Toll Systems & ITS Responsibility Matrix

LEGEND		Work Description		
Primary Responsibility	A	1	2	3
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	D/B CDA Developer (D/B)			System Integrator (SI)			Comments Other Responsibility/Information
	1	2	3	1	2	3	
Communication HUB enclosures support slab	A	A	A	B	C	C	
Communication HUB enclosures	B	D	B	A	A	A	

EXHIBIT C

TECHNICAL PROVISIONS

**Manor Expressway
290 East Toll Project
From US 183 to SH 130**

**A PROJECT OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

**CTRMA Office Address
301 Congress Avenue, Suite 650
Austin, Texas 78701**

**Addendum #2
January 25, 2011**

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1.0 PROJECT ADMINISTRATION AND MANAGEMENT

1.1 INTRODUCTION

The D/B CDA Developer shall perform in a manner consistent with the goals and direction of the CTRMA and the requirements of the Contract Documents. The primary management goals are to provide the public with a Project that:

Maintains public support

Produces an end product that is durable and of high quality

Limits adverse economic impacts

Provides a safe environment for the public and Project personnel

Meets the requirements of the Contract Documents

Is constructed on time and within CTRMA's established budget

Has as little impact on the environment as possible

Minimizes disruption of and impact on the existing traffic in the corridor during construction of the Project

1.1.1 General Requirements

D/B CDA Developer Responsibilities. The D/B CDA Developer shall:

Manage and administer the planning, execution, and control of all aspects of the Project, including coordinating all activities required to complete the Project in accordance with the Contract Documents.

Coordinate its activities with the CTRMA, members of the D/B CDA Developer team, Governmental Entities, and other entities that are directly or indirectly impacted by the Project.

Document and report the Project activities and progress in accordance with the requirements of the Contract Documents.

As required, re-submit documents in a timely manner and incorporate the re-submittals in the Project Schedule to document any possible schedule impacts.

Management Approach. The D/B CDA Developer's management approach shall provide all components of an effective and efficient management system, including (but not limited to):

Communication and reporting

Documentation of the Project

Create and update monthly a comprehensive critical-path method schedule reflecting the Project status

Supervision of Project personnel and activities

Procurement and the effective utilization of all tools, facilities, services, and materials

Environmental compliance, protection, and mitigation

Safety of Project personnel, motorists, and the general public

Any other management elements needed to produce and document a high-quality, safe, efficient, and operable Project that minimizes environmental impacts

Working Together. Communications shall be open between the CTRMA and the D/B CDA Developer, and both parties shall continually work together towards Project betterment. The staff at all levels shall continually seek opportunities to improve efficiency, and at the same time meet the goals and requirements of the Contract Documents. The D/B CDA Developer shall empower all levels of its organization to meet Project goals and the D/B CDA Developer's obligations.

1.1.2 Key Personnel

1.1.2.1 Key Personnel Positions

Key Personnel are the persons in the D/B CDA Developer's organization who are specified in the Proposal to be responsible for the following particular Project functions:

Category A:

D/B CDA Developer Project Manager *

Design Manager *

Construction Manager *

Utilities Manager*

Design Quality Control Manager (DQCM) #

Construction Quality Control Manager (CQCM) *

Traffic Control Supervisor *

Category B:

Environmental Compliance Manager (ECM) *

Senior Geotechnical Engineer #

Senior Design Engineer—Structures #

Senior Design Engineer—Roadways #

Senior Design Engineer—Drainage #

Senior Traffic Engineer #

Project Scheduler
Civil/Utility Engineer *
Project Superintendent *
Structures Superintendent *
Paving Superintendent *
Grading Superintendent *
Senior Construction Inspector – Roadway(QC) *
Senior Construction Inspector – Structures (QC) *
Senior Construction Inspector – Traffic (QC) *
Senior Construction Materials Testing Superintendent (QC) *

Those Key Personnel that will be required to be at the main Project office or field office for the duration of their assignment are marked with “*”.

Those Key Personnel that will be required to be at the main Project office for design reviews, workshops, over the shoulder reviews, and all design submittal reviews are marked with “#”. Any impacts to the CTRMA, TxDOT, or FHWA review times caused by the unavailability of Design/Build personnel shall add to CTRMA, TxDOT, or FHWA review times.

With Prior written consent from the CTRMA, D/B CDA Developer may designate one (1) individual to perform the function of a maximum of two (2) Key Personnel Positions.

1.1.2.2 Qualifications and CTRMA Approval

Qualifications. Key Personnel shall have the following qualifications:

- Experience in his or her appropriate field
- A work history relevant to the assigned area of Project responsibility
- The appropriate professional licenses and certifications

At a minimum, the following Key Personnel shall be Registered Professional Engineers in the State of Texas within 90 days after NTP:

- Design Manager
- Design Quality Control Manager (DQCM)
- Senior Geotechnical Engineer
- Senior Design Engineer, Structures
- Senior Design Engineer, Roadways
- Senior Design Engineer, Drainage
- Senior Traffic Engineer

Civil/Utility Engineer

1.1.2.3 Replacement of Key Personnel

The D/B CDA Developer shall notify the CTRMA at least twenty (20) Business Days in advance of a proposed replacement of any Key Personnel, and submit the name and qualifications summary of the proposed replacement to the CTRMA. The CTRMA will review the qualifications and may interview the proposed replacement. The CTRMA reserves the right to approve or reject, without cause, any proposed replacement, and will provide such written approval or rejection within twenty (20) Business Days after receipt of the qualifications documentation. If no response is provided within twenty (20) Business Days the proposed replacement shall be considered rejected.

1.1.2.4 Directory and Organization Chart

Key Personnel Directory. The D/B CDA Developer shall submit a directory that contains the following information for each Key Personnel: name, title (with respect to the Project), Project office address and location, e-mail address, telephone numbers (office, home, and cellular), and fax number. The directory shall be kept current throughout the course of the Project.

Organization Chart. The D/B CDA Developer shall monitor and provide periodically to the CTRMA a Project organization chart that graphically represents the hierarchy and functional interaction of the Key Personnel, and indicates the functional responsibilities of each.

1.1.3 Communication and Partnering

D/B CDA Developer Responsibility. The D/B CDA Developer shall establish the communication systems necessary to control all facets of the Project and maintain communications with the CTRMA, local stakeholders and Governmental Entities that have review and approval authority on the Project, including local and regional emergency response agencies or entities, per the requirement of the Contract Documents.

1.1.3.1 Coordination Meetings

Weekly Meetings. The D/B CDA Developer shall meet weekly with the CTRMA to discuss and coordinate the Project progress, issues, and planned work for all Project phases, including design, right-of-way acquisition, utilities relocation, permits and agreements, environmental compliance, and construction. The D/B CDA Developer and the CTRMA will jointly develop the agenda. The D/B CDA Developer shall provide the meeting facilities unless directed otherwise by the CTRMA. The D/B CDA Developer shall keep minutes of each coordination meeting and, within five (5) Business Days, distribute copies marked as "DRAFT" to CTRMA participants for their review and comments. Upon receipt of CTRMA comments, the D/B CDA Developer shall prepare final minutes and distribute copies to all participants within three (3) Business Days.

Other Meetings. In addition to the weekly meetings, the D/B CDA Developer and the CTRMA will meet as needed to discuss Project-related issues. The D/B CDA Developer will also attend monthly long-term strategy meetings with the CTRMA. The D/B CDA Developer shall keep minutes of each meeting and, within five (5) Business Days after the meeting, distribute copies marked as "DRAFT"

to CTRMA participants for their review and comments. Upon receipt of CTRMA comments, the D/B CDA Developer shall prepare final minutes and distribute copies to all participants within five (3) Business Days.

1.1.3.2 Monthly and Weekly Reports

Detailed reporting requirements for the Project are described in various sections of this RFDP.

1.1.3.3 Project Partnering

The CTRMA requires the use of partnering principles on this Project. A formal dispute resolution procedure will be created to assist in resolving any disagreements quickly and keep the Project moving forward on schedule.

Initial Workshop. A one (1) day facilitated workshop to set the process in motion and shall be held prior to the start of design. The content of the workshop will be determined cooperatively by the D/B CDA Developer and the CTRMA.

Attendees. All Category “A” Personnel listed on the D/B CDA Developer’s organizational chart, representatives from any major Subcontractor scheduled to work on the Project, and key personnel from the CTRMA and the CTRMA’s GEC. Other attendees may include representatives from the Texas Department of Transportation (**TxDOT**), Federal Highway Administration (**FHWA**), representatives from Utility companies involved with the Project, and other third parties.

Costs. All costs of providing the partnering workshop(s) shall be paid by the D/B CDA Developer.

1.1.4 D/B CDA Developer Subcontracts

Subcontracting Plan. Within twenty (20) Business Days after issuance of the NTP, the D/B CDA Developer shall provide the CTRMA its proposed Subcontracting Plan. The CTRMA will review the plan for consistency with the CTRMA’s requirements regarding Subcontracts and its disadvantaged business enterprise (DBE) policy, and then provide comments. The D/B CDA Developer shall promptly incorporate the CTRMA’s comments into the Subcontracting Plan and comply therewith. The approved Subcontracting Plan shall be updated monthly to reflect any changes to the D/B CDA Developer Subcontract agreements and submitted to the CTRMA for review. If no changes to the Subcontracting Plan have occurred, then the D/B CDA Developer shall so state in its monthly progress report to the CTRMA.

As a minimum, the Subcontracting Plan shall include D/B CDA Developer’s DBE Policy, Commitment and Program to meet their commitment along with a listing of each Subcontractor’s Name, Address, Phone Number, Contact Person, Scope of Work, Price or Fee, and DBE status.

Coordination. The D/B CDA Developer shall be solely responsible for scheduling and coordinating the work of Subcontractors, suppliers, Utility Owners, and other individuals or entities performing or furnishing any of the work under a direct or indirect contract with the D/B CDA Developer.

1.2 FACILITIES, OFFICE SPACE AND EQUIPMENT

1.2.1 General Requirements

D/B CDA Developer Responsibilities. The D/B CDA Developer shall, as part of the Project:

Provide and pay for all office and working space, facilities, equipment, services, and vehicles necessary for the D/B CDA Developer to manage, coordinate, and administer the design, construction, and maintenance of the Project in accordance with the Contract Documents.

Maintain the main Project office facilities for at least sixty (60) Days after Final Acceptance, or until otherwise agreed to by the CTRMA in writing.

After Final Acceptance, provide disposal or removal of all facilities and any site restoration needed for the Project.

Main Project Office. The D/B CDA Developer shall establish a main Project office and locate its Key Personnel, as required by Section 1.1.2.1 of this Technical Provision, in that office.

Main Project Office Location. The main Project office shall be located within a 5-mile radius of the Project. With Prior written approval from the CTRMA, the main Project office may be located greater than 5 miles from the Project.

Location of Design Firm. The CTRMA views the collocation of the Project Design team in the main Project office as a benefit to the Project. If the D/B CDA Developer performs a portion or all of the Project Design outside of the main Project office, the D/B CDA Developer's Project Management Plan (PMP) shall address the unique challenges associated with performing design off site.

1.2.2 CTRMA Project Office Space

CTRMA Project Office. To facilitate Project coordination and daily communication, the D/B CDA Developer shall designate a portion of the main Project office (within the same complex) as the CTRMA Project office, for the exclusive use of CTRMA and its consultant staff members.

CTRMA Project Office Space Deadline. The D/B CDA Developer shall provide the CTRMA Project office space (i.e., available for occupancy) within thirty Business Days after issuance of the NTP.

CTRMA Approval. The location, condition, furniture, and amenities of the CTRMA Project office are subject to the CTRMA's prior written approval.

CTRMA Project Office Condition. The office facilities, furniture, and equipment for the CTRMA shall be provided by the D/B CDA Developer and shall be in good and serviceable condition (at least of the same quality as those of the Developer's main Project office). Both parties shall participate in a facility condition survey prior to and at the completion of occupancy. The CTRMA will return possession of the D/B CDA Developer-provided facilities to the D/B CDA Developer in essentially the same condition as when the CTRMA first occupied the facilities, except for reasonable wear and tear and except for alterations, loss, or damage caused by the D/B CDA Developer.

CTRMA Project Office Space Requirements. The D/B CDA Developer shall, as part of the Project:

Secure a well-graded site that has an access road, a parking area, and building space that meets all local building code requirements.

Obtain all site permits.

Provide all utility services.

Provide a CTRMA parking area for at least twenty-five (25) vehicles that is reasonably level and has an all-weather surface and all-weather access.

Provide at least two building entrance/exits, each secured with a door lock plus a dead-bolt lock. CTRMA space shall be separated by lockable doors from the Developer's space.

Ensure that the site and main Project office facilities meet all access requirements of the Americans with Disabilities Act (ADA), as amended (42 USC §§12101, *et seq.*).

CTRMA Field Offices. If the D/B CDA Developer's construction office is not at the main Project office, the D/B CDA Developer shall provide a separate office, in a configuration approved by the CTRMA. This facility shall serve as a CTRMA field office and shall be located in close proximity to the D/B CDA Developer's construction office.

The D/B CDA Developer shall also provide a separate office, in a configuration approved by the CTRMA, at the Asphaltic Concrete Production site. This facility shall serve as an Asphalt Mix Control Laboratory. This Laboratory will generally comply with Item 504 – Type C Structure (Asphalt Mix Control Laboratory) for Construction Inspectors as specified in the TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* 2004 Edition including a dedicated T-1 telephone line for the CTRMA's sole use.

1.2.3 CTRMA Project and Field Office Services and Systems

Office Services and Systems Requirements. For all offices provided by the D/B CDA Developer, the D/B CDA Developer shall provide and pay for:

Potable water and sewer service

Electricity service and interior overhead lighting that meet OSHA standards and building and electrical code requirements for office space, with minimum electrical circuit capacity of twenty (20) amperes and with at least two (2) duplex electrical receptacles in each personal office area

Heating, ventilation, and cooling systems capable of maintaining temperatures between 65 and 70 degrees Fahrenheit in all spaces throughout the year

Daily janitorial service (except on Saturdays, Sundays and Holidays), including maintenance of trash containers and trash pickup service

Maintenance of the exterior areas, including the access to parking areas, that keeps them neat, clean, in good repair, and safe

Exterior security lighting that is automatically activated at low light levels to maintain at least two (2) foot-candles of lighting within the fenced office site

Dedicated T-1 telephone lines for the CTRMA's sole use, including monthly service charges
Telephone service with at least one (1) outside line (with voice-mail service) for each person assigned to the office and at least one (1) line dedicated to fax service

Calling Charges. After installation of the telephone service, the CTRMA will pay for its own local and long-distance telephone calling charges.

1.2.4 CTRMA Office Space Requirements

Office Space Requirements. The CTRMA Project office space provided by the D/B CDA Developer, inclusive of space at the main Project office and the field office, shall include the following elements:

Two enclosed offices (of at least 225 sq ft each)

- These offices shall be located at the main Project office.

16 cubicles (of at least 100 sq ft each)

- If the D/B CDA Developer's construction office is not at the main Project office, 8 cubicles shall be located at the main Project office and 8 cubicles shall be located at the CTRMA field office.

One enclosed conference room (of at least 400 sq ft)

One enclosed conference room (of at least 200 sq ft) for CTRMA's sole use

Two lockable enclosed spaces for storage/filing (combined areas, at least 150 sq ft)

An enclosed lockable space for storage of equipment (of at least 150 sq ft)

Two restrooms (one each for men and women) that include toilets and sinks (sized appropriately for an office of 20 people)

A combination break and lunch room area with sink, refrigerator, and microwave (of at least 200 sq ft)

1.2.5 CTRMA Office Equipment

The D/B CDA Developer shall provide, install, and maintain the following equipment (in working order) for the Project and field offices.

1.2.5.1 Specific Requirements for Phone Service Telephones

At least one (1) touch-tone telephone for each CTRMA office space, each with a status indicator, access to all outside lines, and conference-call capability; and including speakers for the telephones.

Copier and Fax Equipment for Project office

One (1) high-speed color printer capable of handling 11x17 prints

One (1) high-speed photocopy machine and one (1) facsimile transmission machine for CTRMA staff only and not to be shared with D/B CDA Developer or any other staff

Access to a full-scale plotter and color copier printer (may be shared with D/B CDA Developer if located in adjacent office space within the same building).

Copier and Fax Equipment for field office

One (1) high-speed color printer capable of handling 11x17 prints

One (1) high-speed photocopy machine and one (1) facsimile transmission machine for CTRMA staff only and not to be shared with D/B CDA Developer or any other staff

1.2.5.2 Loss or Damage to CTRMA Office(s)

D/B CDA Developer Responsibility. If any D/B CDA Developer-provided office space, facility, or equipment is damaged, destroyed, or stolen during the Project duration, the D/B CDA Developer shall (at its own expense, except as noted herein) repair it, replace it, and/or otherwise restore it to its original condition within five (5) Business Days after the occurrence of such damage or loss.

CTRMA Responsibility. If any loss or damage has been caused as a direct result of willful misconduct of CTRMA personnel or its consultant staff, the CTRMA will reimburse the D/B CDA Developer for the actual, reasonable, and documented costs of the repair, replacement, and/or restoration prior to Final Acceptance.

1.3 PROJECT RECORDS

General Requirements. The D/B CDA Developer shall be responsible for documentation of all Project activities.

Specific Requirements. This *Section* is general in nature and applies to all Project activities. For specific documentation requirements related to a specific Project element, refer to the pertinent subsections of the Scope of Work (*Exhibit B*) and Technical Provisions (*Exhibit C*).

Submittals Receipt Date. All submittals to the CTRMA received after 1:00PM on any business day will be stamped received the following business day.

1.3.1 Documentation Media

All Project files shall be maintained in both the electronic medium (using the software programs specified in *Section 1.4 – Computer Software Requirements* and as hard copy.

1.3.2 Distribution of Communications

The D/B CDA Developer shall prepare and circulate to the CTRMA and other appropriate parties hard copies and electronic copies of all correspondence, minutes of meetings, and other external documents reflecting or constituting any and all communications with:

The CTRMA
TxDOT

Utility Owners
Communities
Governmental Entities and regulatory agencies
Businesses and Project stakeholders
Landowners
News Media

1.3.3 Electronic File Backups

All electronic files shall be backed up daily. The backup tapes, CD ROMs or other storage media shall be delivered weekly to a secure off-site storage area that has been approved in writing by the CTRMA. Electronic Data Management systems using Internet transfer and off-site storage may also be used with prior approval of the CTRMA.

1.3.4 Project Office Documentation

1.3.4.1 Design Communications and Submittals

Main Project Office Files. The D/B CDA Developer shall maintain at all times, at its main Project office, at least one (1) complete organized set of all documents related to the design of the Project, including (but not limited to) the following items:

- Master Contract Documents and agreements
- Design and construction Contract Documents and Subcontracts
- All other legal agreements and proceedings
- Design calculations and analyses
- Mix designs
- Reports, studies, and investigations
- Project Schedule
- Monthly pay request documentation
- Released-for-Construction plans, construction sketches, and diagrams
- Soil boring logs, laboratory test results, QC records and audits, etc.
- Communications (includes all written communications, such as correspondence, transmittal and other forms, e-mail messages, facsimile transmissions)
- Minutes of meetings
- Review comments from the CTRMA
- Governmental approvals
- Change orders and claims (including all related communications and disputes resolution proceedings)
- Insurance policies, correspondence, and terms

Submittal Media. All design communications, submittals and documentation (including in-process, final, and Record Drawings) shall be submitted to the CTRMA as both hard-copy printouts and electronic files, as indicated below.

Electronic Files. As a condition of the Final Acceptance, the D/B CDA Developer shall deliver one (1) complete electronic copy of all above-listed documents to the CTRMA for its retention and use at the completion of the Project. The detailed organization of the electronic files must be acceptable to the CTRMA. This submittal is to be complete and accurate and the D/B CDA Developer cannot rely on previous submittals to supplement this requirement.

1.3.4.2 Construction Communications and Submittals

Main Project Office Files. The D/B CDA Developer shall maintain at its main Project office at all times, and make available for CTRMA review at any time, at least one (1) complete organized set of all documents related to the construction and maintenance of the Project, including (but not limited to) the following items:

- Construction contracts
- Subcontracts and supplier contracts
- Change orders and claims
- Working drawings
- Shop drawings
- Pay requests
- Minutes of meetings
- Safety, injury, damage, and incident reports
- Hazardous material manifests
- Calculations
- Reports
- NCR's and RFI's
- Tests
- QC/QA records and audits
- Drawings (two (2) sets: one (1) unmarked "clean" set, and one (1) master copy set for Record Drawings control records)

Submittal Media. All construction communications, submittals and documentation (including in-process, final, and Record Drawings) shall be submitted to the CTRMA as both hard-copy printouts and electronic files, as indicated below.

Electronic Files. As a condition of the Final Acceptance, the D/B CDA Developer shall deliver one (1) complete electronic copy of all above-listed documents to the CTRMA for its retention and use at the completion of the Project. The detailed organization of the electronic files must be acceptable to the CTRMA. This submittal is to be complete and accurate and the D/B CDA Developer cannot rely on previous submittals to supplement this requirement.

1.3.5 Document Control

Document Control. The D/B CDA Developer shall establish and maintain an electronic document control system in accordance with this Section. Such system shall be compatible with the CTRMA system to allow sharing of documents. The system shall be able to export all documents, metadata and document index criteria into an aggregated spreadsheet or database file, which provides links to all of the project files with all associated metadata and index criteria available in the system. In general, the CTRMA uses Microsoft Office 2007 for document production and exchange.

Monthly Verification. The D/B CDA Developer shall develop a monthly certification form (subject to the approval of the CTRMA) that verifies compliance with the Project document control standards and practices identified within these Contract Documents. As part of the draw request and Project certification, this certification will be completed monthly, signed by the Design Quality Control Manager and the Construction Quality Control Manager and submitted to the CTRMA for its review and validation of the D/B CDA Developer's document control performance.

1.4 COMPUTER SOFTWARE REQUIREMENTS

1.4.1 General Guidelines

D/B CDA Developer Responsibilities. The D/B CDA Developer shall acquire, use, and maintain all of the computer software as specified in this Section.

Versions. The D/B CDA Developer shall use the current version of the specified software in effect as of NTP, unless specifically called out otherwise in this Section.

Updates. The D/B CDA Developer shall update their software programs throughout the term of the Agreement within six (6) months of release of a software update, unless otherwise mutually agreed to by the parties. Software updates shall receive prior approval from the CTRMA.

File Server. Data files for the applications included in this Section shall reside on the D/B CDA Developer's file server.

1.4.1.1 Required Project Software

The D/B CDA Developer shall use the software programs (in the latest available versions) for the Project as specified below.

1.4.1.2 Drawing Production

Bentley MicroStation 8.05.0235 for V8

1.4.1.3 Roadway Geometric Design

Bentley GEOPAK 8.08.0324 for V8

1.4.1.4 Drainage Design

Software shall be as proposed by the D/B CDA Developer, subject to approval of the CTRMA and any appropriate regulatory agencies. The software packages and technical advisories preapproved by the CTRMA are:

- CULVERT – Texas Hydraulic System Culvert Design
- GEOPAK Drainage
- HEC-1/HEC_HMS
- HEC-2/HEC-RAS
- HEC-11, -12, -13, -14, -15, and -18
- HY-8
- SCS TR-55
- WinStorm
- WSPRO

1.4.1.5 Geotechnical Design

Software shall be as proposed by the D/B CDA Developer, subject to approval of the CTRMA and any appropriate regulatory agencies. The software packages pre-approved by the CTRMA are:

- CAPWAP
- COM-624
- DRIVEN
- gINT
- GRLWEAP
- LPILE and LPILEPLUS
- WINCORE

1.4.1.6 Pavement Design

Software shall be as proposed by the D/B CDA Developer, subject to approval of the CTRMA and any appropriate regulatory agencies. The software packages pre-approved by the CTRMA are:

- DARWin (pavement design software)
- T SLAB
- FPS19

1.4.1.7 Structural Design

Software shall be as proposed by the D/B CDA Developer, subject to approval of the CTRMA and any appropriate regulatory agencies. The software packages pre-approved by the CTRMA are:

- B30

BGS-RDS Bridge
BMCOL51
BSDI
CAP 18
CONSPAN
LARSA
MDX
PCACOL
PSTRS14
RCPIER
PGSUPER
SPAN
STAAD
STLBRIDGE
STRUDL

1.4.1.8 Sign Design

Software shall be as proposed by the D/B CDA Developer, subject to approval of the CTRMA and any appropriate regulatory agencies. The software package pre-approved by the CTRMA is:

SignCAD

1.4.1.9 Traffic Modeling and Signal Design

Software shall be as proposed by the D/B CDA Developer, subject to approval of the CTRMA and any appropriate regulatory agencies. The software packages pre-approved by the CTRMA are:

CORSIM (complex signal coordination, queuing, and turn bay storage)
HCM/Cinema (signal capacity, cycle length, split timing, level of service [LOS])
Highway Capacity Software (by McTrans)
PASSER II-90 (by McTrans)
Traf Netsim (by McTrans)
Synchro/SimTraffic
TRANSYT-7F (signal coordination timing, including cycle length, phase sequence, and offsets)

1.4.1.10 Advanced Traffic Management System (ATMS) Design

Software shall be as proposed by the D/B CDA Developer, subject to approval of the CTRMA and any appropriate regulatory agencies. The software packages pre-approved by the CTRMA are:

ArcView (by ESRI)
ArcINFO
FREQ
Integration
MINUTP (by Comsis)

1.4.1.11 Architectural Plans

Software shall be as proposed by the D/B CDA Developer, subject to approval of the CTRMA and any appropriate regulatory agencies.

1.4.1.12 Bentley MicroStation 8.05.0235 for V8 Project Scheduling

Primavera Project Planner P6 (by Primavera Systems)

1.4.1.13 Computer-Aided Drafting and Design (CADD)

Bentley MicroStation 8.05.0235 for V8

1.4.1.14 Word Processing and Spreadsheets

The operating system must be compatible with the current CTRMA standard, which is currently Windows XP Pro Service Pack 3. Only those operating systems meeting current CTRMA standards will be acceptable; all computer equipment furnished with operating systems not meeting current CTRMA standards will be rejected.

The D/B CDA Developer shall use the following software:

Microsoft Office 2007 (Professional Edition) on CD with manuals

1.4.1.15 Construction Quality Control Inspection and Material Testing

Software shall be compatible with the CTRMA's needs and be approved by the CTRMA. The D/B CDA Developer shall submit a commercially available software specification to the CTRMA for review and approval within five (5) Business Days after NTP. The final software to be used for construction activity tracking will be determined by the CTRMA within twenty (20) Business Days after receipt of D/B CDA Developer's submittal.

1.4.2 Electronic Communications Requirements

1.4.2.1 Communications Management

All Project data shall be shared between the D/B CDA Developer and the CTRMA. Implementation details will be arranged after issuance of NTP. At a minimum, data sharing shall accommodate the following CTRMA requirements.

1.4.2.2 Electronic Files

All Submittals for review (including plans, specifications, and data) shall be accompanied with electronic representations of the pages using Adobe Acrobat PDF files. At the request of the CTRMA, the D/B CDA Developer may be required to supply the submittal data in the software format in which the submittal was created.

1.4.2.3 CTRMA Audit

Audits. The CTRMA shall have access to the design data files only for auditing purposes. (No 'change permissions').

1.4.3 Network Communications

The D/B CDA Developer must provide to all Project offices Internet access (T1 speed) and be able to communicate using secure file transfer protocol (FTP), secure e-mail, and secure websites.

1.4.4 File Transfer Website

The D/B CDA Developer shall also make all submittals available to the CTRMA via a secure website, and provide the CTRMA with procedures and software, if necessary, for accessing them, including user identification, secure passwords, and website address.

The website shall be segregated into Adobe Acrobat PDF files and actual design data files. All Adobe Acrobat PDF and data files shall be well organized and easy to locate.

The D/B CDA Developer shall maintain the website and keep it up-to-date with the latest plan, design, and construction file data.

File transfer shall be conducted as follows:

The D/B CDA Developer shall not include any files as attachments to electronic mail (e-mail) messages.

E-mail may be used to notify the CTRMA of the availability of document files on the File Transfer Website, and must include a link to the document file to facilitate ease of use.

1.4.5 E-mail Guidelines

The D/B CDA Developer may use an e-mail system which meets the following limitations:

Format. All e-mail messages must be formatted as plain text rather than in rich text or HTML.

Sensitive Information. All information which is considered sensitive materials or confidential information shall not be sent via e-mail.

2.0 QUALITY MANAGEMENT

2.1 QUALITY MANAGEMENT PROGRAM

2.1.1 Responsibilities

D/B CDA Developer Responsibility. The D/B CDA Developer shall be responsible for the design and construction quality of the Project and for fully complying with the Project's quality management program. Maximizing Project quality will require the daily attention and continued efforts of every worker who is involved with the design and construction of the Project, from issuance of Notice To Proceed (NTP) to Final Warranty Acceptance (FWA).

CTRMA Role. The CTRMA will support D/B CDA Developer's quality management program with implementation of the Quality Assurance Program (QAP).

2.1.2 Program Goals

Integrated Program. The D/B CDA Developer shall develop and implement a quality management program that:

Establishes comprehensive quality management procedures

Integrates the quality goals of both the design and construction elements of the Project

Defines the minimum standards and procedures for quality management

Assigns the responsibilities for specific quality management functions

Flexibility. The description of the quality management program in this Technical Provision 2 is not intended to be all encompassing, but to give the D/B CDA Developer and the CTRMA the flexibility to design a program that best fits the needs of the Project and both parties.

2.1.3 Quality Management Plans (QMPs)

Although the overall concepts and goals of the quality management program apply to the Project as a whole, the D/B CDA Developer shall describe and specify its program by developing and implementing two (2)-quality management plans (QMPs), as specified herein:

Design Quality Management Plan (DQMP) (Section 2.3.1)

Construction Quality Management Plan (CQMP) (Section 2.4.1)

These plans shall be based on the Draft DQMP and Draft CQMP submitted with the Proposal.

This section describes the minimum requirements to be addressed in D/B CDA Developer's DQMP and CQMP.

2.2 DEFINITIONS

Design Program Definitions

Design Quality Control (DQC): The actions of the D/B CDA Developer in examining, verifying, checking and certifying design elements and calculations to determine the correctness and accuracy of the Project Design.

Design Quality Assurance (DQA): shall mean independent assurance checks performed by the D/B CDA Developer. DQA shall include separate processes and reviews from the Design Quality Control program with reviews performed by staff independent of the production staff and under direction of the DQCM.

Design Acceptance: shall mean the CTRMA's program to provide confidence that the DQMP objectives and results meet the requirements of the Contract Documents. While the D/B CDA Developer retains responsibility for internal quality control and quality assurance of its design products, the CTRMA's Design Acceptance program will include external assurance reviews of the D/B CDA Developer's processes that may include calculation checks, plan reviews, audits of the D/B CDA Developer's DQMP or other actions as deemed appropriate by the CTRMA. TxDOT and the FHWA will retain the right to review and comment on all design submittals. The Design Acceptance shall be performed by the CTRMA.

Design Quality Control/Assurance Personnel: The D/B CDA Developer's personnel with specific design quality control and quality assurance (QC/QA) responsibilities. Design quality personnel must be at a high enough organizational level to ensure that implementation of QC/QA measures is not unduly influenced by schedule, performance, or cost considerations.

Early Released-for-Construction Plans: Partially completed plans that have sufficient detail for construction elements to be constructed early, at the risk of the D/B CDA Developer. Early construction items are items that can and, if necessary, shall be changed (at no cost to the CTRMA) by the D/B CDA Developer as the design proceeds; items may include, but are not limited to, clearing and grubbing, stripping topsoil, subgrade construction, and temporary traffic crossovers.

Formal Design Reviews: Plan reviews shall be set up by the Design Quality Control Manager (DQCM) at the following stages of design:

Preliminary (30%) Design Submittal

Intermediate (65%) Design Submittal

Final (100%) Design Submittal

Released-for-Construction Plans: Plans that are completed sufficiently to provide proper guidance for the construction of an element or portion of the Work. These plans must be reviewed for conformance with the Contract Documents by the D/B CDA Developer's Design Quality Control Manager (DQCM), certified by the DQCM, and accepted by the CTRMA.

Construction Program Definitions

Quality Assurance Program (QAP): The CTRMA's program of planned policies, procedures, detailed responsibilities, and systematic actions necessary to provide confidence that the Construction Quality Management and results meet the requirements of the Contract Documents related to the final construction elements; includes discretionary construction oversight, and audits of the D/B CDA Developer's Construction Quality Control.

Construction Quality Control (CQC): The actions of the D/B CDA Developer in examining, witnessing, inspecting, checking, testing and certifying in-process work to determine conformity to Project construction requirements.

Construction Quality Acceptance (CQA): The act of viewing or looking carefully at construction and design practices, products, and processes (including document control and shop drawings) to ensure compliance with the quality requirements contained in the Contract Documents. The CQA shall be performed by the CTRMA.

Materials Quality Acceptance Testing (MQAT): The CTRMA will provide or cause to be provided a laboratory that will perform Material Quality Acceptance Testing and evaluation of the reliability of the materials utilized on the Project. The CTRMA will pay for costs associated with MQAT.

2.3 DESIGN QUALITY MANAGEMENT

Documentation. The D/B CDA Developer shall maintain a record of internal design quality activities. A summary of the design review activities and design quality proceedings shall be included with the monthly Project Schedule documents submittals in accordance with Section 5.2.

2.3.1 Design Quality Management Plan (DQMP)

The D/B CDA Developer shall prepare and submit a Design Quality Management Plan (DQMP) based on the Draft DQMP submitted in its Proposal that addresses Design Quality Control (DQC) and Design Quality Assurance (DQA).

2.3.1.1 General

D/B CDA Developer Responsibility. The objective of the DQMP is to place the responsibility for conducting DQC and DQA reviews duties solely with the D/B CDA Developer and the Design Acceptance duties solely with the CTRMA. This arrangement allows the CTRMA to fulfill its responsibilities of exercising due diligence in overseeing the design process and accepting the design products. The CTRMA reserves the right to audit the DQMP during the D/B CDA Developer's design stage.

Design Standards. The DQMP shall ensure that all investigations, reports, calculations, plans, and specifications are prepared in accordance with accepted design and engineering practices as governed the Contract Documents.

General Requirements. The DQMP shall outline:

Systematic approach to the Project Design on a task level basis by defining the processes, procedures, design criteria, and documentation to be used

Comprehensive CAD standards and file naming structure

List of Design Packages

Design submittal work flow including planned Early Released for Construction Design Packages

Design submittal work flow including planned Released-for-Construction Design Packages

D/B CDA Developer's internal DQC procedures to be followed by design production personnel during Project Design

D/B CDA Developer's DQA procedures

2.3.1.2 CTRMA Review

Final DQMP. The D/B CDA Developer shall submit the Final DQMP for review and comment by the CTRMA within twenty (20) Business Days of NTP. If the D/B CDA Developer begins design before resolving all comments to the satisfaction of the CTRMA, it shall do so only at its sole risk. The CTRMA reserves the right to withhold payment for design and construction Development Work until the CTRMA accepts the DQMP. If the proposed DQMP is unacceptable to the CTRMA, the D/B CDA Developer shall modify and resubmit an acceptable plan. Once the plan is accepted, the D/B CDA Developer shall not revise any portion without the prior written approval of the CTRMA.

Withholding of Payment and Work Suspension. If there is evidence that the DQC or DQA procedures are not adequate (as evidenced by the CTRMA's Design Acceptance reviews or problems during construction), the CTRMA may, at its sole discretion, withhold payment for design and construction until sufficient DQC & DQA procedures are in place. If construction is in progress, the CTRMA may suspend ongoing work represented by the deficient design and require correction of design and/or construction defects.

2.3.1.3 DQMP Contents

The DQMP shall describe and include at least the following:

Responsibilities. Clear definition of the specific responsibilities of the Design Firm's internal DQC/DQA functions and duties.

DQC Procedures. The DQC procedures are for the design plans; specifications; reports; calculations, and other construction documents, organized by engineering disciplines (such as structural, civil, and utilities). These procedures shall specify measures to ensure that appropriate quality requirements are specified and included in Design Documents and to control deviations from such requirements. The D/B CDA Developer shall not deviate from such procedures unless the deviations have been previously approved by the CTRMA in writing.

Independent Plan Checking. The DQC procedures for ensuring independent checking of the preparation, verification, and checking of all plans, specifications, calculations, reports, and other submitted items.

Independent Design Calculations All fracture critical structural design elements subject to failure shall include a set of independent calculations for checking purposes. Such checking shall be in accordance with accepted engineering practices in the State of Texas and the requirements of the Contract Documents. The checking engineers shall meet the qualification requirements indicated in Section 2.3.2, and shall have more years of experience, for the type of construction represented by the calculations being checked, than the engineer(s) whose work is being checked.

Procedures for Released-for- Construction Plans. Specific DQC procedures for items planned for early construction, including specific procedures for verifying the final design and any computer programs used for design.

Identification of Design Personnel. Clear identification of the designer and checker on the face of all final design documents. Plans, specifications, calculations, reports, and other documents shall be certified, signed, and dated by the engineer in responsible charge for that item or element of the Project.

Adequacy of Design. Description of the level, frequency, and methods of checking the adequacy of the Project design for all Design Documents.

Coordination. Procedures for coordinating the various design activities that are performed by different individuals or firms for related tasks. The coordination procedures shall include the review, approval, release, distribution, and revision of documents involving such parties. These procedures shall ensure that conflicts, omissions, or misalignments do not occur between drawings or between the drawings and the specifications.

Personnel Qualifications. Procedures to:

Ensure that the D/B CDA Developer's personnel are familiar with all the provisions of the Contract Documents concerning their respective responsibilities

Provide for the education, training, and certification (as appropriate) of personnel performing activities affecting or assessing the quality of the Project Design to ensure that such personnel achieve and maintain reasonable proficiency.

Standards. Procedures to ensure that the Project Design is performed according to the DQMP, generally accepted engineering practices in the State of Texas, and the Contract Documents.

Documentation. The specific responsibilities of personnel responsible for satisfying documentation requirements and procedures for meeting documentation requirements; for filing design criteria, reports, notes, calculations, plans, specifications, schematic drawings, and supporting materials needed during the Final Design; and for developing Record Drawings. The D/B CDA Developer shall maintain, organize, and index all Design Documents and make copies available to the CTRMA upon request.

Audits. Procedures and schedules for the DQCM to audit the Design Firm's QC & QA procedures and to interface with the CTRMA.

2.3.2 Design Quality Control/Assurance Personnel

2.3.2.1 Quality Control/Assurance Personnel

The following Design Quality Control Personnel positions shall be identified in the DQMP.

Design Quality Control Manager. The D/B CDA Developer shall designate a Design Quality Control Manager (DQCM) who shall:

Be a Registered Professional Engineer in the State of Texas.

Be responsible for management of the DQMP.

Have no involvement with direct scheduling or production activities.

Conduct monthly reviews with the CTRMA to review progress and any areas of concern identified during the Design QC/QA reviews and the CTRMA Design Acceptance reviews.

Design QC/QA Engineers. The Design QC/QA staff shall include experienced engineers to perform detailed checks of all design calculations and review of construction plans as defined by D/B CDA Developer's quality control plan. An engineer shall be considered a Design QC/QA Engineer if he/she is an engineer, has practiced in the design discipline and type of work being checked for at least five (5) years, and has at least an equal level of qualifications and experience as the engineer(s) performing the design.

Senior Design Engineers. The D/B CDA Developer shall designate the Senior Design Engineer(s) (engineer[s] in responsible charge) for each technical item or element of the Project. The Senior Design Engineer shall be a Registered Professional Engineer in the State of Texas with at least fifteen (15) years of experience. The Senior Design Engineer may have less than fifteen (15) years of experience with prior written approval from the CTRMA. The Senior Design Engineer is personally responsible for directly supervising the Project Design and who will certify, sign, and date all design plans, reports, and submittals for a given technical item or element of the Project.

2.3.3 Design Quality Control

The DQC as outlined in the DQMP shall include:

The preparation of all design elements under the direct supervision of a Registered Professional Engineer in the State of Texas.

The complete check of all calculations and drawings by experienced engineers as defined in Section 2.3.2.

Establishment of a systematic approach to the Project Design by defining the processes, procedures, and documentation to be used.

Interdisciplinary design checks to ensure compatibility with other design disciplines

A constructability review

The complete check of all requirements of the Contract Documents.

2.3.4 Design Quality Assurance

The design quality assurance (DQA) reviews will be performed by the D/B CDA Developer and shall include:

Checks and fatal flaw reviews to assure compliance with the requirements of the Contract Documents.

Audit of records, documentation, procedures, and processes to verify compliance with the approved DQMP.

Audits of design to verify compliance with CDA, Scope of Work and Technical Provisions.

Revisions. After each review, the D/B CDA Developer shall address all comments and concerns by revising the design and/or plans to the DQCM & the CTRMA's satisfaction.

Periodic DQA Checks. The DQA check shall include a general review of all plans, reports, calculations, specifications, and supporting materials incorporated into the Design Documents.

Design Certification. The DQCM shall certify, prior to any design submittal to the CTRMA, that the submittal has been through the DQC and DQA processes and meets the DQMP standards and the requirements of the Contract Documents.

2.3.5 Design Acceptance

The D/B CDA Developer shall request CTRMA acceptance on a design package prior to the package being released for construction. Such acceptance shall not relieve D/B CDA Developer of its sole responsibility and liability for designing the Project in accordance with all applicable Laws, Governmental Approvals, TxDOT Standards and Specifications, AASHTO Guidelines, and the Contract Documents, nor shall it affect the legal and professional obligations applicable to the D/B CDA Developer's engineers in charge to provide a sound engineering design for the Project. The CTRMA will perform the Design Acceptance reviews and reserves the right to audit the D/B CDA Developer's DQMP operations.

2.3.5.1 Over-the-Shoulder Reviews

Purpose and Description. Over-the-shoulder reviews are informal examinations by the CTRMA of Design Documents during the Project Design process and are not intended to be an approval of any portion of the design. Over-the-shoulder reviews will mainly assess whether the requirements and design criteria of the Contract Documents are being followed and whether D/B CDA Developer's DQC and DQA activities are being undertaken in accordance with the approved DQMP. The over-the-shoulder reviews may include any relevant design information as requested by the CTRMA.

Extent. It is the intent of these over-the-shoulder reviews to check for concept, level of detail, design criteria, and fatal flaws. These reviews will not routinely include detailed calculation or drawing reviews, although the CTRMA retains the right to perform detailed reviews of any item at any time. If mutually agreed upon between the parties, for specific review items, the over-the-

shoulder review may consist of an exchange of electronic files between D/B CDA Developer's designer and the CTRMA.

2.3.5.2 In-Progress Design Workshops

Throughout the design process, the D/B CDA Developer or the CTRMA may request (at least five (5) Business Days in advance) in-progress design workshops to discuss and verify design progress and to assist the D/B CDA Developer and/or its designer(s) in resolving design questions and issues. The workshop is informal and discussions are non-binding unless agreed to by both parties in writing.

Timing. In-progress design workshops shall be conducted in D/B CDA Developer's office no later than two (2) weeks prior to each of the following mandatory submittals:

- Preliminary (30%) Design Submittal
- Intermediate (65%) Design Submittal
- Final (100%) Design Submittal
- Released-for-Construction (RFC) Submittals

Preparation. At least five (5) Business Days prior to each in-progress workshop, the D/B CDA Developer shall assemble and submit drawings or other documents to be reviewed during the workshop to the CTRMA for its information and review.

Review Records. Within five (5) Business Days after the in-progress workshop the D/B CDA Developer shall submit a written record of the in-progress design workshop, including:

- A list of the participants in attendance
- Description of the items covered and discussed
- Identification of discrepancies and comments, and a report on corrective actions (both those taken and those planned)
- Identification of follow-up action items, due dates, the party responsible for action items requiring resolution, and deadlines for resolution

2.3.5.3 CTRMA Visits

Throughout the design process, the CTRMA may make visits to discuss and verify design progress and ascertain the overall progress of the Project with respect to D/B CDA Developer's DQMP. If, at the sole option of the CTRMA, the D/B CDA Developer is not meeting the goals and objectives of the DQMP, the D/B CDA Developer shall suspend all Project work and the CTRMA will withhold payment until work elements are brought back into compliance with the DQMP.

2.3.6 Submittal and Review Process

Working Meetings. The D/B CDA Developer shall conduct a series of working meetings with staff, the DQCM and the CTRMA to establish and mutually agree upon procedures to be utilized during the design review process that are consistent with the Contract Documents. These procedures shall be included in the DQMP. The working meetings are also to develop an understanding on general design concepts, such as the geometric design, aesthetics, drainage, maintenance of traffic, pavement design, and structures.

Review by Design Package. At a minimum, D/B CDA Developer's Design QC/QA Engineers shall conduct detailed reviews of mandatory design submittals for each Design Package, as indicated in the DQMP. The CTRMA shall be notified and may attend the submittal reviews, and the D/B CDA Developer shall maintain formal documentation of these meetings for the CTRMA's audits. The CTRMA may choose to audit these reviews at any time.

Purpose. The purpose of the submittal reviews is for the Design QC/QA Engineers to verify and document that all design is proceeding in accordance with Project requirements, good engineering practice, applicable Law, the Governmental Approvals, and the Contract Documents.

DQCM Role. Prior to submittal to the CTRMA for review, all design calculations and drawing submittals shall undergo internal checks for accuracy, constructability, and thoroughness by the DQCM and design staff. The DQCM shall not submit packages to the CTRMA until all internal checks are completed as outlined in the DQMP.

CTRMA Role. All submittals are subject to review and acceptance by the CTRMA. Re-submittal of any Design Document for review may be required as appropriate to obtain acceptance from the CTRMA. The CTRMA shall refuse and reject any submittal that does not comply with the requirements of applicable Law, the Governmental Approvals, and/or the Contract Documents.

TxDOT and FHWA Role. The CTRMA has entered into a Project Development Agreement (PDA) that requires TxDOT to review and approve the design submittals with FHWA oversight. The D/B CDA Developer is required to provide the CTRMA with the appropriate number of copies (to be determined by TxDOT and FHWA) of each design submittal for the CTRMA to submit to TxDOT and FHWA for their review. All FHWA submittals will be provided through TxDOT.

Mandatory TxDOT Design Submittals. D/B CDA Developer's designer shall furnish to the CTRMA at least three (3) mandatory design submittals (as described herein) and any necessary resubmittals. The mandatory submittals are:

Preliminary (30%) Design Submittal

Intermediate (65%) Design Submittal

Final (100%) Design Submittal

Review Time Requirements. The CTRMA, TxDOT and FHWA will complete their reviews of D/B CDA Developer's plans and submittals based on the following review time requirements. Durations shown are inclusive of CTRMA, TxDOT and FHWA review times.

Preliminary (30%) Design Submittal:	15 Business Days
Intermediate (65%) Design Submittal:	20 Business Days
Final (100%) Design Submittal:	15 Business Days
Release For Construction (RFC) Submittal:	15 Business Days
Early Start of Construction Submittal:	15 Business Days
RFI Submittal:	5 Business Days

Note: Review times are based on receipt of no more than 2 plan submittals per day up to 3 continuous Business Days within the same discipline and no more than 6 plan submittals of any combination of disciplines per day up to 3 continuous Business Days.

2.3.7 Design Submittals

2.3.7.1 Preliminary (30%) Design Submittals

Purpose. The purpose of the Preliminary (30%) Design Submittal is to obtain acceptance by the CTRMA of D/B CDA Developer's roadway typical sections, horizontal and vertical geometric design, bridge clearances, and limits of the Project.

Content. The 30% Submittal shall include all plans, specification and other documents required for the submittal per Section 11.5.4 – Plan Submittal Requirements of these Technical Provisions. The submittal shall also include all modifications to the Base Configuration and design standards, all property requirements, impacts on Federal and State jurisdictional wetlands, subsurface geotechnical investigations and recommendations, slope stability analysis and recommendations, settlement monitoring program, vibration monitoring program, and construction specifications. Along with or prior to the Preliminary (30%) Design Submittal, the D/B CDA Developer shall document and justify all Design Exceptions consistent with the procedures outlined by the CTRMA.

CTRMA Role. Notify within five (5) days if submittal is complete and acceptable for review per 11.5.4 Plan Submittal requirements of these Technical Provisions. If acceptable, the CTRMA will submit to TxDOT for their review and complete the CTRMA review. If rejected, D/B CDA Developer will be required to resubmit. If rejected, a meeting will be conducted between the CTRMA and the DQCM to discuss the deficiencies in the submittal.

2.3.7.2 Intermediate (65%) Design Submittals

Purpose. The purpose of the Intermediate (65%) Design Submittal is to ensure that the design is progressing in accordance with the requirements of the Contract Documents, applicable Law, and the Governmental Approvals. The Intermediate (65%) Design Submittal shall also ensure that:

Existing field conditions have been properly identified and addressed.

The various design disciplines and elements of the Project are being properly coordinated between the D/B CDA Developer and persons responsible for adjacent work, appropriate landowners, utility owners, developers, contractors, railroads, and Governmental Entities.

Content. The Intermediate (65%) Design Submittal shall include all plans, specification and other documents required for the submittal per Section 11.5.4 – Plan Submittal Requirements of these Technical Provisions. The submittal shall also include detailed construction plans for ERFC Design Packages, preliminary construction plans for the non ERFC Design Packages, completed drainage design, resolution to all comments made on the Preliminary 30% Design Submittal, specifications, and design information indicating D/B CDA Developer's interpretations of the design requirements of the Contract Documents.

CTRMA Role. Notify within five (5) days if submittal is complete and acceptable for review per 11.5.4 Plan Submittal requirements of these Technical Provisions. If acceptable, the CTRMA will submit to TxDOT for their review and complete the CTRMA review. If rejected, D/B CDA Developer will be required to resubmit. If rejected, a meeting will be conducted between the CTRMA and the DQCM to discuss the deficiencies in the submittal.

2.3.7.3 Final (100%) Design Submittal

The D/B CDA Developer shall submit the Final (100%) Design Submittal to the CTRMA for review and acceptance.

Organization. Construction packages for individual work elements shall be organized such that the final document package can be assembled into a construction document that could be used to construct the work and/or could be used with minor revisions for Record Drawings.

DQCM Role. When the D/B CDA Developer has completed the Final Design of an item or element and wishes to obtain the CTRMA's acceptance to proceed with construction thereof, the DQCM shall certify that:

The design meets all applicable requirements of the Contract Documents, applicable Law, and the Governmental Approvals.

The design has been checked in accordance with D/B CDA Developer's approved DQMP and the Contract Documents.

The item or element is ready for construction.

All required ROW has been secured, along with any and all approvals from governmental agencies, Utility owners, and railroads.

All comments from previous reviews have been incorporated into the Design Package

After the DQCM certifies the above items, the CTRMA will conduct a formal review of the Final (100%) Design Submittal for said item or element.

Contents. The Final (100%) Design Submittal shall include all plans, specification and other documents required for the submittal per Section 11.5.4 – Plan Submittal Requirements of these Technical Provisions. The submittal shall also be complete Design Documents, incorporating resolution of the Intermediate (65%) Design Submittal review comments. All documentation, including the comments of the DQC and DQA reviews, DQCM written certifications, copies of the

CTRMA's approval of deviations from design standards, and/or Design Exceptions shall be provided.

CTRMA Role. Notify within five (5) days if submittal is complete and acceptable for review per 11.5.4 Plan Submittal requirements of these Technical Provisions. If acceptable, the CTRMA will submit to TxDOT for their review and complete the CTRMA review. If rejected, D/B CDA Developer will be required to resubmit. If rejected, a meeting will be conducted between the CTRMA and the DQCM to discuss the deficiencies in the submittal.

2.3.7.4 Final Design Package

Process. The D/B CDA Developer shall incorporate comments from the Final (100%) Design Submittal and/or re-submittals into its design and resolve all concerns and questions to the satisfaction of the CTRMA and TxDOT. Then the D/B CDA Developer shall submit to the CTRMA the Final Design Package, which shall include (at a minimum):

Design plans

Design calculations

Design reports

Specifications

Electronic files

Governmental, Utility Owner, and Railroad approvals

DQCM Certification of Compliance with the DQMP and Contract Documents

TxDOT approvals

Withholding of Payment. The CTRMA, at its sole discretion, may withhold payments for any or all work activity performed by the D/B CDA Developer if the CTRMA does not receive written certification of the Final Design Package from the DQCM and accept such Final Design Package as complete prior to Final Acceptance.

D/B CDA Developer Responsibility. The CTRMA Design Acceptance will not constitute approval of the design or subsequent construction, nor relieve the D/B CDA Developer of its responsibility to meet the requirements hereof irrespective of whether the CTRMA provides the D/B CDA Developer with the authority to begin construction on elements of the Project prior to completion of the entire design. The D/B CDA Developer shall bear the responsibility to ensure that construction meets the requirements of the Contract Documents, applicable Law, and the Governmental Approvals.

Deficiencies. If the CTRMA determines that the Final Design Package does not meet the requirements of the Contract Documents, applicable Law, and the Governmental Approvals, the CTRMA will notify the D/B CDA Developer in writing of any specific deficiencies in the Final Design Package. Upon receipt of the CTRMA's comments, the D/B CDA Developer shall correct such deficiencies and modify the Final Design Package and (if necessary) the construction.

2.3.8 Re-submittal Process

General. Re-submittals of any Design Submittal may be required if deemed necessary by the CTRMA. Each re-submittal must address all comments received from a prior submittal in a manner satisfactory to the CTRMA. The re-submittal shall be considered at the same level of completion (30%, 65%, etc.) as the previously submitted document. The D/B CDA Developer shall not be entitled to any additional compensation or time extension due to any re-submittal requirement by the CTRMA review and Design Acceptance process.

The D/B CDA Developer acknowledges and agrees that re-submittal of the Final Design Submittal may be required. The D/B CDA Developer shall resubmit the Final Design Submittal (as well as any other required design re-submittal) as many times as necessary to address the comments of the DQMP process and the CTRMA.

Continuing Activities. The D/B CDA Developer may continue its design activities, at its sole risk, during the re-submittal process. Such continuation in no way relieves the D/B CDA Developer of the responsibility to incorporate the comments of the DQMP re-submittal process and the CTRMA into the Design Documents.

2.3.9 Released-for-Construction Submittals

A RFC Plan submittal shall provide adequate information for safe, efficient, and high-quality construction. RFC Plans are intended to allow construction to begin on portions or elements of the Work after the Design Package's Final (100%) Design Submittal has been certified by the DQCM. At a minimum, the following activities shall occur prior to the CTRMA's acceptance of a RFC Plan submittal:

The CTRMA has concurred with the DQCM certification of the 100% Design Submittal

All comments from previous reviews have been incorporated into the Design Package

All ROW required for the construction of the portion of the Work represented by the Design Package has been acquired, or a right of use and possession agreement has been executed that allows for the construction of the portion of the Work

The D/B CDA Developer has obtained approval from applicable Governmental Entities and railroad companies

The D/B CDA Developer has coordinated the Design Package with the applicable Utility Owners

The D/B CDA Developer has created a quantity estimate for the Design Package

D/B CDA Developer's Risk. The D/B CDA Developer may proceed with construction of certain elements or portions of the Project in accordance with this section before the design of the entire Project has been completed. If the CTRMA (at its sole discretion) requires construction modifications or changes to already-completed Project elements performed under the RFC provisions due to noncompliance with Contract Documents, the D/B CDA Developer shall make any and all such construction modifications, removals, or reconfigurations at its sole cost and expense, without any entitlement to time extensions or adjustment in the Development Price.

CTRMA Review. Within the timescale specified in *Section 2.3.6*, CTRMA will notify the D/B CDA Developer of its acceptance or rejection of its RFC submittal. The CTRMA reserves the right to accept or reject any RFC submittal at its sole discretion.

The CTRMA will provide only conditional acceptance of a RFC submittal prior to acceptance of the Final Design Package. These Plans do not represent complete designs as defined under Final Design Package. The CTRMA will only review RFC Plans for internal consistency as Design Packages. Impacts from future submittals and the production of the Final Design Package cannot be anticipated by the CTRMA. The D/B CDA Developer shall be obligated to revise Plans and construction as required to address changes as a result of design development until delivery of a Final Design Package acceptable to the CTRMA.

Quantity Estimates. The D/B CDA Developer shall provide quantity estimates for Project work covered by Released-for-Construction Plans. The quantity estimates shall be in units consistent with the requirements for quality acceptance sampling and testing.

2.3.10 Design Changes

Either the D/B CDA Developer or the CTRMA may initiate design changes for items or elements undergoing construction or after Final Design.

RFI. To initiate and process such a change (not requiring a contractual Change Order), the D/B CDA Developer shall submit a Request for Information (RFI) for the CTRMA's concurrence.

Quality Procedures. Any design change shall undergo the same design DQC and DQA procedures specified above for the original design, and must be documented and approved by the designer responsible for the original design. If the original designer is no longer available, then after notification to the original designer, a Registered Professional Engineer in the State of Texas of equal or greater experience than the original designer shall document and approve each design change.

DQCM Role. For each design change to be accepted by the CTRMA, the DQCM shall certify in writing that the design change has been:

Designed in accordance with the requirements of the Contract Documents, applicable Law, and the Governmental Approvals

Checked in accordance with D/B CDA Developer's approved DQMP

Prepared consistently with other elements of the original design

Record Drawings. The D/B CDA Developer shall also document all changes made through the Construction RFI process in the Record Drawings.

2.3.11 Early Release for Construction (ERFC)

An ERFC Design Package may be submitted by the D/B CDA Developer to initiate an Early Start of Construction before obtaining the CTRMA's concurrence of the Final 100% Design Submittal for the

Design Package that includes said portions or items of the Work. The requirements of this *Section* shall apply to any portion of the Work that the D/B CDA Developer performs before receiving the CTRMA's written acceptance on the Final 100% Design Submittal for the respective portions or items of the Work. An ERFC Design Package must be approved by the D/B CDA Developer's Design Manager and certified by the DQCM. The CTRMA, at its sole discretion, may defer or reject Early Release for Construction for any portion or item requested by D/B CDA Developer.

Work that is constructed through the ERFC process is a portion or certain items of the Project that, under certain circumstances, can and, if necessary, shall be changed (at no cost to the CTRMA) by the D/B CDA Developer as the design proceeds. Such items may include:

Grading and Drainage Package

Early Phase Traffic Control Package

Bridge Substructure Package

Bridge Mill Order Package

Bridge Beam Order Package

The list above is provided as a reference of the types of Design Packages that could potentially be processed as ERFC; the CTRMA at its sole discretion will determine what is considered eligible for ERFC vs. RFC.

The procedures for ERFC shall be included in the DQMP, which procedures shall, among other things, include a process for distributing Construction Documents stamped "Early Release for Construction" signed and sealed by a Registered Professional Engineer in the State of Texas to the CTRMA and the field staff of the D/B CDA Developer. The DQMP shall also include a list of all Design Packages for which the D/B CDA Developer plans to use ERFC. The following design activities will be considered the minimum requirements to process a Design Package as an ERFC:

The CTRMA has concurred with the DQCM certification of the Preliminary (30%) Design Submittals

All comments from previous reviews have been incorporated into the Design Package

All ROW required for the construction of the portion of the Work represented by the Design Package has been acquired, or a right of use and possession agreement has been executed that allows for the construction of the portion of the Work

The D/B CDA Developer has obtained approval from applicable Governmental Entities and railroad companies

The Design Builders has coordinated the Design Package with the applicable Utility Owners

The D/B CDA Developer has created a quantity estimate for the Design Package

D/B CDA Developer Risk. All such Work is performed at the sole risk of D/B CDA Developer. An ERFC does not release the D/B CDA Developer from any of the Design Submittal processes described in *Section 2.3.7* and *Section 2.3.8*. If, as a result of the review process, the CTRMA (at its sole discretion) requires construction modifications or changes to already-completed Work

performed under the ERFC, the D/B CDA Developer shall make any and all such construction modifications, removals, or reconfigurations at its sole cost and expense, without any entitlement to time extensions or adjustment in the Development Price.

CTRMA Review. Within the timescale specified in Section 2.3.6, the CTRMA will notify the D/B CDA Developer in writing if the ERFC Design Package is accepted or rejected. The CTRMA will review for conformance with the Contract Documents. The CTRMA will provide only conditional acceptance of ERFC Design Packages. An ERFC Design Package does not represent a complete design. The CTRMA can only review ERFC Design Packages for internal consistency as a partial package. Impacts from future submittals and the production of the Final Design Package cannot be anticipated by the CTRMA. The D/B CDA Developer shall be obligated to revise the Work as required to address changes as a result of design development until delivery of a Final Design Package acceptable to the CTRMA. The CTRMA reserves the right to accept or reject any ERFC at its sole discretion.

2.4 CONSTRUCTION QUALITY MANAGEMENT

The D/B CDA Developer shall maintain a record of construction quality activities and include a summary with the monthly Project Schedule update.

2.4.1 Construction Quality Management Plan (CQMP)

The D/B CDA Developer shall prepare and submit a Construction Quality Management Plan (CQMP) based on the Draft CQMP submitted in its Proposal that addresses Construction Quality Control (CQC) how those activities will be coordinated with the CTRMA's Construction Quality Acceptance (CQA). The Quality Assurance Program (QAP) will be provided by the CTRMA and it will document the CTRMA's CQA role.

2.4.1.1 General

D/B CDA Developer Responsibility. The objective of the CQMP is to place the responsibility for conducting CQC duties solely with the D/B CDA Developer while enabling the CTRMA to conduct CQA and MQAT. The D/B CDA Developer is responsible to inspect and check all Work prior to releasing to the CTRMA for acceptance inspections or tests.

Focus on Quality. The D/B CDA Developer's Construction Quality Control (CQC) program includes the internal procedures used by the D/B CDA Developer, suppliers, and subcontractors that will ensure that the Project is delivered in accordance with the Released-for-Construction Plans, approved shop drawings, working drawings, and specifications. This requires the active and continuous participation of the entire work force; by focusing on achieving construction quality initially, so that rework can be reduced or eliminated.

General Requirements. The D/B CDA Developer's CQC elements shall require as a minimum the following:

CQC Inspections and tests are performed on a full time basis by qualified Senior CQC Representatives (Technical Provision, Section 1.1.2) independent of production work. The D/B CDA Developer's CQC elements shall employ the use of hold points. A hold point is the point at which a

CQA or material sample and/or test is required before proceeding with that element of work. Hold points shall be identified by the D/B CDA Developer and approved by CTRMA and inserted in the CQMP, CQC Inspection Procedures and CQC Inspection Forms.

CQA and MQAT by the CTRMA will be identified in the CQMP with hold points and must be completed prior to proceeding or continuance of work by the D/B CDA Developer.

The levels of CQC/CQA of critical elements will be identified in the CQMP approved by CTRMA. At a minimum, the D/B CDA Developer's CQMP shall specify CQC inspections and tests for all items covered by the CTRMA acceptance inspections and testing in the CTRMA's QAP.

2.4.1.2 CTRMA Review

The D/B CDA Developer shall submit a Final CQMP to the CTRMA at least forty (40) Business Days before beginning construction activities for CTRMA's review and comment. The D/B CDA Developer shall not begin any construction activities until the D/B CDA Developer resolves all comments to the satisfaction of the CTRMA.

2.4.1.3 CQMP Contents

The CQMP shall be consistent with the applicable procedures and shall clearly outline the activities for CQC and the benchmarks for CQA.

The CQMP shall describe and address at least the following:

Authority. Clear definition of the authority and responsibility for administering D/B CDA Developer's CQC and CTRMA's CQA program.

Work Force Participation. Methods and procedures to obtain active participation of D/B CDA Developer's work force in CQC activities to achieve a quality project.

Reporting Forms. Reporting forms to be used by the responsible CQC personnel.

Staffing Plan. A CQC organization and staffing plan that includes the period of time that each CQC staff member will be on-site.

Staffing Qualifications. Resumes and applicable certifications of the key staff members and the experience, knowledge, and skill levels of the CQC support staff.

Procedures. Procedures for inspecting, checking, and documenting the Project, for the inspection, examinations, and measurements for each operation (such as demolition, clearing, drainage, grading, surfacing, and paving), and for coordinating with the CQA Staff.

Controlled Conditions. Procedures to ensure that all activities affecting the quality of the Project are accomplished under controlled conditions, using appropriate equipment for the task being performed.

Personnel Standards. Procedures to ensure that the standards of education, training, and certification of personnel performing CQC activities are achieved and maintained.

Critical Elements. Procedures to ensure that critical elements of the Project (such as the deck pour) are not started or continued without acceptance by the CQA Staff.

Conformance and Performance. Specific procedures to ensure that all work conforms to the requirements of the Contract Documents, Governmental Approvals, applicable Law, and the Design Documents, and that all materials, equipment, and elements of the Project will perform satisfactorily for the purpose intended.

Compliance Criteria. A requirement that all activities undertaken by or on behalf of the D/B CDA Developer affecting the quality of the Project shall be prescribed and accomplished by documented instructions, procedures, and appropriate drawings, all of which shall include quantitative and qualitative criteria to be used to determine compliance.

Purchase Compliance. Measures that ensure that purchased materials, equipment, and services conform to the Contract Documents, the Governmental Approvals, applicable Laws, rules, regulations, and the Design Document (including measures for source evaluation and selection, provision of objective evidence of quality furnished by subcontractors and suppliers, inspection at the manufacture or vendor source, and examination of products upon delivery).

RFI Procedures. Procedures for processing RFIs to resolve discrepancies and/or questions in the Released-for-Construction Plans so that all changes are documented and approved by the D/B CDA Developer's design engineers. The D/B CDA Developer shall involve the CTRMA throughout the entire RFI process.

Coordination. A program for coordination of all inspections and testing with the inspections and tests of Governmental Entities and Utility Owners.

Adverse Conditions. Procedures to ensure that conditions adverse to quality (such as failures, malfunctions, deficiencies, defective material and equipment, deviations, and other Nonconforming Work) are promptly identified and corrected; to ensure that the cause of the condition is determined and prompt corrective action taken to preclude repetition; and to document and report the identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken be documented in writing to the CTRMA and to appropriate levels of the D/B CDA Developer's management team.

Instrumentation. Procedures and personnel to be used to assure that specified instrumentation is installed and monitored in accordance with applicable specifications.

Certificates of Compliance. The form and distribution of certificates of compliance.

Construction Staking. Procedures for checking and verifying the accuracy and adequacy of construction stakes, lines, and grades established by D/B CDA Developer.

2.4.2 Construction Quality Control, Materials Quality Acceptance, and Quality Acceptance Personnel

2.4.2.1 Quality Control Personnel

D/B CDA Developer's CQC organization shall, at a minimum, consist of the following individuals.

Construction Quality Control Manager. The D/B CDA Developer shall assign an on-site CQC Manager (CQCM) who shall be responsible for management of the CQMP, shall not be involved with scheduling or production activities, and shall report directly to D/B CDA Developer's Project Manager. The CQCM shall see that the methods and procedures contained in the approved CQMP are implemented and followed by the D/B CDA Developer and subcontractors.

CQC Staff. Each person on the D/B CDA Developer's and subcontractors' construction work force is considered to be a member of D/B CDA Developer's QC staff, as each and every one is responsible for the quality of the Project. CQC inspections shall be performed on a full time basis by Senior CQC Representatives independent of production work. Personnel performing quality control sampling, testing, and inspection shall be knowledgeable in the testing and inspection methods and procedures. CQC staff responsible for the quality control of asphalt shall be certified as required in item 341 of the *TxDOT Standard Specifications of Construction and Maintenance of Highways, Streets, and Bridges*

2.4.2.2 Material Quality Acceptance

The CTRMA will perform or cause to be performed the Material Quality Acceptance Testing.

Material Quality Acceptance Staff. The CTRMA will assign MQAT personnel to the Project responsible for material sampling/testing, under the direction of the CTRMA, of all materials incorporated into the Project by any member of the D/B CDA Developer's group.

2.4.2.3 CTRMA Role during Construction

The CTRMA will perform, at its sole discretion, construction acceptance reviews and audits of the D/B CDA Developer's Construction Quality Management operations.

CTRMA's CQA organization will consist of the following individuals.

Resident Engineer (RE). An on-site engineer, registered in the State of Texas, responsible for management of the QAP shall be assigned to the Project. The RE has the authority to observe, test, inspect, approve, and accept the work. The RE decides all questions about the quality and acceptability of materials, work performed, work progress, Contract Documents interpretations, and acceptable Contract Documents fulfillment or other procedures requiring the "Engineers' review, approval, authorization, examination, interpretation, confirmation, etc." which are contained in the *TxDOT Standard Specifications of Construction and Maintenance of Highways, Streets, and Bridges*. The RE has the authority to enforce and make effective these decisions.

The RE acts as a referee in all construction questions arising under the terms of the Contract.

Construction Quality Acceptance Staff. CQA personnel will be assigned to the Project responsible for acceptance under the direction of the RE, of all construction activities performed and materials incorporated into the Project by any member of D/B CDA Developer's group. The CQA staff will perform quality acceptance oversight and testing services typically performed by TxDOT on traditional projects, with the exception of monitoring tests and means and methods.

CQA staff shall provide oversight and perform audits of the quality control inspection and material acceptance sampling/testing operation.

Construction activities requiring continuous field quality acceptance review or sampling and testing, in the sole discretion of CTRMA, shall proceed only in the presence of assigned CQA personnel. The CQMP shall identify those activities.

Should CTRMA determine that D/B CDA Developer is not complying with CQMP due to lack of coordination with the CQA staff, CTRMA shall have the right, without penalty or cost, including time extensions or delay damages, to restrict Work efforts until appropriate levels of coordination with the CQA staff are consistent with the CQMP and satisfactory to CTRMA.

2.4.3 Construction Quality Control

The D/B CDA Developer shall perform any and all construction inspections and reviews necessary to provide a quality Project which meets the objectives of the Contract Documents. The D/B CDA Developer is responsible to inspect and check all Work prior to releasing to the CTRMA for acceptance inspection or testing.

At a minimum, the quality inspections and testing shall meet the following requirements:

Prior to being implemented into the work, the D/B CDA Developer shall provide all Portland cement concrete and hot-mix asphalt concrete mix designs in accordance TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* to the CTRMA for approval.

Designation by the D/B CDA Developer and each supplier and subcontractor of a Senior Quality Control Inspector to perform daily field inspections of Project materials and work, and preparation of a daily QQC report to document the inspections.

Sampling and testing of all materials during the crushing, screening, or manufacturing processes so that only materials meeting the specifications are supplied for ultimate incorporation into the Project.

Establishment of a systematic approach to the Project that defines all requirements for processes, procedures, and documentation.

The D/B CDA Developer's CQMP shall specifically address the procedure for the acceptance and use of materials/products that have been determined not to be in compliance with the design or construction requirements (i.e., Nonconformance Report process). Regardless of the corrective action or resolution, the CTRMA reserves the right to reject use of materials/products found to be not in compliance.

2.4.4 Construction Quality Acceptance

Definition. Quality acceptance shall include the following:

Construction Quality Acceptance:

Review of all Project elements to verify and document that the Project has been constructed in conformance with the Released-for-Construction plans, specifications, and approved working and shop drawings.

Authority to stop a specific activity of Project if (in the opinion of the RE) the CQMP is not being implemented correctly

Audit of D/B CDA Developer's records, documentation, procedures, and processes to verify compliance with the approved CQMP. Audit results shall be documented, reviewed, and acted upon by D/B CDA Developer. Follow-up action, including re-audit of deficient areas following corrective action, shall be taken where indicated.

Making spot checks on construction alignment and grades in accordance with the requirements contained in the TxDOT *Survey Manual*.

Material Quality Acceptance Testing:

Review and approval of all Portland cement concrete and hot-mix asphalt concrete mix designs by a Registered Professional Engineer in the State of Texas

Quality acceptance material sampling and testing, to be conducted and performed at the point of acceptance, as defined and in accordance with TxDOT's *Construction Contract Administration Manual, Manual of Testing Procedures, Material Inspection Guide, and the Guide Schedule of Sampling and Testing*.

Codify the material inspections and testing similar to that used by TxDOT's Construction Division – Materials and Pavement Section (CSTM&P).

In accordance with TxDOT procedures, material inspection and testing of materials/products supplied by manufacturers or producers approved by TxDOT for use on TxDOT projects (i.e., materials from a TxDOT approved list) will not be required unless the quality of the job site material is questioned. The CTRMA reserves the right to independently test samples to verify compliance with the construction requirements.

Material Acceptance Testing Requirements. The CTRMA will perform material sampling and testing at the point of acceptance as defined by the current TxDOT Standards. Material sampling and testing shall be conducted at the minimum "Project Test, Frequency of Sampling" established in the *TxDOT Contract Administration Handbook for Construction Projects*.

Inspection and Testing by Others. When any Governmental Entity or Utility Owner is to accept or pay for a portion of the cost of the Project, its respective representative(s) shall also have the right to inspect such Project. Such inspection does not make such person a party to the Agreement or a

beneficiary of any of the rights and obligations hereunder, nor will it change the rights and obligations of the D/B CDA Developer or the CTRMA under the Contract Documents.

Uncovering of Finished Project. If the CTRMA is not given adequate notice of and/or the opportunity for prior CQA of any Development Work done or materials used, then the CTRMA may order that such Development Work or materials be uncovered, removed, or restored at D/B CDA Developer's expense, and the D/B CDA Developer shall not be entitled to a time extension, even if the Development Work proves to conform with the requirements of the Contract Documents, the Governmental Approvals, and applicable Law after uncovering.

2.4.5 Independent Assurance and Testing Dispute Resolution

Independent Assurance: The technician testing certification and laboratory equipment calibration will be performed by TxDOT or an Independent Assurance laboratory certified by TxDOT.

Testing Dispute Resolution System: When CTRMA acceptance test results differ from that of the D/B CDA Developer CQC test results, testing disputes shall be resolved by the referee laboratory. The referee laboratory shall be a Testing Firm approved jointly by the D/B CDA Developer and the CTRMA. The referee laboratory shall perform testing or evaluation in a reliable, unbiased manner. The decision by the referee laboratory will be final.

Fees: Any fees charged for the Independent Assurance certifications for D/B CDA Developer material testing program and testing dispute resolution will be the responsibility of the D/B CDA Developer .

2.4.6 Fabricated Material Inspection and Testing

Weekly Inspection Notices. On a weekly basis, the D/B CDA Developer shall provide the CTRMA, with a rolling three (3)-week inspection notice. At a minimum, the inspection notification shall detail the fabrication schedule and planned construction activities.

2.4.7 Reporting, Record-Keeping, and Documentation

The D/B CDA Developer shall maintain construction workmanship and materials quality records of all CQC inspections and tests performed per the approved CQMP, and report results to the RE to allow timely and accurate decisions on workmanship and material quality issues.

General Content. These records shall include factual evidence that the required CQC inspections and tests have been performed, including the type and number of CQC inspections involved; the results of CQC inspections; the nature of defects, deviations, causes for rejection, etc.; proposed remedial action(s); and corrective actions taken. These records shall cover both conforming and defective or deficient features, and shall include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the Contract Documents.

Weekly Construction Schedule. These records shall be made available to the CTRMA in format and content as specified in the CQMP. The D/B CDA Developer shall provide to the CTRMA specific

construction schedule activities (including location and planned quantities) on a weekly basis to enhance coordination of the CTRMA's CQA activities.

Specific Content. Requirements for the D/B CDA Developer's CQC inspection records shall include, but are not necessarily limited to, the following:

Reports and Results. Quality Control inspection reports, in hard-copy format, shall be submitted to the CTRMA within twenty-four (24) hours following the inspection or test.

Daily Logs. The CQCM shall maintain (in an electronic format acceptable to the CTRMA) a daily log of all QC inspections performed for both the D/B CDA Developer and subcontractor operations. These daily QC inspection logs shall document the day's events, activities, and discussions by identifying all inspections conducted, results of CQC inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed. The responsible technician and his/her supervisor shall sign the daily QC inspection logs. The logs shall be accessible to the CTRMA at the end of each work shift.

Electronic Reports. The CQCM shall establish an electronic system for recording all QC inspection and material test results consistent with CTRMA requirements. Preliminary QC inspection and test results from each day's work period shall be signed by the responsible technician and his/her supervisor, and electronically transmitted to the CTRMA. The results of the daily QC inspection shall be provided within five (5) Business Days of the day of record. In addition, weekly summary status reports shall also be provided within five (5) Business Days.

Database Format. The CQC's inspection shall electronically deliver the QC results to the CTRMA in a database format. The D/B CDA Developer and the CTRMA, prior to construction testing, shall agree upon the format for this database.

Hard Copies. The D/B CDA Developer shall deliver to the CTRMA hard copies of final CQC inspection, and CQC material tests within three (3) Business Days of completion of the individual inspection or test activity.

2.4.8 Requirements of Laboratories

Certification. Staff must comply with the requirements of the AASHTO Accreditation Program (AAP) or other appropriate certification acceptable to the CTRMA and must be certified for the pertinent test. Sampling and testing personnel must obtain and keep current the following certifications unless otherwise waived by governing specifications:

- A. ACI Concrete Field Testing Technician – Field Grade I;
- B. ACI Concrete Strength Testing Technician;
- C. TxAPA HMA Plant Production Specialist – Level 1A;
- D. TxAPA HMA Roadway Specialist – Level 1B;
- E. TxAPA HMA Mix Design Specialist – Level 2;
- F. TxAPA Properties Specialist – SB 101;
- G. TxAPA Field Specialist – SB 102;

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- H. TxAPA Materials Analysis Specialist – SB 103;
 - I. TxAPA Strength Specialist – SB 201;
 - J. TxAPA Compressive Strength Specialist – SB 202.

Reciprocity may be granted to individuals who have been successfully qualified under another state’s program. These situations will be considered on a case-by-case basis and must meet the approval of the CTRMA. A copy of certificate(s) shall be transmitted to the CTRMA upon their receipt by the testing laboratory.

2.4.9 Source and Quality of Materials

The quality of all materials shall conform to the CTRMA’s requirements, as contained in the Contract Documents. Manufacturers’ test reports may supplement, but not replace, the CQC inspections, CQC sampling and testing, MQAT and certification provisions.

TxDOT Services. The CTRMA has entered into an Interlocal Agreement with the Texas Department of Transportation to provide for material testing and inspection services at points in Texas where the State routinely provides resident inspection services for its own highway materials and at other locations throughout the contiguous United States.

Three weeks prior to TxDOT performing any inspections, the D/B CDA Developer shall prepare work orders, which will be issued by the CTRMA to TxDOT for execution. Each work order will include the following information:

- A. Project Information (i.e., contract number, project control numbers, etc.)
- B. Work Description
- C. Type and quantity of highway material(s) to be tested and/or inspected
- D. One (1) copy of the appropriate design documents, including plans, special provisions, supplemental specifications, and notes
- E. Two (2) sets of approved shop drawings to the fabricators location, one (1) of which is specifically to be stamped “For TxDOT Use”. Shop drawings submittals must be complete and clearly indicate any special fabrication requirements
- F. Assigned fabrication for each highway material including: the fabricator’s location, contact, and phone number
- G. Date inspection should occur
- H. Signature and telephone number of authorized CTRMA and D/B CDA Developer representatives

A supplemental work order will be required when changes are made to the work order.

Random Testing. When material that cannot be identified by specific test reports is proposed for use, the RE will select random samples from the lot for testing by D/B CDA Developer. The RE shall determine the number of such samples and test specimens.

Furnishing of Samples. If requested by the CTRMA, the D/B CDA Developer shall furnish to the CTRMA samples of materials to be incorporated into the Project. The D/B CDA Developer shall use no material that is subject to such a request without written authorization by the CTRMA to proceed. Manufacturers' warranties, guarantees, instruction sheets, parts lists, and other materials that are furnished with articles or materials incorporated into the Project shall be made available to the CTRMA upon request.

CTRMA Inspections. The CTRMA may, at its sole discretion, inspect the production of all material or the manufacture of products at the source of supply, except for materials that are routinely accepted by manufacturers' certificates of compliance. The CTRMA shall have free entry at all reasonable times to such parts of the plant relating to the manufacture or production of materials. The CTRMA shall assume no obligation to inspect materials at the source of supply, but will perform inspections at times and frequencies that the CTRMA determines are in its own best interest.

2.4.10 Access to Testing Facilities

The CTRMA reserves the right to check testing equipment, procedures, and techniques for compliance with the CTRMA's and AASHTO's test methods, equipment requirements, and calibration standards. The CTRMA also reserves the right to access the testing facilities to witness the testing, and to verify compliance of the testing procedures, techniques, and results.

2.4.11 Nonconformance Report

The D/B CDA Developer shall identify, document, and report to the CTRMA any instance of Nonconforming Work. This reporting shall be compiled by the CQCM and shall be in the form of a Nonconformance Report (NCR).

Submittal. The NCR shall be submitted to the CTRMA in writing within twenty-four (24) hours of the D/B CDA Developer obtaining knowledge of the same. The D/B CDA Developer shall simultaneously send a copy of each NCR to the DQCM and the RE.

Contents. The NCR shall clearly describe the element of the Development Work that is nonconforming and the reason for the nonconformance. The D/B CDA Developer's Design Engineer who certified and sealed the drawings for the Development Work shall evaluate the effect of the nonconformance on the performance, safety, durability, and long-term maintenance of both the Project and the specific element affected. If the Design Engineer or the CTRMA determines that remedial action is necessary, the proposed remedial action shall be documented and bear the stamp of the original responsible Registered Professional Engineer. The D/B CDA Developer's DQCM and the CTRMA must also sign off on the NCR stating that the remedial actions to be employed have undergone the same level of Design QC/QA as the Development Work design.

Record-Keeping and Closure. The RE will maintain a log of all NCRs. Each NCR will be numbered sequentially, given a brief description, a status and, if it is not closed, an expected date for closure. All NCRs must be closed with the stamp of Design Firm's qualified engineer in charge or the responsible Registered Professional Engineer from the same firm assigned to replace the original

one and CTRMA approval. The CTRMA will not grant Final Acceptance for the Project if there is an outstanding NCR.

CTRMA Role. The CTRMA shall have the authority to require the removal of any Nonconforming Work. The CTRMA shall also retain the right to write its own NCRs. NCRs generated by the CTRMA shall require the same review and ultimate closure by the D/B CDA Developer as an NCR prepared by the D/B CDA Developer.

Cost Adjustments. The CTRMA reserves the right to make cost adjustments for the D/B CDA Developer work that, although not in conformance with plans and specifications, Contract Documents, the governmental approvals, or applicable law, and is nevertheless permitted by the CTRMA to remain in place.

2.4.12 Construction Documentation

The D/B CDA Developer shall maintain in a secure place at the construction field office one (1) record copy of all drawings, specifications, addenda, amendments, change orders, CQC material test and MQAT reports, CQC inspectors reports, RFIs, NCRs, written interpretations, and clarifications, all in good order and annotated to show changes made during construction. These documents, as well as all approved samples and approved shop drawings, shall be available at all times to the CTRMA.

2.4.12.1 General Requirements

Required Data. During performance of the Project, the D/B CDA Developer shall collect and preserve the following data, at a minimum, in written form acceptable to the CTRMA:

Daily manpower and equipment reports for the D/B CDA Developer and each subcontractor for construction-related activities.

Daily occurrence logs for construction-related activities, recording in narrative form all significant occurrences on the Project, including:

- Unusual weather

- Asserted Force Majeure events

- Events and conditions causing or threatening to cause any significant delay or disruption or interference with the progress of the Development Work

- Significant injuries to person or property

- A listing of each activity depicted on the current Project Schedule status submittal that is being actively prosecuted.

- A daily record in a standard format recording all labor, materials, and equipment expenses that are being incurred.

CQC and MQAT. The D/B CDA Developer shall maintain quality records documenting all CQC operations, CQC inspections, activities, and CQC tests performed, including the CQC elements

performed by subcontractors. Such records shall include any delays encountered and a list of any Nonconforming Work, together with the corrective actions taken.

Utilities. For any Governmental Entity betterments or Utility Adjustment work, such data shall be maintained separately for each Governmental Entity or Utility.

Hazardous Materials. For the hazardous materials management work element, such data shall be maintained separately for each area in which hazardous materials management work is performed.

Future Claims. If it becomes necessary to undertake work for which a Change Order has not been executed or that may be the subject of a future claim, the D/B CDA Developer shall identify this work on separate daily occurrence logs.

Monthly Certifications. The D/B CDA Developer shall maintain a monthly written certification in accordance with Section 13.3.4 of the Agreement.

Certificates of Compliance. Materials certificate of compliance at Final Acceptance of the Project will be submitted by the CTRMA.

2.4.12.2 Shop and Working Drawings

The D/B CDA Developer's design engineers shall review, approve, authorize, and confirm any methods or procedures that are contained in the latest edition of the TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, and then submit the certified and sealed design drawings to D/B CDA Developer's construction team. The construction team shall then generate shop and working drawings as necessary to clearly define, control, construct, and inspect the Project. These working drawings shall be sent back to the design team for review and internal approval. All such drawings shall be reviewed by qualified personnel, and shall be stamped "Approved for Construction." Working drawings requiring signing and sealing per the TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* shall be signed and sealed by a Registered Professional Engineer in the State of Texas, prior to being issued for construction.

Other Approvals. The D/B CDA Developer shall provide the CTRMA and all other applicable Governmental Entities copies of the preliminary and final shop and working drawings and shall coordinate the preparation, submittal, and review of all such shop and working drawings. Where Governmental Approvals or approvals from Utility Owners are required, shop and working drawings shall be submitted to the applicable party for review and approval in accordance with its requirements.

Contents. Shop and working drawings for the Project shall include structural steel fabrication plans, anchor bolt layouts, shop details, erection plans, equipment lists, and any other information specifically required by the CQMP, TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* or other Governmental Entities.

Temporary Work. Shop and working drawings and calculations for excavation shoring, cribs, cofferdams, falsework, overhead signs, temporary support systems, formwork, and other

temporary Project elements that describe the methods of construction proposed to be used for the Project shall be prepared by the D/B CDA Developer in accordance with the DQMP. The CTRMA will not review or regularly receive copies of these submittals unless it specifically requests such documents. Receipt of submittals for temporary Project elements by the CTRMA shall in no way constitute approval of the planned Project element or impose any liability upon the CTRMA.

Submittal to CTRMA. Approved shop or working drawings shall be made available to the CTRMA at least five (5) Business Days prior to the start of any Development Work detailed by those drawings. The D/B CDA Developer shall make no changes in any approved shop or working drawing after the design engineer has approved them. Any deviations from approved shop or working drawings shall require the fabricator to submit revised drawings to the D/B CDA Developer's design engineers for their approval, as outlined above.

2.4.12.3 Record Drawings

As a condition to Final Acceptance of the Project, the D/B CDA Developer shall provide to the CTRMA the Project's Record Drawings, consisting of two (2) hard-copy sets, one (1) electronic file of each plan in .pdf format and one (1) electronic file in Microstation .dgn format of the Record Drawings.

Contents. These Record Drawings shall depict the final completed Project, including all changes and data showing the electrical systems, drainage systems, lighting systems, underground Utilities, traffic controls, intelligent transportation system, signing placement, shop plans, highway alignment and grade revisions, bridge detail changes, bridge settlement reference elevations and joint seal measurements, typical sections and cross sections and all other relevant data, including any operations and maintenance manuals for the mechanical and electrical systems.

Bridge Plans. The Record Drawings relating to bridges shall show the actual profile grade elevations at each substructure centerline and the tip elevation of drilled shafts or pile foundations on the bridge layouts. The D/B CDA Developer shall obtain and record actual beam seat elevations prior to placing beams or girders.

Signoff. The D/B CDA Developer's Engineer of Record shall sign, seal, and date the title sheet of the Record Drawings and certify that the Project was completed in accordance with the plans, the Contract Documents, the Governmental Approvals, and applicable Law.

3.0 WARRANTIES

The CTRMA requires warranties on construction items to help ensure both the initial and long-term quality of the Project's products, workmanship, and materials.

3.1 REFERENCED STANDARDS AND GUIDELINES

TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, adopted by TxDOT on June 1, 2004.

3.2 SUMMARY OF PROJECT WARRANTIES

The D/B CDA Developer must warranty the work in accordance with the Contract Documents. In general, the warranties must remain in effect until five (5) years after Final Acceptance or as specified in Table 3.2 (*Summary of Project Warranties*).

Table 3.2
Summary of Project Warranties

<i>General Subject</i>	<i>Warranty Period after FA</i>
Flexible Pavement: Pavement Failure in Surface/Base	5 years
Flexible Pavement: Cracking, Raveling, Flushing, Rutting, and Popouts	3 years
Rigid Pavement: Cracking, Joint Deficiencies, Punch-Outs, and Surface Defects	5 years
Buildings, Structures, Toll Structures, Gantries, and related facilities	5 years
Structural Concrete	5 years
Steel Paint System	5 years
Settlement: New Roadway Grade	5 years
Settlement: Noise and Retaining Walls	5 years
Signing (Permanent)	2 years
Traffic Signals	2 years
Turf Establishment	1 year
Lighting	2 years
D/B CDA Developer Directed Utilities Relocations	2 years

3.3 WARRANTY REQUIREMENTS

The D/B CDA Developer shall provide warranties to the CTRMA against defects in materials and workmanship.

Definitions. For definitions of the following terms related to warrant.

Final Acceptance: The date when the Project construction is complete, the Project is fully open to traffic without restrictions, and the CTRMA has determined that the Project is in compliance with the Contract Document requirements and the Scope of Work (*Exhibit B*). This date constitutes the start of the Warranty period.

Final Warranty Acceptance (FWA): The date that defines the completion of the five (5)-year Warranty period, and the date upon which the Warranty bond must be released by the CTRMA. Acceptance will occur as soon as the CTRMA has determined that the Contract Document requirements have been met for the Warranted Work.

3.3.1 Final Warranty Acceptance (FWA)

The CTRMA and the D/B CDA Developer must jointly review all completed warranty work or a portion thereof, as determined by the CTRMA. If the work does not meet the Contract Document requirements as determined by the CTRMA, the D/B CDA Developer must make all necessary corrections, at its own expense, before acceptance. The date on which acceptance occurs is termed the date of FWA.

Exclusion for Corrections. The CTRMA may accept the Work and begin the warranty period, excluding any area needing corrective work, to accommodate limitations or staged construction.

Disclaimer. Neither the Final Acceptance nor any prior inspection, acceptance, or approval by the CTRMA diminishes the D/B CDA Developer's responsibility under this warranty.

Documentation. FWA will be documented and executed jointly by the CTRMA and the D/B CDA Developer on a form furnished by the CTRMA. The CTRMA will send a copy of the form to the D/B CDA Developer's warranty bond surety agent.

Material. Acceptance of material in penalty under the CTRMA's CQA will not relieve the D/B CDA Developer from the responsibility of meeting the material and workmanship warranty requirements for the accepted material.

3.3.2 Warranty Bond

Amount and Term. The D/B CDA Developer must furnish a single-term warranty bond in the amount designated in the Contract Documents. The effective starting date of the warranty bond must be the date of Final Acceptance. The warranty bond will be released at the end of the warranty period (at FWA) or after all warranty work has been completed and accepted, whichever is latest.

3.3.3 Rights and Responsibilities of the CTRMA

3.3.3.1 CTRMA Rights

The CTRMA reserves the right to:

Approve the schedule proposed by the D/B CDA Developer to perform warranty work.

Approve all materials and specifications used in the warranty work.

Determine whether warranty work performed by the D/B CDA Developer meets the Contract Document specifications.

Perform, or have performed, routine maintenance during the warranty period, which routine maintenance will not diminish the D/B CDA Developer's responsibility under the warranty.

Perform, or have performed, emergency repairs under certain conditions, as specified herein.

Emergency Repairs. The CTRMA will notify the D/B CDA Developer when action is required to address a condition that it has determined to be unsafe, and the D/B CDA Developer must make immediate emergency repairs. However, if the D/B CDA Developer is unavailable or unable to comply with this requirement to the CTRMA's satisfaction and within the time frame required by the CTRMA, the CTRMA will perform, or have performed, any necessary emergency repairs. Any such emergency repairs undertaken will not relieve the D/B CDA Developer from the obligation to meet the warranty requirements. If the unsafe condition is determined by the CTRMA to have been caused by defective materials and/or workmanship, then any cost associated with the emergency repair shall be paid by the D/B CDA Developer. In the event the D/B CDA Developer fails to pay such cost within thirty (30) days of receipt of notice for payment, the CTRMA will be entitled to recover the costs of such work from the Warranty Bond.

3.3.3.2 CTRMA Responsibilities

It is the responsibility of the CTRMA to:

Monitor the Project throughout the warranty period and (annually or as determined by the CTRMA) provide the D/B CDA Developer formal written reports on the Project related to the warranty requirements.

Communicate the warranty requirements and the quality of the warranty work to be performed by the D/B CDA Developer.

Notify the D/B CDA Developer, in writing, of any corrective action required to meet the warranty requirements.

3.3.4 Responsibilities of the D/B CDA Developer

The D/B CDA Developer must:

Warrant to the CTRMA that the warranted work is free of defects in materials and workmanship.

Perform all temporary or emergency repairs that are necessitated by non-compliance with the warranty requirements or determined by the CTRMA to have been caused by defective materials and/or workmanship, using CTRMA approved materials and methods.

Notify the CTRMA and submit a written plan for performing the needed warranty work at least ten (10) Business Days before starting warranty work, except in case of emergency repairs as detailed in this *Section*. The submittal must propose a schedule for performing the warranty work and the materials and methods to be used, including a traffic control plan (TCP).

Follow a D/B CDA Developer prepared and CTRMA approved TCP when performing warranty work. Schedule non-emergency warranty work during non-peak-hour traffic and as approved by the CTRMA.

Supply to the CTRMA original documentation that all insurance required by the Contract Documents is in effect during the period that warranty work is being performed. This shall include railroad protective liability coverage, when necessary.

Complete all warranty work before conclusion of the warranty period, or as otherwise agreed to by the CTRMA.

Be liable during the warranty period in the same manner as contractors currently are liable for their construction-related activities with the CTRMA pursuant to the latest edition of the *TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*. This liability arises and continues only during the period when the D/B CDA Developer is performing warranty work. This liability is in addition to the D/B CDA Developer performing and/or paying for any required warranty work, and must include liability for injuries and/or damages and for any expenses resulting there from that are not attributable to normal wear and tear of traffic and weather, but are due to noncompliant materials, faulty workmanship, and/or the operations of the D/B CDA Developer.

Within seven (7) Days of receipt of notice from the CTRMA specifying a failure of any D/B CDA Developer Work to satisfy the Warranties, the D/B CDA Developer and the CTRMA shall mutually agree when and how the D/B CDA Developer shall remedy such violation; provided, however, that in the case of an emergency requiring immediate curative action, the D/B CDA Developer shall implement such action as it deems necessary and shall immediately notify the CTRMA in writing of the emergency.

3.3.5 Evaluation Method

Segmentation. The CTRMA will measure and quantify Project condition parameters by evaluating certain selected segments of the Project. A segment is defined as any consecutive 500-foot section of driving lane and/or shoulder. The segmentation scheme (i.e., the segment termini) and the segments selected for evaluation will vary according to the condition parameter being evaluated.

Method. Evaluation will include use of the TxDOT's pavement management system (PIMS) and/or field pavement condition reviews.

Waiver. This evaluation may be waived by the CTRMA in emergency situations.

3.3.6 Corrective Action Requirements

Segment Criteria. Warranty work will be required as a result of certain defects in materials and/or workmanship. If fifty percent (50%) or more of the evaluated segments in any mile exceed the threshold limits, the entire mile will require corrective action; otherwise, only the affected segments will require corrective action.

Thresholds. The specific thresholds for corrective action are shown in tables in this Section.

Investigations. To determine whether the failure to meet the warranty criteria is a result of defects in materials and/or workmanship, a CTRMA scheduled annual field investigation will be conducted jointly by the CTRMA and the D/B CDA Developer. The CTRMA and/or the D/B CDA Developer may, if mutually agreed upon, elect a third party to conduct a forensic investigation of the failure. The results of any such investigation shall be final and binding. The decision to undertake a forensic investigation, the scope of it, and the selection of the party to conduct it shall be determined jointly by the CTRMA and the D/B CDA Developer. All costs of the forensic investigation shall be shared proportionately, based on the determined cause of the condition as related to the materials and workmanship as stated in the Contract Documents.

Nonwarranted Conditions. During the warranty period, the D/B CDA Developer will not be held responsible for distresses that are caused by identifiable factors unrelated to materials and workmanship. These include, but are not limited to, chemical and fuel spills, vehicle fires, and destructive testing done by the CTRMA during the warranty period. Upon written request from the D/B CDA Developer and on a case-by-case basis, the CTRMA will consider other factors that appear to be beyond the control of the D/B CDA Developer.

Time Requirements for Corrective Action. The D/B CDA Developer shall undertake corrective action work within twenty (20) Business Days after notice by the CTRMA of acceptance of the written plan for warranty correction. If the work cannot be started then because of limitations, the D/B CDA Developer must so notify the CTRMA and submit (for CTRMA approval) a schedule for completion of the corrective action work. Failure by the D/B CDA Developer to respond to the CTRMA or undertake corrective action within the specified period of time will be cause for the CTRMA to undertake the corrective action work itself and recover the costs of such work from the warranty bond.

3.3.7 Emergency Repairs

Emergency repairs will be addressed as outlined in Section 3.3.3.1 – CTRMA Rights.

3.4 WARRANTY SPECIFICATIONS

The D/B CDA Developer shall warrant its workmanship and materials as specified herein.

3.4.1 Flexible Pavement: New Constructed Hot-Mix Asphalt

Application. This section applies to pavement warranties on new and reconstructed hot-mix asphalt (HMA) pavement placed on an unbound or stabilized aggregate base. Distress identification must be according to the latest methods used by TxDOT and the following definitions.

Limits of Warranted Work. The warranted work shall include all HMA on driving lanes and shoulders within the Project limits.

Condition Parameters. Condition parameters are used to measure the performance of the HMA pavement during the warranty term. Each condition parameter has a threshold level applied to each segment and a maximum number of defective segments allowed before corrective action (warranty work) is required.

Definitions:

Transverse Cracking: A crack that is predominantly perpendicular to the pavement

Longitudinal Cracking or Open Joint: A crack that is predominantly parallel to the pavement centerline

Block Cracking: A pattern of cracks that divides the pavement into approximately rectangular areas that range in approximate size from 1 to 100 square feet

Alligator Cracking: A series of interconnected cracks in the early stages of development, evolving into many-sided, sharp-angled pieces, usually less than one (1) foot on the longest side, with a characteristic chicken-wire or alligator pattern

Debonding: A physical separation of the new pavement surface from the underlying pavement surface (visually identified by shoving or the loss of new surface course); includes surface potholes (regardless of depth) to the extent derived from debonding of the new surface course

Raveling: Wearing away of the HMA pavement surface caused by the dislodging of aggregate particles and loss of asphalt binder

Flushing: Excess bituminous binder on the pavement surface, which may cause a shiny glasslike reflective surface that may be tacky to the touch; usually found in the wheel paths

Popout: A small piece of pavement or aggregate greater than ¼ inch in diameter that has broken loose from the surface

Rutting: A longitudinal surface depression in the wheel path; may have associated transverse displacement

Failure: Where the underlying materials of the surface or base migrates to the surface resulting in pavement displacement

Threshold Limits. Table 3.4.1 lists the allowable threshold limit for each condition parameter within each Project segment. If any threshold limit is exceeded as a result of a defect in materials and/or workmanship, corrective action (warranty work) will be required. The defective segments for surface distress do not have to be contiguous to necessitate corrective action. Each driving lane

and shoulder must be evaluated independently. Any pavement surface requiring removal or replacement to correct deficiencies for any condition parameter must be placed full-width across the driving lane or shoulder.

Corrective Actions. Table 3.4.1 suggests corrective actions to illustrate acceptable treatments for the various condition parameters. The CTRMA will accept the listed corrective action if the action addresses the cause of the distress. The D/B CDA Developer may implement the CTRMA suggested corrective action or an alternative, subject to CTRMA approval.

*Table 3.4.1
Threshold Limit & Corrective Action -
New Constructed Hot-Mix Asphalt Pavement
(for Any Consecutive 500-foot Segment)*

<i>Condition Parameter</i>	<i>Segment Threshold Limits*</i>	<i>Recommended Action</i>
Transverse Cracking	Five (5) cracks per segment, each greater than or equal to 6 feet long and greater than or equal to 1/8 inch wide	Rout and seal. In addition, rout and seal all transverse cracks after three (3) years. ³
Longitudinal Cracking	5% of the segment length	Rout and seal. In addition, rout and seal all longitudinal cracks after three (3) years. ³
Block Cracking	None allowed	Mill and resurface or treat surface (chip seal or microsurface). ¹
Alligator Cracking	None allowed	Repair to full depth and resurface.
Debonding	None allowed	Mill and overlay.
Raveling	1% of the segment area	Mill and overlay or treat surface (chip seal or microsurface). ¹
Flushing	1% of the segment length	Mill and overlay.
Popouts	15 per square yard	Mill and overlay.
Rutting	Average rut depth of 0.5 inch	Microsurface or mill and overlay. ^{2,4}
Failures	None allowed	D/B CDA Developer to provide proposed action. ²

1. Recommended action depends on the extent and severity of cracking.

2. Recommended action must be approved by the CTRMA.

3. Cracks greater than 2" wide will be considered failures.

4. Depends on the depth of the rut.

*12-foot lane or shoulder width for Any Consecutive 500-foot Segment

3.4.2 Rigid Pavement: New or Reconstructed Concrete

Application. This Section applies to pavement warranties on new and reconstructed concrete pavement placed on an unbound or stabilized aggregate base course. Distress identification must be according to latest methods used by TxDOT and the following definitions.

Limits of Warranted Work. The warranted work shall include all concrete pavement on driving lanes, ramps, and shoulders within the Project limits.

Condition Parameters. Condition parameters are used to measure the performance of the concrete pavement during the warranty term. Each condition parameter has a threshold level applied to each segment and a maximum number of defective segments allowed before corrective action (warranty work) is required.

Definitions:

Cracking: A visible fissure or surface discontinuity that may or may not extend through the entire slab; singular or in multiple patterns. Crack types are:

Transverse: Cracks that are predominantly perpendicular to the pavement centerline

Longitudinal: Cracks that are predominantly parallel to the pavement centerline

D-Cracking: A portion of the panel separated by a crack that intersects the adjacent transverse and longitudinal joints, describing approximately a 45-degree angle with the direction of traffic, and with the length of the sides ranging from one (1) foot to one-half (1/2) the width of the panel on each side of the corner

Map: A series of cracks that extend only into the upper surface of the slab; for larger cracks, frequently oriented in the longitudinal direction of the pavement and interconnected by finer transverse or random cracks

Shrinkage: Partial-depth drying and plastic shrinkage cracks resulting from tensile stresses

Joint Spalling: Cracking, breaking, chipping, or fraying of the panel edges within two (2) feet of the transverse or longitudinal joint

Joint Sealant Damage: Any condition that enables incompressible materials or a significant amount of water to infiltrate the joint from the surface; typically, extrusion, hardening, adhesive failure (debonding), cohesive failure (splitting), and complete loss of sealant

Shattered Slab: A pavement slab broken into four (4) or more sections by full-depth cracks

Scaling: Deterioration of the upper concrete slab surface, normally from 0.125 to 0.5 inch in extent, and occurring anywhere on the pavement

Popout: A small piece of pavement greater than ¼ inch in diameter that has broken loose from the surface

Nonfunctioning Joints: Transverse panel joints with misaligned dowel bars or dowel bars that do not function as designed

Threshold Limits. Table 3.4.2 lists the allowable threshold limit for each condition parameter within each segment. If any threshold limit is exceeded, corrective action (warranty work) will be required. The defective segments for surface distress do not have to be contiguous to necessitate corrective action. Each driving lane, shoulder, and ramp must be evaluated independently. Any pavement surface requiring removal or replacement to correct deficiencies for any condition parameter must be placed full-width across the driving lane, shoulder, or ramp.

Corrective Actions. Table 3.4.2 suggests corrective actions to illustrate acceptable treatments for the various condition parameters. The CTRMA will accept the listed corrective action if the action addresses the cause of the distress. The D/B CDA Developer may implement the CTRMA suggested corrective action or an alternative, subject to CTRMA approval.

Table 3.4.2
Threshold Limit & Corrective Action -
New or Reconstructed Concrete Pavement

<i>Condition Parameter</i>	<i>Segment Threshold Limits</i>	<i>Severity Levels¹</i>	<i>Recommended Action</i>
<u>Cracking:</u>			
Transverse	Each Affected Slab	Low	None
		Medium	Full Slab Replacement
		High	Full Slab Replacement
Longitudinal	Each Affected Slab	Low	None
		Medium	Full Slab Replacement
		High	Full Slab Replacement
D-crack	Each Affected Slab	Low	None
		Medium	Full Slab Replacement
		High	Full Slab Replacement
Map	>10 SqFt total per Slab*	N/A	Full Slab Replacement
Shrinkage	Each Affected Slab	N/A	Full Slab Replacement
<u>Joint Deficiencies:</u>			
Joint Spalling	Each Affected Joint	Low	None
		Medium	Partial Depth Repair
		High	Replace Joint (3' either side)
Joint Sealant Damage	Each Affected Joint	N/A	Replace Affected Joint Sealant
<u>Surface Defects:</u>			
Shattered Slab	Each Affected Slab	N/A	Full Slab Replacement
Popouts	> 10 Occurrence per Slab*	N/A	Full Slab Replacement
Scaling	>10 Sq Ft total per Slab *	N/A	Full Slab Replacement
Nonfunctioning Joints	Each Affected Joint	N/A	Replace Joint (3' each side)

¹ The D/B CDA Developer shall refer to SHRP "Distress Identification Manual for the Long-Term Pavement Performance Project (SHRP-P-338) for definition of distress severity levels and measurement procedures.

* Slab is defined as: for jointed pavement, the pavement length between joints and one (1) lane in width; for continuously reinforced pavement, a 100' length of pavement one (1) lane in width. When occurrences/areas exceed the values in this table the entire length of the slab shall be replaced. When occurrences/areas are less than these values, spot repairs shall be performed (full depth for map cracking; partial depth for popouts and scaling).

3.4.3 Structural Concrete

Application. This Section applies to structural concrete and concrete paving associated with bridge construction.

Limits of Warranted Work. The warranted work shall include concrete bridge rail, bridge approach slabs, bridge deck paving, bridge superstructures, and other structural systems, including noise and retaining walls.

Condition Parameters. Condition parameters are used to measure the performance of the concrete during the warranty term. The following condition parameters apply.

Definitions:

Through-Deck Cracking: Full-depth cracks in concrete bridge decks, typically represented by efflorescence on the bottom of the deck

Delamination: An area in the concrete where cracks have propagated from the reinforcement layers toward the concrete surface, typically due to corrosion of the reinforcement; determinable by sounding, chain drags, or other nondestructive testing methods

Spalling: Areas of concrete where cracks have progressed to cause areas of the concrete to come loose from the element

Scaling: Deterioration of the upper concrete slab surface, normally 0.125 to 0.5 inch, occurring anywhere on the deck

Popout: A small piece of the deck greater than 0.25 inch in diameter that has broken loose from the surface

Surface Finish Defects: Defects in the special surface finishes or architectural color systems, including peeling, discoloration, and staining (including any changes to the appearance of the concrete surface that do not match the specified colors of the surface treatment)

Joint Sealant Damage: Any condition that enables incompressible materials or a significant amount of water to infiltrate the joint from the surface; typically, extrusion, hardening, adhesive failure (debonding), cohesive failure (splitting), and complete loss of sealant

Threshold Limits. Table 3.4.3 lists the allowable threshold limit for each condition parameter. If any threshold limit is exceeded, corrective action (warranty work) is required.

Corrective Actions. Table 3.4.3 suggests corrective actions to illustrate acceptable treatments for the various condition parameters. The CTRMA will accept the listed corrective action if the action addresses the cause of the distress. The D/B CDA Developer may implement the CTRMA suggested corrective action or an alternative, subject to CTRMA approval.

**Table 3.4.3
Threshold Limit & Corrective Action -
Structural Concrete**

<i>Condition Parameter</i>	<i>Threshold Limits</i>	<i>Recommended Action</i>
Through-Deck Cracking	Any occurrence	Inject epoxy. ¹
Delaminations and Spalling	Any occurrence	See Note 1 below
Scaling	Any occurrence	See Note 1 below
Popouts	Five (5) per square yard	See Note 1 below
Surface Finish Defects	Any occurrence	See Note 1 below
Joint Sealant Damage	None allowed	Replace joint sealant.

1. The D/B CDA Developer shall work in conjunction with the CTRMA to determine appropriate repair. The CTRMA will be the final authority on determination of the necessity for corrective action work and acceptable treatments with respect to the listed condition parameters.

3.4.4 Steel Paint Systems

Application. This Section applies to all steel paint systems used on ornamental metal railings and structural steel members.

Limits of Warranted Work. The warranted work shall include all structural members and steel ornamental railing.

Condition Parameters. Condition parameters are used to measure the performance of the paint systems during the warranty term. The following condition parameters apply.

Definitions

Visible Rust or Rust Breakthrough: Any corrosion of the steel member

Paint Blistering: Areas in the paint system where the paint has bubbled or loosened from the steel member

Peeling and Scaling: Areas in the paint system where the paint is no longer adhering to the steel member, causing loss of paint system

Chalking: White or gray surface imperfection, apparent from discoloration of surface

Threshold Limits. Table 3.4.4 lists the allowable threshold limit for each condition parameter. If any threshold limit is exceeded, corrective action (warranty work) is required.

Corrective Actions. Table 3.4.4 suggests corrective actions to illustrate acceptable treatments for the various condition parameters. The CTRMA will accept the listed corrective action if the action addresses the cause of the distress. The D/B CDA Developer may implement the CTRMA suggested corrective action or an alternative, subject to CTRMA approval.

**Table 3.4.4
Threshold Limit & Corrective Action -
Steel Paint Systems**

<i>Condition Parameter</i>	<i>Threshold Limits</i>	<i>Recommended Action</i>
Visible Rust or Rust Breakthrough, Paint Blistering, Peeling, Scaling, or Chalking	Any occurrence	Repair to meet painting specifications. Obtain approval of all repair procedures by the RE. ¹

1. The D/B CDA Developer shall work in conjunction with the CTRMA to determine appropriate repair. The CTRMA will be the final authority on determination of the necessity for corrective action work and acceptable treatments with respect to the listed condition parameters.

3.4.5 Differential Settlement of New Roadway Grade (Including Bridge Fills)

Application. This *Section* applies to settlement warranties on all new roadway and ramp subgrades constructed within the Project limits.

Limits of Warranted Work. The warranted work shall include all subgrade excavation, embankment, and aggregate base placed on the roadway below the pavements and in sideslope areas, including bridge approach panels and pavement over culverts and utilities.

Condition Parameter. Condition parameters are used to measure settlement is surface differential settlement in the pavement. The differential settlement will be measured (both along the roadway profile and transversely between lanes, shoulders, and adjacent structures) along twenty-five (25) foot intervals using a high-speed or lightweight inertial profiler, certified at the Texas Transportation Institute in accordance with Item 585 in the 2004 *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*. Transverse profile shall be recorded with straight edge with an interval of at least every 1/10 of a mile and at discrete locations where uneven pavement is apparent.

Threshold Limits. Table 3.4.5 lists the allowable threshold limit within each segment. If any threshold limit is exceeded, corrective action (warranty work) is required. The defective segments for surface distress do not have to be contiguous to necessitate corrective action. Any pavement surface requiring removal or replacement to correct deficiencies for any condition parameter must be placed full-width across the driving lane, shoulder, or ramps.

Corrective Actions. Table 3.4.5 suggests corrective action to illustrate acceptable treatment for the condition parameter. The CTRMA will accept the listed corrective actions. The D/B CDA Developer may implement the CTRMA suggested corrective action or an alternative action, subject to CTRMA approval.

**Table 3.4.5
Threshold Limit & Corrective Action -
Differential Settlement of New Roadway Grade**

<i>Condition Parameter</i>	<i>Segment Threshold Limit</i>	<i>Recommended Action</i>
Pavement Surface Differential Settlement	IRI>95	Profile mill/ milling and overlay as necessary to maintain pavement thickness

3.4.6 Settlement and Deflection: Noise and Retaining Walls

Application. This *Section* applies to all noise and retaining walls designed and constructed by the D/B CDA Developer.

Limits of Warranted Work. The warranted work shall include all noise wall and retaining wall materials, footings, and hardware designed and constructed by the D/B CDA Developer and the installation procedures (including problems arising from excessive settlement).

Threshold Limits. Table 3.4.6 lists the allowable threshold limits for differential settlement and lateral deflection of retaining walls and noise walls. If any threshold limit is exceeded, corrective action (warranty work) is required.

**Table 3.4.6
Threshold Limit & Corrective Action -
Settlement of Noise & Retaining Walls**

<i>Condition Parameter</i>	<i>Threshold Limit</i>	<i>Recommended Action</i>
Differential Settlement	0.5 inch in 10 feet of horizontal distance	Submit recommended design for corrective action to the CTRMA for approval. In lieu of corrective action, the D/B CDA Developer may be assessed 50% of the current replacement cost of the wall.
Lateral Deflection	1.00 inch in 10 feet of vertical height	Submit recommended design for corrective action to the CTRMA for approval. In lieu of corrective action, the D/B CDA Developer may be assessed 50% of the current replacement cost of the wall.

3.4.7 Signing (Permanent)

Application. This *Section* applies to all permanent signing furnished and installed by the D/B CDA Developer.

Limits of Warranted Work. The warranted work shall include all permanent signing materials, hardware, and overhead sign structures installed by the D/B CDA Developer. Signs damaged by forces beyond the control of the D/B CDA Developer, such as maintenance activities, accidents, or

acts of nature, will relieve the D/B CDA Developer of any further warranty related to the damaged portion of the sign device.

Warranty Requirements. The D/B CDA Developer must repair or replace any material or equipment that fails to perform or meet the Project signing standards and/or specifications.

3.4.8 Traffic Signals

Application. This Section applies to all traffic signals installed by the D/B CDA Developer.

Limits of Warranted Work. The warranted work shall include all material, equipment, and installation of traffic signals by the D/B CDA Developer.

Warranty Requirements. The D/B CDA Developer must repair or replace any material or equipment that fails to perform or meet the Project traffic signal standards and/or specifications.

3.4.9 Turf Establishment (Grasses)

Application. This Section applies to turf establishment on all disturbed areas within the Project limits.

Limits of Warranted Work. The warranted work shall include all sodding, seeding, fertilizing, and mulching necessary to reestablish turf within the Project limits.

Warranty Requirements. The D/B CDA Developer shall provide a minimum level of turf (re)establishment as outlined in the RFDP for a period of one (1) year from the date of Final Acceptance. At the end of the one (1)-year warranty period, the D/B CDA Developer and a representative from the CTRMA will inspect all the areas that were seeded and/or sodded to ensure that all plant matter is alive and that plant coverage is acceptable to prevent erosion. The D/B CDA Developer shall re-establish areas where the plant matter is dead or coverage is deemed inadequate by the CTRMA or the D/B CDA Developer. Once the inspected areas have been re-established by the D/B CDA Developer, the CTRMA will notify the D/B CDA Developer that the terms of the warranty period have been met and that the warranty period is complete.

3.4.10 Lighting

Application. This Section applies to all new lighting within the Project limits and to existing lighting relocated by the D/B CDA Developer.

Limits of Warranted Work. The warranted work shall include all material (including replacement of light bulbs), equipment, and installation of the lighting for this Project.

Warranty Requirements. The D/B CDA Developer must repair or replace any lighting material or equipment that fails to perform or meet the Project lighting standards and/or specifications.

3.4.11 Utilities

Application. This *Section* applies to warranties on all the D/B CDA Developer directed utility relocations within the Project limits.

Limits of Warranted Work. The warranted work shall include all material and workmanship associated with the D/B CDA Developer managed utility relocations for this Project.

Warranty Requirements. The D/B CDA Developer must perform video camera inspections before the Final Acceptance to verify that materials and workmanship comply with specifications.

3.4.12 Buildings, Toll Facilities and Related Facilities

Application. This *Section* applies to warranties on all the D/B CDA Developer directed buildings, toll facilities and related facilities.

Limits of Warranty Work. The warranted work shall include all material and workmanship associated with the D/B CDA Developer directed buildings, toll facilities and related facilities.

Warranty Requirements. The D/B CDA Developer must repair or replace any material or equipment that fails to perform or meet the Project standards and/or specifications.

3.5 FAILURE ADJUSTMENTS TERMS

In the event of a failure on any items contained in this Technical Provision, the warranty term for the failed element shall be modified as follows:

For all items covered by an original warranty period of one (1) year, the original warranty term shall be extended by a term of *six (6) months*

For all items covered by an original warranty period of two (2) years or more, the original warranty term shall be extended by a term of *twelve (12) months*.

4.0 PUBLIC INFORMATION PLAN

4.1 INTRODUCTION

Purpose. The objective of the Public Information Plan is to maintain a high level of communication by informing and engaging local Governmental Entities, special interest groups, businesses, and the general public about the Project status throughout the design and construction period. The CTRMA will be responsible for developing the Project Information Plan; however, the D/B CDA Developer will be responsible for communicating with, and providing information as described in this *Technical Provision 4.0* to, in a timely manner, the CTRMA and TxDOT. The Project Management Plan shall include processes for keeping the CTRMA and TxDOT informed about construction activities.

4.2 PUBLIC INFORMATION PLAN

Plan. The D/B CDA Developer shall collaborate with CTRMA staff in implementing a Public Information Plan (PIP) for the Project by providing CTRMA staff the required information as a means to:

- Inform the public on status of design and construction
- Provide the public with an opportunity for input
- Notify the public in advance of construction and potential impacts

The document will include strategies and tactics, specific timelines and deliverables. The plan shall specifically address:

- A detailed work plan
- Air, lighting, and noise quality measures methodology
- Traffic management and construction staging methodology
- Interaction to address community, federal, state and local agencies
- Summarize key issues anticipated to be addressed through the life of the Project
- Construction or design related adjustments in response to community concerns
- Emergency response plan

CTRMA Review. Prior to finalizing the PIP, any construction activity shall require approval by the CTRMA.

4.3 STAFFING REQUIREMENTS

Public Affairs Coordinator. The D/B CDA Developer's public information staff will act as an extension of CTRMA staff to cooperatively promote public satisfaction with the Project. The D/B

CDA Developer shall designate a Public Affairs Coordinator to manage the D/B CDA Developer's public relations and public information activities and be the D/B CDA Developer's principal community liaison for the Project. This staff member shall be considered a Key Personnel as defined in *Section 1.1.2* and, as such, must have certain qualifications that are approved by the CTRMA. At a minimum, this specialist shall be experienced in all aspects of providing the public with information on public works projects, including community relations; newsletter production; website design, posting and maintenance; direct mailing; and public speaking.

Responsibilities. The Public Affairs Coordinator shall be responsible for Public Information activities related to the Project, including (but not limited to) the following:

- Monitoring of the PIP
- Assistance in the emergency response program
- Providing updates for the Project internet website
- Cooperation with local government agencies as directed by the CTRMA
- Active communication with and response to the needs of affected businesses
- Staffing of public meetings
- Preparation of public exhibits and audiovisual presentations
- Preparation and distribution of regular updated materials to interested parties regarding the progress and the planning of the design-build work
- Scheduling of meetings with community groups
- Staffing a telephone hotline and website e-mail site to respond to public inquiries, information requests, and complaints about the Project, and documenting all calls and responses

News Media. Any and all contact with the news media by the D/B CDA Developer's team shall be through the CTRMA .

4.4 PROJECT WEBSITE

Website Development and Maintenance. Within twenty (20) Business Days following issuance of the NTP, the D/B CDA Developer shall provide available pertinent Project information to the CTRMA for posting onto a Project website that will be maintained by the CTRMA. . Pertinent Project information to be provided by the D/B CDA Developer shall include but is not limited to:

- Schematic Maps
- D/B CDA Developer Contact Information
- Road closures and traffic control information
- Press releases
- Project Schedule

All contents provided by the D/B CDA developer for the Project website must be approved by the CTRMA. The requirements established for the Project website are in addition to the Document Control Project Website discussed in *Section 1*.

Web Site Comments/Response: The D/B CDA Developer may be responsible for reviewing website comments and inquiries that are forwarded to the D/B CDA Developer by the CTRMA for response in a timely fashion. In addition, the D/B CDA Developer will be responsible for making sure that any follow up information or materials requested by the CTRMA are provided in a timely fashion.

4.5 SPECIAL EVENTS AND ACTIVITIES

The CTRMA wants to provide multiple opportunities for the public to be engaged in the Project in fun and informative settings including but not limited to:

Groundbreaking Ceremony: The D/B CDA Developer will be required to plan and coordinate a groundbreaking ceremony to mark the beginning of the construction of the Project. At a minimum the D/B CDA Developer will supply the following elements for the groundbreaking ceremony; tents, chairs, stage, podium, sound system, ceremonial shovels, mementos, refreshments, invitations, and programs. The D/B CDA Developer will work with the CTRMA to identify the location of the groundbreaking ceremony, to create a theme and determine the attendees, program, and speakers for the event. The D/B CDA Developer will be responsible for handling the execution of the groundbreaking ceremony.

Kids' Day: The D/B CDA Developer will be required to participate in a series of Kids' Day events during the life of the Project aimed at providing the community with an opportunity to learn firsthand about the Project. This fun, outdoor event targeting children can include elements such as: construction safety presentations; information on the project; hands on equipment demonstrations; giveaways; and refreshments. The CTRMA will be responsible for planning, advertising and executing the Kids' Day events. The D/B CDA Developer will be responsible for providing construction equipment and personnel for equipment demonstrations, preparing and providing a location for the kids' day events, and assisting with parking, logistics, and traffic control for the kids' day events as directed by the CTRMA.

Grand Opening Ceremony: The D/B CDA Developer will be required to participate in a grand opening ceremony to mark the opening of the Project. The CTRMA will plan and coordinate the grand opening ceremony. At a minimum the D/B CDA Developer will supply the following elements for the grand opening: tents, chairs, stage, podium, sound system, mementos, refreshments, invitations, and programs. The D/B CDA Developer will work with the CTRMA to identify the location of the ceremony, assist with parking, logistics, and traffic control for the grand opening ceremony as directed by the CTRMA. The CTRMA will create a theme and determine the attendees, program, and speakers for the event and will handle execution of the ceremony.

4.6 COMMUNITY/ BUSINESS OUTREACH

The D/B CDA Developer will be required to support the CTRMA in implementation of outreach activities that will strengthen understanding of the Project. The CTRMA envisions a community outreach program that supports the Project and includes, but is not limited to:

Neighborhood Meeting: The CTRMA will arrange for and make presentations to neighborhood groups about the Project. These meetings will be attended by appropriate D/B CDA Developer team representatives who are capable of addressing technical questions related to the Project. The D/B CDA Developer will be required to prepare presentation and meeting materials for neighborhood meetings as directed by the CTRMA. The D/B CDA Developer shall be responsible for rental and placement of portable messaging signs (dynamic and static) for meeting notification as directed by the CTRMA.

Project Tours: The CTRMA will arrange and provide Project site tours with interested groups and individuals such as Boy Scout troops, elected officials, business representatives and others throughout the life of the Project. The D/B CDA Developer will be required to accommodate Project site tours and to provide D/B CDA Developer team representatives as directed by the CTRMA for Project site tours.

Hotline: The D/B CDA Developer if required will be responsible for setting up and staffing a twenty-four (24)-hour hotline throughout the life of the Project. The hotline will be answered by a person during regular business hours M-F. A voice mail system and a system to forward after hours emergency calls to the appropriate emergency contact will also be a part of the Project hotline. The D/B CDA Developer will be required to respond to all hotline phone calls within one (1) business day.

Web Site Comments/Response: The D/B CDA Developer will be responsible for reviewing Web site comments and inquiries that are forwarded by the CTRMA and submitting a response to the CTRMA in a timely fashion. In addition, the D/B CDA Developer will be responsible for making sure that any follow up information or materials are provided to the CTRMA in a timely fashion.

Community Involvement: The D/B CDA Developer will participate as a good corporate citizen in community events and activities that take place at the Project site.

Business/Property Owners Roundtable: The D/B CDA Developer will be responsible for supporting the CTRMA's interaction with businesses affected by the construction of the Project. The purpose of the Roundtable is to provide a positive forum for discussion of areas of interest, issue resolution and communications about the Project. The CTRMA will set up the Roundtable and the D/B CDA Developer will assist the CTRMA in managing the relationships, issues and concerns of the impacted business community.

Presentations to Business Groups: The CTRMA will identify business groups and large employers and arrange presentations on the Project. These meetings will be attended by appropriate D/B CDA Developer team representatives who are capable of addressing technical questions related to the

Project. The D/B CDA Developer will be required to prepare presentation and meeting materials for presentations to business groups as directed by the CTRMA.

Business Impact Mitigation Activities: The D/B CDA Developer will be responsible for working with impacted business and property owners to mitigate construction activities. The D/B CDA Developer should develop a plan to help promote impacted business during construction. The plan should identify innovative ways to maintain activity to businesses during construction. Such concepts may include, but not be limited to, enhanced directional signage, special events, advertising and coupon distribution.

Project Fact Sheet: The D/B CDA Developer will create and maintain a current and updated one-page 8-1/2" x 11" full color Project fact sheet which provides essential information about the project including a map and contact information. The D/B CDA Developer will provide sufficient copies of the fact sheet to ensure it is available at all project related meetings. The D/B CDA Developer will provide an electronic copy of the Fact Sheet and all updates to CTRMA.

Monthly Project Status Report: The D/B CDA Developer will create a monthly two (2)-page 8-1/2" x 11" full color Project status report which provides essential information about the Project including a separate attachment listing upcoming Project related events. The D/B CDA Developer will provide sufficient information that will be required by the CTRMA to update the Project webpage. The D/B CDA Developer will provide an electronic copy of the Monthly Project Status Report to the CTRMA.

Photography: The D/B CDA Developer will take professional quality photos of public meetings and events and provide electronic copies to the CTRMA.

Aerial Photography: The D/B CDA Developer will be responsible for quarterly aerial still photography of the Project corridor. The D/B CDA Developer will produce and aerial video of the Project corridor prior to the start of project construction and every six months thereafter. The video will be shot using professional broadcast quality equipment and a gyro-mounted camera system. A broadcast quality copy of each video will be provided to the CTRMA.

Traffic Impacts/Road Closures Notices: The D/B CDA Developer will be responsible for preparing notifications for local media of traffic impacts and road closures. These notices will be provided to media by the CTRMA in a CTRMA approved format that includes a map clearly identifying the roads impacted, closures and detour routes. The D/B CDA Developer shall be responsible for the rental and placement of portable messaging signs (dynamic and static) as required by the approved MOT plan to alert the public to traffic impacts/road closures.

The CTRMA is responsible for the dissemination of all Traffic Impacts/Road Closure Notices to the media. The D/B CDA Developer will provide a copy of all notices to the CTRMA at least two (2) Business Days prior to distribution for approval. In emergency situations the D/B CDA Developer shall respond as outlined in Technical Provision 22.

Project Related Media Releases: The D/B CDA Developer will support the CTRMA communications staff in the development of project related media releases to announce newsworthy Project milestones or events. The D/B CDA Developer will provide background and technical information,

photos and interview sources to the CTRMA. The CTRMA is responsible for the dissemination of all media releases.

4.7 BRIEFINGS, MEETINGS, AND COORDINATION

Project Reports. The D/B CDA Developer shall provide the CTRMA with updates of the Project status, describing and detailing summary of meetings and contacts, and resolutions of complaints. These updates will be provided at the weekly Project status meetings. A monthly written status report shall be submitted.

Briefings. The Developer shall provide information to the CTRMA to the extent necessary to inform stakeholder, landowners and/or as requested by the CTRMA in briefings to affected parties along the corridor, community groups, and other persons. These meetings will generally be held monthly, or more frequently if requested by the CTRMA, for the duration of this Project. The CTRMA will coordinate the meeting locations, dates and times, and public notification.

Purpose. The purpose of these meetings is to keep the attendees informed as to the Project's progress and the status of the various design and construction activities. These meetings shall be informational and not for the purpose of seeking public approval. However, the meetings may result in establishing follow-up meetings with the attending parties that may be used to seek review and/or approval of specific Project elements

Meeting Content. For these meetings, the CTRMA shall provide accommodations, appropriate refreshments, and staff. The D/B CDA Developer shall provide key design or construction personnel, and oral, written, and graphic information, including (but not limited to) the following items:

- The design and location of local streets and utilities impacts
- The design and implementation of street and roadway detours
- Scheduling and hours of construction activities
- Truck haul routes
- Methods to minimize noise and dust
- Turf establishment and environmental mitigation measures
- Any other relevant topics requested by CTRMA, the local municipalities within the Project corridor, landowners, or community groups

Meeting Minutes. For all briefings and meetings at which the D/B CDA Developer is in attendance, the D/B CDA Developer shall, within five Business Days of the meeting, submit a draft of the meeting minutes to the CTRMA for review. After receipt of the CTRMA's approval or comments, the D/B CDA Developer shall incorporate any comments and resubmit to the CTRMA the final minutes within five Business Days. Draft minutes may be submitted electronically; however, the final CTRMA approved minutes shall be submitted as hard copies as well as a final electronic file copy. The CTRMA shall be responsible for the distribution of final CTRMA approved meeting minutes to appropriate parties.

Content of Minutes. At a minimum, all briefing or meeting minutes shall contain:

- A complete list of attendees (including their affiliations, e-mail addresses, and telephone numbers)
- Descriptions of issues discussed
- Decisions made and direction given
- Remaining open issues and action items (including identification of the party responsible for follow-up and the target date for resolution)

Contact Information Database: The D/B CDA Developer shall create and maintain a database with contact information for interested public parties. Upon issuance of NTP, the CTRMA will provide the D/B CDA Developer with an initial list of contact information to be used in the creation of the database. The D/B CDA Developer shall supplement the initial list of contact information with additional information as the Project progresses. The D/B CDA Developer shall provide the contact list to the CTRMA upon request and at the conclusion of the Project in hard copy and electronic formats.

4.8 EMERGENCY RESPONSE ACTIVITIES

If an emergency occurs that affects the safety or protection of persons, the Project, or the property at the site or adjacent thereto, the D/B CDA Developer shall immediately act to prevent and mitigate the threatened damage, injury, or loss. The D/B CDA Developer shall cooperate with law enforcement and other emergency response agencies, especially in addressing concerns about access of emergency providers, and communicate regularly with them via notifications and meetings, as specified in detail in Technical Provision 22.

5.0 PROJECT SCHEDULE

5.1 GENERAL REQUIREMENTS

Responsibility. The D/B CDA Developer shall be responsible for:

- Completing the Interim Development Work by the Interim Completion Deadline
- Meeting the Substantial Completion deadline for the Project as specified in the Contract Documents
- Meeting the Final Acceptance deadline for the Project as specified in the Contract Documents
- Ensuring the adequacy of its Project Schedule
- Managing its resources to meet the requirements of the Contract Documents, including CTRMA reporting and invoicing requirements

Format. The Project Schedule shall be created and maintained in Primavera P6 and formatted so that it supports other required documentation and reports.

5.2 SUBMITTALS

The D/B CDA Developer shall develop, update, and submit the Project Schedule documents listed in Table 5.2 in accordance with this *Section* and other applicable provisions of the Contract Documents, as specified in *Technical Provision 1*, and at the frequency indicated in the Table 5.2.

5.2.1 Project Milestones

The D/B CDA Developer shall produce a Project Schedule that incorporates a critical-path network of all Project activities utilizing general accepted scheduling practices including no open ended logic, not using lags in place of activities and not using constraints except those specified in the contract. The Schedule logic shall reflect a critical path from Project startup to Final Acceptance. Milestones shall be established in the Project Schedule, but shall not exceed the time limits established in the Contract Documents.

**Table 5.2
Submittal of Schedule Documents**

<i>Schedule Document</i>	<i>Initial Submittal with Project Schedule</i>	<i>Monthly Up date</i>	<i>Change Order</i>
Project Schedule	M	M	M
Work Breakdown Structure	M	S	S
Utility Reports	M	M	S
Progress Report	M	M	S
Payment Schedule	M	M	S
Schedule of Values	M	M	S
Minimum Performance Schedule	M	M	S
Lane Rental Bank	M	M	S
QC/QA Certification Report	M	M	M

M = Mandatory submittal.

S = Submittal of revised document in support of other documentation and submittals, when and as applicable.

5.2.2 Limitations on Operations

Legal Holidays and Major Events. The D/B CDA Developer may not conduct any construction activities on the Project ROW on legal holidays, as defined in the *TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* or major events as described in *Exhibit B Section 22*.

Construction Operations. The D/B CDA Developer shall conduct its construction operations in a manner and sequence that ensures the least interference with traffic, with due regard for the location of detours and provisions for handling traffic. If the D/B CDA Developer begins work in an area and the traffic impacts are such that opening of that roadway section is essential to public convenience, the CTRMA may require the D/B CDA Developer to finish that particular section of the Project before starting work on any additional sections.

Nighttime Work Notice. The D/B CDA Developer shall provide the CTRMA written notice in accordance with *Technical Provision 22* before starting any nighttime work. Further, night work will be allowed only if adequate lighting is provided for performing satisfactory inspection and construction operations. The D/B CDA Developer shall be responsible for coordinating and seeking approval of all nighttime activities which may be necessary from local municipalities within the Project corridor. Failure to provide the CTRMA with adequate notice as specified above may result in the CTRMA withholding a portion of the D/B CDA Developer's progress payments. Nighttime work will be considered as any work between the hours of 7:00 p.m. and 7:00 a.m.

5.3 SCHEDULING REQUIREMENTS

5.3.1 Project Schedule

Definition and Function. The planning, design, construction, and completion of the Project shall be undertaken and completed in accordance with the most recent Project Schedule approved by the CTRMA. The Project Schedule is defined as the original Schedule submitted with the Proposal, the approved Baseline Schedule, or the most recently approved revised Project Schedule that has been updated by the most recently approved Monthly Update, as applicable. The Project Schedule shall be used by both the D/B CDA Developer and the CTRMA for planning and monitoring the progress of the Project, and in conjunction with the CTRMA approved Schedule of Values shall serve as the basis for determining the amount of each monthly progress payment to the D/B CDA Developer.

Activities. The Project Schedule shall divide the Project into activities with appropriate logic ties to show the D/B CDA Developer's overall approach to the planning, scheduling, and execution of the Project. Each Project element shall be represented by a Project activity. Activities longer than 30 days must be broken into smaller work elements.

Activity Durations. Project activity durations shall be in Days. Durations shall be established from the Work Breakdown Structure (WBS) of the Project, as described in Section 5.3.2. All activity durations must be established by dividing the total quantity of work by the unit rate. The quantity and workhours will be used to resource load each activity. The D/B CDA Developer shall not use calendar dates to logically begin or complete any Project Activity unless calendar dates are required in the Contract Documents.

Milestones. Each milestone shall be separately identified and conform to any scheduling requirements set forth in the Contract Documents

Prohibitions. The Project Schedule shall not use any float suppression technique, Project activity durations, logic tie, and/or sequence that is deemed unreasonable by the CTRMA.

Cost Allocation. The D/B CDA Developer shall allocate the total Base Technical Proposal Price and commodity quantities to a Schedule of Values to be used for progress payments. Such allocation shall accurately reflect the D/B CDA Developer's cost for each Project activity, and shall not artificially inflate, imbalance, or front-load line items. The price of each Project activity shall be all-inclusive, and shall include all direct and indirect costs, overhead, risks, and profit. The basis of cost allocation shall be units of work or units of material. Although cost information shall be suppressed in the Technical Proposal, it shall be included with the D/B CDA Developer's first Monthly Updates, as outlined in Section 5.4.2, and submitted with the D/B CDA Developer's first pay request.

Early and Late Dates. Early dates shall be based on proceeding with the Project exactly on the Notice to Proceed (NTP) date. Late dates shall be based on completing the Project as required for the D/B CDA Developer milestone exactly as specified by the Schedule submitted in the Proposal, even if the D/B CDA Developer anticipates early completion.

5.3.2 Work Breakdown Structure (WBS)

The D/B CDA Developer shall establish a Work Breakdown Structure (WBS). There shall be clearly identifiable linkage between the Price Proposal and the D/B CDA Developer's designated subactivities, Project activities, and Project phases represented in the Project Schedule; the initial Project Schedule submission; and subsequent Monthly Updates. The D/B CDA Developer shall notify the CTRMA of any changes in Project activity, Project segment designations, or limits in its Monthly Updates and revised Project Schedules, and explain the reasons for the changes.

Subactivities. The WBS for each subactivity shall indicate the duration, timing, and logical relationship to other subactivities, including relationships to Project activities other than its parent activity. Project activity durations shall be no longer than sixty (30) Days, unless otherwise accepted by the CTRMA. The WBS for each Project activity shall be defined in terms of subactivities reflecting the types shown in the Proposal.

For bridges, the Project activities shall be broken down to subactivities, consisting (minimally) of foundations, substructure, superstructure, and decks. Other components of the Project shall be broken down to similar manageable subactivities. Public utility relocations and private utility coordination, if not shown as a Project activity itself, shall be shown as a subactivity for each individual owner when they affect the Project Schedule, where applicable.

Mobilization Items. For mobilization Project activities or subactivities, the D/B CDA Developer shall provide a list of Development Work items that are included in each Project activity or subactivity.

5.3.3 Utility Submittals

All Project Schedule submittals shall include an additional, separate, filtered list of Project activities and sub-activities included in the Project for coordinating with and accomplishing items associated with private and public utilities. These activities shall also be presented in the body of the Project Schedule. Requirements for the Project Schedule, updates, and approved Project Schedule shall also apply to all private and public utilities tasks.

5.4 SCHEDULING DOCUMENTS

5.4.1 Project Schedule

Baseline Submittal. The proposed Schedule of Values shall be made available to the CTRMA for review and approval after selection, but prior to execution of the Contract Documents. The Project Schedule shall be provided to the CTRMA after NTP incorporating the actual NTP date. The D/B CDA Developer shall submit one .xer backup of the schedule and a .pdf file organized by the traffic control sequence. The CTRMA will provide its review comments within 20 Days. If any changes are required, the D/B CDA Developer shall revise and submit those changes within 5 Business Days of the notice provided by the CTRMA.

Contents. Each Project Schedule submittal shall clearly and individually define the progression of the Project within the applicable time frame by using separate Project activities, including (but not limited to):

All Project components, including management, administration, and quality control and acceptance Project activities

The D/B CDA Developer milestones

The procurement of Government Approvals by the D/B CDA Developer or the CTRMA

Interfaces with entities pursuing or undertaking work, such as Utilities and Governmental Entities

Design submittal requirements as specified in Technical Provision 1 and Technical Provision 2

Identification of planned dates of start of construction and early start of construction on any Project activity or phase of the Project

Fabrication of structural steel, precast, pre-stressed concrete structures, and all other major procurement items requiring shop drawing submittal and approval

Material and equipment procurement and their delivery to the site or storage locations

Maintenance of traffic (MOT) activities

The scheduled Final Acceptance date and any changes in Project activities, with an explanation of the reason(s) for the change

Toll SI construction, installation, and testing of toll collection systems

ITS communication Duct Bank and fiber optic cable design, construction and testing

Changes. As it becomes necessary to modify the Project Schedule to reflect changes to the WBS or the WBS logic to further subdivide the necessary labor, equipment, and materials, the D/B CDA Developer shall submit requested changes to the Project Schedule to the CTRMA for approval. Revised Project Schedules shall include a comprehensive listing of all Project activities added or deleted, and a complete listing of all logic and Project activity changes. All changes in the Project Schedule must be fully described in an accompanying narrative. The D/B CDA Developer shall also prepare and submit an associated revised payment curve. No changes to the Project Schedule may be made without written approval of the CTRMA. Until the CTRMA approves a change, all Project Schedule submittals shall continue to be tracked against the previously approved Project Schedule.

Activity and Revision Numbers. The D/B CDA Developer shall use standard and consistent Project activity identification numbers, textual descriptions, and codes in all Project Schedule submittals in a manner acceptable to the CTRMA. Each Project Schedule submittal shall be clearly identified. Resubmissions of a Project Schedule shall use the same revision number, but be individually identified by a sequential appended letter (A, B, etc.).

5.4.2 Monthly Updates

5.4.2.1 Proposed Monthly Updates

With each pay request, commencing in the first full month after issuance of NTP, the D/B CDA Developer shall submit its proposed Monthly Update of the project schedule documents, as listed in Table 5.2, for the CTRMA's review. The D/B CDA Developer shall use the 25th of each month as the data date and shall submit the monthly update before the 27th of each month.

Contents. The Monthly Update shall include the D/B CDA Developer's detailed schedule for executing the Project and all information and reporting required for the Project Schedule, and shall include only resources actually available to the D/B CDA Developer. In addition, the Monthly Update shall minimally include the following current Project data:

Detailed Schedule of activities in .xer and .pdf sorted by the traffic control sequence

Progress for the current pay period for all Project activities

Actual start and actual finish dates for activities and the percentage complete or days remaining for activities started but not completed.

The Monthly Update shall reflect updated progress to the status date, forecast a finish date for in-progress Project activities, and reforecast early dates and late dates for remaining Project activities, but shall otherwise contain no changes in Project activity durations, logic ties, or restraints without the written approval of the CTRMA. It shall also incorporate and fully specify all appropriate information from prior approved Project Schedules.

Updated progress shall be limited to as-completed sequencing and as-completed dates for completed and in-progress Project activities. As-completed data shall include actual start dates (discounting premature, non-representative starts), remaining work days, and actual finish dates, such that the follow-on activity can proceed.

Delays. During the prosecution of the Project, the D/B CDA Developer shall identify and promptly report to the CTRMA any delay(s) in the Project Schedule and progress. The D/B CDA Developer shall develop a recovery schedule whenever the D/B CDA Developer's progress is behind schedule or whenever required by the CTRMA. When requested, the D/B CDA Developer shall submit a recovery schedule with the next Monthly Update immediately following the identification of such Project Schedule delay(s).

CTRMA Review. The CTRMA will review each Monthly Update for consistency with the D/B CDA Developer's WBS and the current approved Project Schedule, and for conformance with the Contract Documents. If requested, the D/B CDA Developer shall correct any deficiencies and resubmit its Monthly Update with the pay request. The CTRMA will notify the D/B CDA Developer of any required corrections within five (5) Business Days of its receipt of the proposed Monthly Update.

The CTRMA will use these updates to manage its activities to be responsive to the D/B CDA Developer's Project Schedule, to analyze monthly progress payments to the D/B CDA Developer,

and to measure the D/B CDA Developer's performance with respect to its plan for accomplishing the Project.

5.4.2.2 Final Monthly Updates

After reaching agreement with the CTRMA on the Project status, the D/B CDA Developer shall prepare and submit (with its monthly pay request) its finalized Monthly Update incorporating or addressing each of the CTRMA's comments.

5.4.3 Disputed Schedule Revision

Withholding of Payment. Because the pay request is based upon the Monthly Update, if the CTRMA and the D/B CDA Developer are unable to agree on a Schedule revision, the CTRMA may withhold partial payment as deemed appropriate by the CTRMA until disagreement is resolved. The disagreement will be resolved through the dispute resolution process in accordance with Section 25 of the Agreement.

5.4.4 Project Schedule Revisions

Change Orders. Changes in the Project Schedule that extend the Final Acceptance deadline shall require a CTRMA-approved Change Order. Upon review and acceptance by the CTRMA of a proposed change order affecting the Project Schedule and/or a Recovery Schedule, such Project activities shall be incorporated into the current Project Schedule and submitted as a revised Project Schedule. These submittals shall be due within ten (10) Business Days of the CTRMA's approval of the Change Order or revised Recovery Schedule.

Approval. Once a revised Project Schedule is approved by the CTRMA, it shall become the Project Schedule of record and be used as the basis for subsequent Monthly Updates.

Contents. Revised Project Schedules shall include a comprehensive listing of all Project activities added or deleted, and a complete listing of all logic and Project activity changes. All changes in the Project Schedule must be fully described in an accompanying narrative. The D/B CDA Developer shall also prepare and submit an associated revised payment curve and Schedule of Values for inclusion in the Change Order covering the revision(s) to the Project Schedule.

5.4.5 Recovery Schedules

If the Project is delayed on any critical-path item as indicated in Section 5.5 of the Agreement, the D/B CDA Developer shall submit a Recovery Schedule.

6.0 RAILROAD COORDINATION

6.1 GENERAL

The limits of this Project do not include any improvements affecting the Railroad properties. This section is not applicable.

7.0 RIGHT-OF-WAY

7.1 GENERAL

Any D/B CDA Developer acquisition of any ROW constituting the Final ROW shall be acquired in accordance with the practices, guidelines, procedures, and methods contained in the following:

TxDOT Right of Way Manual Book I & II (latest edition)

TxDOT Right of Way Acquisition Procedures (latest edition)

TxDOT Appraisal and Review Manual (latest edition)

TxDOT Project Development Process Manual (latest edition)

FHWA's Right-of-Way Project Development Guide (FAPG)

Uniform Relocation and Real Property Acquisition Policies Act of 1970, as amended, and 23 CFR part 710

Texas Government Code Sec. 402.031

Texas Property Code

The D/B CDA Developer shall be responsible for the costs of all services and preparation of all documentation for D/B CDA Developer Designated ROW acquisition and related relocation assistance for the Project.

The D/B CDA Developer's work effort related to D/B CDA Developer Designated ROW acquisition includes, but is not limited to, mapping, surveying, appraisal, appraisal review, negotiation, acquisition services, procurement of title insurance, clearing of title, closing of acquisitions, condemnation support, relocation assistance, clearance/demolition of improvements, and environmental testing and remediation as required as well as all other fees and expenses. Fees and expenses shall include, but not limited to, all required exhibits and photos associated with condemnation services and proceedings with the exception of the attorney fees, relocation assistance, and environmental testing and remediation as required.

7.2 SCHEMATIC RIGHT-OF-WAY MAPS AND DOCUMENTS

The Interim Milestone ROW Maps and the Schematic ROW Maps depict existing and proposed right-of-way sufficient to meet the Schematic ROW needs to construct the Ultimate Design. It shall be the responsibility of the D/B CDA Developer to adequately mark in the field the limits depicted on these maps in order to control and limit its operations to these areas.

7.3 D/B CDA DEVELOPER RESPONSIBILITIES

Design Within Final ROW. The D/B CDA Developer shall provide a Project Design that stays within the Final ROW boundaries.

Required Property Rights. The D/B CDA Developer may not begin construction on any Final ROW unless property rights have been conveyed and recorded in favor of the State of Texas, or unless a right-of-use and possession agreement has been validly executed, delivered by all necessary parties, and approved by the CTRMA.

Clearance/Demolition of Schematic ROW

Following acquisition or possession of any parcel of the Schematic ROW, the D/B CDA Developer shall:

Perform any and all slab and below ground demolition needed to meet the needs of the Project. Miscellaneous removal and disposal operations shall be performed consistent with the applicable provisions of the TxDOT Standard Specifications of Construction and Maintenance of Highways, Streets, and Bridges and applicable Law.

All parcels in the Schematic ROW that contain wells shall have wells capped prior to any construction activities. The D/B CDA Developer shall be responsible for well capping along with any permitting required for Governmental Approvals, as specified in Section 9.

Notify the CTRMA upon completion of the demolition and clearance of the D/B CDA Developer Designated ROW, as applicable.

7.4 D/B CDA DEVELOPER DESIGNATED ROW ACQUISITION AND USE

The D/B CDA Developer shall be responsible for acquiring any site needed for its construction activities or materials storage that is outside of the CTRMA Schematic ROW. The D/B CDA Developer may also, at its own discretion, negotiate temporary easements for construction activities or staging areas with landowners. The CTRMA shall not be obligated to exercise its power of eminent domain in connection with D/B CDA Developer's acquisition of any such temporary right or interest, and the CTRMA shall have no obligations or responsibilities with respect to the acquisition, maintenance or disposition of such temporary rights or interests.

Identification of Correspondence. All correspondence with the CTRMA relating to acquisition of real property by the D/B CDA Developer shall include the following identifying information (at a minimum) as a heading:

County Name

CTRMA Project Numbers

Project Name

Project limits

Parcel number

Name of record owner(s)

Legal Proceedings. If needed, the D/B CDA Developer's staff shall testify as expert witnesses (or the D/B CDA Developer shall provide expert witnesses approved by the CTRMA) for any eminent domain proceedings associated with D/B CDA Developer Designated ROW, and shall be available (as directed by the CTRMA) for depositions; other discovery, prehearing, or pretrial meetings; and appeals. Upon request, the D/B CDA Developer shall prepare and deliver to the CTRMA a copy of all related file documents.

7.4.1 Description of Services

The D/B CDA Developer shall complete and provide the following services as it relates to the D/B CDA Developer Designated ROW of the Project.

7.4.1.1 Title Service

With respect to title services for D/B CDA Developer Designated ROW, the D/B CDA Developer shall:

Select and contract with one (1) or more title companies approved by the CTRMA. Title service shall include the delivery to the CTRMA a five (5) years sales history, a preliminary title commitment or preliminary title report and, if necessary or appropriate, with copies of all underlying documents and a plot of all easements, including but not limited to Existing Utility Property Interests, referenced therein for each parcel (including fee acquisitions, slope easements, other drainage and roadway right of way or easements and abandonment of utility easements) to be acquired by the CTRMA for the Project. Each title report shall be dated not more than ninety (90) Days prior to the date of submittal of the acquisition package for such parcel to the CTRMA. The D/B CDA Developer shall, at its own cost, review each title report to ensure that it complies with the format required by this Section 7. All title reports must be in the required format, clearly indicate which exclusions and exceptions shall be deleted upon acquisition of the subject parcel, and clearly indicate any required deliveries to the title company to clear identified exclusions and exceptions.

Review the preliminary title commitment or report to ensure that all current owners of record title are contacted and that negotiations or condemnation actions are conducted with all appropriate parties.

Work with the current owners of record title to each parcel or interest in a parcel or their designee and all other appropriate parties to clear any title exceptions or exclusions not acceptable to the CTRMA.

Secure an owner's policy of title insurance in the amount of the total acquisition cost for each parcel from a title company acceptable to the CTRMA for each parcel acquired, insuring title as required by the CTRMA. All D/B CDA Developer Designated ROW shall be acquired, and the CTRMA's title in the D/B CDA Developer Designated ROW shall be insured, in fee simple absolute or easement interest as appropriate, free and clear of any and all liens and encumbrances. The D/B CDA Developer shall pay the applicable title company for the cost of the title policies, including all endorsements thereto required by the CTRMA, which title policies must be in form and substance approved by the

CTRMA. Title to the D/B CDA Developer Designated ROW shall be insured in the name of the State of Texas.

7.4.1.2 Appraisal Services

The D/B CDA Developer shall provide the CTRMA with fair market value appraisals prepared by appraisers meeting the minimum qualifications established herein for D/B CDA Developer Designated ROW. All appraisals shall be prepared in conformance with Law (including the *Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, Public Law 91-646* as amended), and in accordance with professional appraisal methods and applicable standards for all parcels to be acquired by the CTRMA. A hazardous waste/materials investigation report will accompany each appraisal report as defined in Section 9. The D/B CDA Developer shall:

Establish personal pre-appraisal contact with each owner of record title and each occupant, and document all contacts.

If possible, secure a written agreement between the record title owner and the D/B CDA Developer granting the CTRMA, the D/B CDA Developer or assignees permission to enter the applicable parcel that is to be acquired (a "Right of entry agreement"). If the D/B CDA Developer, after best efforts, is unable to secure a right of entry agreement from the property owner, the D/B CDA Developer shall provide documentation acceptable to the CTRMA indicating conversations, correspondence, and efforts used to attempt to secure the Right of Entry Agreement.

Contact the record title owners or their designated representatives, in writing, to offer them the opportunity to accompany the appraiser on the appraiser's inspection of the parcel, and maintain a record of all such contacts in the parcel file.

Prepare a complete appraisal report for each parcel to be acquired. The appraisal reports shall comply with and include all matters required by this Section 7.4.1.2 and the related manuals, as specified in Section 7.1, and shall satisfy the requirements of the Appraisal Foundation's *Uniform Standards of Professional Appraisal Practices* (USPAP) in effect at the time the appraisal is submitted. Appraisal reports shall be in the form and format subject to the CTRMA approval. Special analyses, studies or reports, as necessary, shall be made a part of each appraisal.

Obtain and provide the CTRMA with copies of all written leases, licenses and other occupancy agreements to identify lessees, licensee and other occupants with potential compensable interests in each parcel and to determine the value of each such interest.

Testify as an expert witness(es) or provide expert witness(es), approved by the CTRMA, in special hearings or eminent domain proceedings and be available for depositions, other discovery, pre-hearing or pre-trial meetings and appeals, as directed by the CTRMA. The D/B CDA Developer shall also provide administrative and/or technical support for such proceedings as requested by the CTRMA.

Coordinate with the review appraiser regarding corrections and/or additional information that may be required for a particular appraisal.

Cause a report to be prepared by a Licensed Site Professional in the State of Texas for documenting the environmental condition of each parcel; reports may be based on field investigations and/or

historical review, as appropriate for the particular parcel. The report shall be completed in coordination with the appraiser(s) and shall be available to the appraiser(s) prior to completion of the required appraisal reports. The report must indicate the approximate cost to remediate the parcel to achieve its current use and its highest and best use based on available technology for the purpose of permitting the D/B CDA Developer's appraiser(s) to estimate the effect, if any, that the environmental condition of the parcel has on its fair market value. Prepare timely written notification to the CTRMA of any environmental or other concerns associated with the Project Design to be acquired that could require environmental remediation or other special attention.

Confirm and analyze local ordinances for meter supply backflow preventers and/or other special conditions. The installation of any such appurtenances on the parcel remainder shall be handled as a damage issue in the appraisal report, and shall be included as part of the compensation package to the landowner.

The D/B CDA Developer shall prepare updated appraisals, as well as updated appraisal reviews, when required by the CTRMA or as needed during eminent domain proceedings.

Prepare and deliver to the CTRMA upon request, a copy of all file documents, as formally requested in discovery motions or request for production.

Prepare and deliver to the CTRMA a Property Classification Agreement.

7.4.1.3 Appraisal Review

In connection with appraisal review for D/B CDA Developer Designated ROW, the D/B CDA Developer shall:

Select review appraisers, acceptable to the CTRMA, to review the work effort described in Section 7.4.1.2.

Perform an evaluation of all outdoor advertising signs, as required, utilizing the appropriate forms, sign schedule and/or as instructed by the CTRMA.

Determine, in consultation with the CTRMA, if additional appraisal reports or technical expert reports are required. Initiate, review, and reconcile each report as required.

Review all appraisal reports for each parcel to determine consistency of methodology, supporting documentation related to the conclusion reached, and compliance with the CTRMA requirements, as defined in Section 7.1, Section 7.4.1.2, this Section 7.4.1.3, and the Appraisal Foundation's *Uniform Standards of Professional Appraisal Practices* (USPAP) in effect at the time the appraisal is reviewed.

Upon completion of the review outlined above, the appraiser shall certify in writing to the CTRMA that all standards indicated above have been met.

7.4.1.4 D/B CDA Developer Designated ROW Acquisition Package Approval

Acquisition packages for D/B CDA Developer Designated ROW submitted by the D/B CDA Developer for the CTRMA approval shall include the following items prepared in accordance with the requirements of this Technical Provision:

A complete legal description of the parcel, noting the form of granting instrument (fee, easement, etc.) adequate to effect the desired acquisition of the parcel, signed and sealed by a Land Surveyor licensed to practice in the State of Texas. A separate legal description shall be required for each parcel. All descriptions shall be in recordable form and shall be prepared in a form and manner acceptable to the CTRMA in all respects.

A parcel plat, as prepared by the Land Surveyor, and a half size copy of the right of way map pertaining to the parcel. The D/B CDA Developer shall revise the Schematic ROW Maps and Documents as required to reflect the Additional Properties.

A control of access document identifying the rights of access from the un-acquired remainder property to the Project.

An approved right of way justification statement, justifying the acquisition of the parcel, including the parcel number, owner's name(s), location, nature of acquisition (fee, permanent easement, etc.), physical dimensions, and limits of the acquisition. The statement shall include a value engineering analysis if applicable, or analysis of the need to acquire the property vs. construction of a retaining wall, if applicable.

A title report, current within ninety (90) Days, including copies of all documents identified in the exceptions listed therein and a plot of all easements identified therein. The acquisition package shall include the D/B CDA Developer's analysis of each preliminary title report or title commitment to determine potential problems and proposed methods to cure title deficiencies. The D/B CDA Developer shall perform title curative Development Work. The D/B CDA Developer will provide the CTRMA with copies of all curative documents.

A copy of the appraisal report (previously reviewed and approved by the CTRMA), and all supporting documentation and appropriate hazardous materials certifications.

A real/personal property report detailing what items making up each parcel are classified as real estate, tenant-owned improvements or personal property. Particular attention should be paid to items which have questionable classifications.

A relocation plan for carrying out required relocation assistance activities as described in Section 7.4.1.7, below. The D/B CDA Developer shall include all necessary Working and relocation plans, relocation estimates, and appropriate forms to reflect benefits of the parcel. Such plans and estimates shall be prepared by a qualified consultant, in conformance with standard relocation procedures and applicable state Laws and regulations.

The proposed initial offer letter, memorandum of agreement, deed, and any other documents, which shall be prepared by the D/B CDA Developer as required or requested by the CTRMA, on CTRMA letterhead or as directed.

Any other required CTRMA forms, such as record of all contacts with the Property Owner or any party with a compensable interest.

A confirmation statement that a Texas licensed attorney, who has at least three (3) years experience in the acquisition of right-of-way for projects with a condemning authority, and who is familiar with the Uniform Act and other applicable Laws, has been retained by the D/B CDA

Developer and has reviewed and approved the conveyance instruments prepared by the D/B CDA Developer for the parcel and the title report.

Any environmental site assessments prepared for the parcel.

Upon the CTRMA's approval of the acquisition package, the D/B CDA Developer may proceed with the offer to the property owner.

7.4.1.5 Right-of-Way Negotiations

The D/B CDA Developer shall conduct all negotiations for D/B CDA Developer Designated ROW in accordance with the requirements of the governing laws and guidelines. In conjunction with negotiations, the D/B CDA Developer shall:

Within ten (10) Business Days of the CTRMA's approval of the acquisition package, contact each property owner or owner's designated representative, in person where practical, to present the offer and deliver an appraisal report and appropriate brochures. Provide a copy of the appraisal report for the subject property only to the property owner or authorized representative at the time of offer and maintain a file record of receipt of appraisal signed by the property owner. The D/B CDA Developer shall also maintain follow-up contacts and secure the necessary documentation and title curative Development Work upon acceptance of the purchase offer.

Produce and distribute to all property owners and displacees, approved informational brochures as appropriate.

Identify lessees, licensees, occupants, or other parties with potential compensable interests and, if appropriate, after consultation with the CTRMA, negotiate with such parties for the acquisition of their compensable interests.

Provide timely (i.e., not more than ten (10) Business Days after inquiry) response to the verbal or written inquiries of any property owner, lessee, licensee, occupant or other holder of a compensable interest, as applicable.

Prepare a separate negotiator contact report for each meeting or conversation with any person (or their appointed representative(s) supported by a written confirmation of appointment) who has a compensable interest in each parcel.

Maintain a complete parcel file for each parcel. All original documentation related to the purchase of the real property interests will be maintained (housed separately from the relocation files) in conformance with standards, manuals, and procedures, as defined in Section 7.1. Signed original documents shall be forwarded to the CTRMA with a transmittal form.

Advise the property owners, lessee, licensees, occupants, and other holders of compensable interests, as applicable, of the administrative settlement process. Confer with and transmit to the CTRMA any settlement request from property owners, lessees, licensees, occupants, or other holders of any compensable interest, as applicable, including a detailed recommendation from the D/B CDA Developer in accordance with standards, manuals and procedures as defined in Section 7.1. The D/B CDA Developer shall at all times be clear in its dealings with property owners and other holders of compensable interests that the CTRMA shall have ultimate decision authority with

regard to any settlement requests. Delivery of the administrative settlement request and the D/B CDA Developer's recommendation to the CTRMA must occur within five (5) Business Days of receipt.

If requested by the CTRMA, participate in the evaluation of the settlement request and attend required meetings. The D/B CDA Developer shall provide a letter of response to the property owner, lessee, licensee, occupant, or other holder of a compensable interest, as applicable. The D/B CDA Developer shall deliver all settlement responses (if within reasonable proximity of the Project) by hand within three (3) Business Days from receipt. If this delivery method is not feasible, the D/B CDA Developer shall mail (return receipt requested) response letters not more than three (3) Business Days following any decision by the CTRMA. If the D/B CDA Developer uses the mailing option, a follow up call to the property owner will be required to discuss the settlement offer prior to mailing.

Subject to the CTRMA's prior written approval, prepare and deliver a final offer letter to the property owners, lessees, licensees, occupants, or other holders of any compensable interest, as applicable. The letter shall be on the D/B CDA Developer's designed right of way letterhead and shall be signed by the D/B CDA Developer's representative.

Prepare and deliver documents of conveyance (including bisection clause and access clause, if applicable) to the property owner, lessee, licensee, occupant, or other holder of any compensable interest, as applicable, and obtain their execution of the same. All signatures on documents to be recorded shall be notarized in accordance with Texas law.

Appear or provide for the appearance of expert witness(es) or fact witness(es) when requested by the CTRMA. The appearances may include pre-commissioner's hearing preparations, special commissioner's hearings, and subsequent proceedings.

Pursue and obtain Right of Possession and Use Agreements concurrently with the parcel negotiations. The form of Right of Possession and Use Agreements will contain provisions allowing for construction to commence while negotiations are finalized. Such agreements will be sought and negotiated by the D/B CDA Developer strictly in accordance with the Law.

The D/B CDA Developer should be open to all reasonable settlement requests (that comply with the regulations as outlined under this Technical Provision) from the property owners, which are feasible and help expedite the Right of Way process. The D/B CDA Developer should also understand that the CTRMA encourages all positive and creative solutions which satisfy the property owner and promote the success of the Project.

7.4.1.6 Closing Services

For purposes of closing services with respect to D/B CDA Developer Designated ROW, the D/B CDA Developer shall:

Prepare a request for funding in accordance with TxDOT *Right of Way Manual Book I, Subsection 272.01* "Routine Payment Procedures for Negotiated Parcels" or as directed.

Prepare escrow agreement and closing documents, including a closing memorandum identifying all parties involved in the closing, and listing all documents to be executed and/or delivered in connection with the closing.

Attend closings; provide curative documents and exhibits as required and in conjunction with the applicable title company. Confirm that all conditions to closing are satisfied and notify the CTRMA of all closing appointments.

Coordinate with the CTRMA and applicable title company to obtain updated title commitment prior to closing and then obtain an issued title policy based on the approved updated title commitment within thirty (30) Days following closing and transmit the same to the CTRMA.

Obtain and deliver two (2) certified copies of each instrument of conveyance to the CTRMA immediately after closing, and obtain and deliver the recorded original to the CTRMA within ten (10) Business Days thereafter, and provide to the CTRMA a closing binder, including the closing memorandum and an original and two (2) copies of all documents identified in the closing memorandum, within thirty (30) Days following closing.

7.4.1.7 Relocation Assistance

Relocation assistance with respect to D/B CDA Developer Designated ROW shall be provided strictly in accordance with the Law, and, in particular, the Uniform Act and standards. With respect to relocation assistance, the D/B CDA Developer shall:

Provide written notice to all property owners, lessees, licensees, occupants, other holders of compensable interests, and other potential displacees regarding relocation assistance and provide them with a relocation assistance brochure. The D/B CDA Developer shall perform relocation interviews, complete and maintain interview forms and discuss general eligibility requirements, programs, and services with potential displacees. The D/B CDA Developer shall produce relocation assistance brochures as specified above (English and Spanish versions). The D/B CDA Developer shall maintain a written record of all verbal contacts.

Give written notice of the pending acquisition to any non-eligible occupants. Any questions as to the eligibility of a potential displacee should be directed in writing to the CTRMA.

Contact and provide relocation assistance to those parties affected by the Final ROW acquisition and complete appropriate forms for all displacees, as required.

Locate, evaluate and maintain files on comparable available housing, commercial, retail, and industrial sites.

Calculate replacement supplement benefits.

Compute and submit requests for relocation rental/housing supplement to the CTRMA on appropriate forms. All relocation supplements shall be subject to CTRMA approval.

Perform a “decent, safe, and sanitary” inspection for each replacement housing comparable. Prepare and complete appropriate forms.

Request typically two (2) or three (3) moving estimates from moving companies to effect relocation of personal property.

Prepare moving plan with appropriate photos, sketches and inventory of personal property to be moved.

Coordinate moves with displacees and moving companies in accordance with standards found in the Uniform Act.

Maintain relocation contact logs on a form and format approved by the CTRMA.

Attend all closings on replacement properties, if requested by any party involved, and assure supplemental payments, if any, are properly distributed.

Process and compute increased interest payments on the mortgage of owner-occupied dwellings, as required.

Deliver to displacees a ninety (90) day notice of eligibility letter simultaneous with the delivery of the relocation benefits package. Deliver a ninety (90) day letter to displacees with the location of the comparable property used to compute the supplement.

Deliver a thirty (30) day notice to displacees upon acquisition of Final ROW, as applicable. If displacees have not vacated and if the parcel has been acquired, deliver to displacees a thirty (30) day letter to displace.

Notify the CTRMA immediately if a displacee has not moved after the thirty (30) day notice expires. Prepare a written recommendation to facilitate the displacee's move.

Be available for any appeals or hearings.

Prepare relocation payment claim submissions for all displacees and all relocation assistance benefits.

Verify "decent, safe, and sanitary" criteria on all replacement housing as selected by the displacees.

Secure dwellings and structures no later than ten (10) Business Days from vacancy and protect the Final ROW following acquisition and relocation.

Maintain a complete file, separate from acquisition files, on each displacee.

If a parcel referred to the CTRMA for eminent domain also has a relocation issue, the D/B CDA Developer shall be responsible for all relocation activities that may occur after deposit of the Special Commissioner's Award in the courts.

All correspondence to the displacees or their representative(s) will be prepared on the D/B CDA Developer's designated relocation letterhead and will be signed by the D/B CDA Developer's representative.

Deliver to each displacee the relocation assistance payments.

7.4.1.8 Condemnation Support

With respect to the D/B CDA Developer Designated ROW, the D/B CDA Developer shall:

Notify the CTRMA of any potential condemnation and document the reason(s) for condemnation including recommendations for property closure.

Conduct all eminent domain-condemnation activities in accordance with the policies and procedures as described in the TxDOT *Right of Way Acquisition Procedures, Chapter IV: "Eminent Domain"*; in the TxDOT *Appraisal and Review Manual, Chapter 6 "Eminent Domain-State Acquisition"* or as revised; and in *Chapter 21, Texas Property Code*.

After non-response (minimum of 30 Days) or upon receipt of a copy of the rejected final offer from a property owner or other property right holder entitled to compensation, request an updated title report from the title company issuing the original title commitment.

Provide, to the CTRMA, a signed and sealed parcel description and parcel plat, prepare a bisection clause and access clause, if necessary, and attach the clauses to a property exhibit containing the parcel description and parcel plat.

Prepare a packet containing two (2) copies each of the following documents: appropriate forms, negotiation logs, the updated litigation guaranty, negotiator's reports, appraisal receipt acknowledgment, pre-appraisal contact sheet, signed and sealed field notes, parcel sketch, title report, bisection clause and access clause exhibits (if necessary), final offer letter, minute order, any correspondence sent by the D/B CDA Developer or from the owner of the compensable interest or representatives, and one (1) copy of the appraisal report. Submit two (2) complete packets to the CTRMA. All information should be current and no older than ninety (90) days.

Send a copy of the complete petition to the title company and confirm with the title company that the appropriate parties were joined in the case and that no changes in title have occurred since the original litigation guaranty was issued.

Coordinate and provide legal and technical support to the CTRMA's condemnation attorney, or the CTRMA's counsel as required to facilitate filing the petition, assignment of a court, and setting of a hearing date.

Make available to the CTRMA condemnation attorney an agent who will be expected to assist in making arrangements for conferences with witnesses prior to trial, filing the plaintiff's statement, informing the condemnation attorney's office as to the filing date of the statement and the cause number assigned to the suit, and perform any other duties which will assist in the successful prosecution of the suit, including his or her attendance in court and filing necessary documents to complete all eminent domain proceedings.

Depending on the market conditions or if over six (6) months have elapsed since date of the initial offer, contact the attorney handling the case for the CTRMA and confer about the advisability of preparing an updated appraisal. If it is determined that an updated or new appraisal is determined to be necessary or desirable, obtain such appraisal using the same procedures as described in Section 7.4.1.2 above. The D/B CDA Developer must also undertake appraisal review as described in Section 7.4.1.3.

Submit the updated appraisal to the CTRMA and the attorney handling the case for the CTRMA. The CTRMA must approve any revised offer. If a revised offer is approved by the CTRMA, prepare a final

offer letter, make the revised offer to the property owner or other holder of a compensable interest, as applicable, and submit a copy of the final offer letter to the CTRMA.

Communicate with the CTRMA as to the parcel status on a monthly basis.

Serve in person, a "Notice of Hearing" at least ten (10) Business Days prior to the date of hearings as directed by the court.

Call and send a reminder letter two (2) to three (3) weeks in advance of any hearing to the assigned attorney, engineer, technical experts, appraiser, the commissioners, court reporter, and the CTRMA concerning hearing dates.

Upon completion of the hearing, prepare appropriate forms and commissioners' time sheets. Submit forms and commissioners' time sheets to the CTRMA. The D/B CDA Developer shall make payment to all commissioners involved in the hearing and include payment for commissioners as part of general right of way services.

Coordinate and provide support to the CTRMA's counsel and facilitate distribution of copies of award, prepare request for payment, and file notice of deposit.

Appear as an expert witness or fact witness as requested. Make any Subcontractors available to appear as an expert witness or fact witness as requested at the commissioners' hearing or subsequent proceedings.

Prepare exhibits for hearings as deemed appropriate by the CTRMA.

7.4.1.9 Clearance/Demolition of D/B CDA Developer Designated ROW

Following acquisition or possession of any parcel of D/B CDA Developer Designated ROW, the D/B CDA Developer shall:

Secure and protect the buildings, improvements and fixtures on the D/B CDA Developer Designated ROW until they are disposed of or demolished. The D/B CDA Developer shall board-up, mow, and winterize as required by the CTRMA or applicable Law.

Coordinate with the owner and occupants to assure the clearance of personal property from the D/B CDA Developer Designated ROW, as applicable.

Provide for any insect and rodent control and initiate extermination as required to rid the D/B CDA Developer Designated ROW, as applicable, from infestations.

Secure Governmental Approvals required for demolition and environmental surveys or tests (i.e., surveys for asbestos containing materials), and notify the CTRMA in writing of all such activities.

Prepare necessary documentation for disposal of improvements, fixtures and buildings in accordance with applicable Laws and submit the same to the CTRMA. All asbestos containing materials shall be disposed of by the D/B CDA Developer outside of the Final ROW in accordance with TxDOT and the Texas Department of State Health Services regulations.

Provide written notification to the CTRMA of any real and/or personal property remaining on the D/B CDA Developer Designated ROW after vacated by the occupants and not acquired as part of the acquisition.

Terminate all utility service(s) when appropriate.

Process all required forms, documents and permit applications in order to proceed with the timely demolition or removal of any and all improvements, buildings and fixtures located within the D/B CDA Developer Designated ROW, as applicable.

Perform any and all demolition needed to meet the needs of the Project. Evaluate the performance of demolition work and provide the CTRMA with a summary of findings.

Notify the CTRMA upon completion of the demolition and clearance of the D/B CDA Developer Designated ROW, as applicable.

Maintain records on file of all aspects of the clearance/demolition process.

7.4.1.10 Administration and Management of D/B CDA Developer Designated ROW

The D/B CDA Developer shall perform administration and management services of the D/B CDA Developer Designated ROW acquisition services in accordance with the following:

Maintain parcel records on file of all aspects of the acquisition process for D/B CDA Developer Designated ROW in accordance with applicable Law. Each parcel file shall include all documents required by the Contract Documents, Federal Highway Administration, and/or the CTRMA.

Provide monthly summaries of Project expenses including amounts authorized, amounts paid and budget forecasting on a parcel-by-parcel and overall Project basis as requested by the CTRMA.

Provide budget projections and anticipated funding requirements every thirty (30) Days and more frequently as requested by the CTRMA.

Maintain and electronically transmit to the CTRMA, in a format acceptable to the CTRMA, monthly status reports of all parcels and activities related to the D/B CDA Developer Designated ROW, additional D/B CDA Developer required properties acquisition and disposition, and acquisition and disposition of temporary easements or other property interests, and provide weekly updates to the CTRMA.

Provide copies of all incoming and outgoing correspondence as requested. All correspondence shall be numbered in accordance with Section 1.

Evaluate, and report, to the CTRMA, Subcontractor status and performance on a monthly basis or more frequently as requested.

Prepare and submit to the CTRMA, on a monthly basis, an electronically or a spreadsheet that contains D/B CDA Developer Designated ROW specific data as directed by the CTRMA.

Input and update parcel status in web based tracking system or as directed by the CTRMA

7.4.1.11 Project Monitor/Reviewer

The CTRMA or its designee may, at its discretion, review and/or monitor the right of way activities and services performed by the D/B CDA Developer.

The CTRMA will notify the D/B CDA Developer in writing of any monitor/reviewer under Contract Documents with the CTRMA.

In addition to any of the matters specifically required to be provided by the D/B CDA Developer to the CTRMA pursuant to the foregoing sections, the D/B CDA Developer shall provide information to the CTRMA as requested to assist in its review and assessment of the progress, timeliness, adequacy, or sufficiency of the D/B CDA Developer's right of way activities.

7.5 CTRMA RESPONSIBILITIES

The CTRMA will:

Coordinate the acquisition of all Schematic ROW including mapping, appraisal, negotiation, clearing and title, and closing of acquisitions.

Compensate or cause third parties to compensate landowners directly for the final negotiated land cost associated with the final property acquisition of Schematic ROW.

For each parcel of the Final ROW (excluding the D/B CDA Developer's Designated ROW or temporary easements needed for construction), process and issue all approved warrants for payment of agreed purchase prices or awards, and relocation assistance payments involved in the transfer of Final ROW to the CTRMA in accordance with applicable law.

Pay the cost of and be responsible for processing and issuing all payments of agreed purchase prices or awards and relocation assistance payments, related to the Schematic ROW.

Provide final approval of all title reports, appraisals, relocation assistance payments, administrative settlement requests, payments, and other approvals required by applicable law.

Coordinate with CTRMA Legal Counsel to file and prosecute condemnation hearings.

Temporary Easements. The CTRMA will not be responsible for, nor will it participate in obtaining, any temporary easements for construction staging areas or material storage areas that are deemed necessary by the D/B CDA Developer but are outside the Final ROW.

8.0 UTILITIES

8.1 GENERAL REQUIREMENTS

The D/B CDA Developer shall be responsible for coordinating all Utility Adjustment Work necessary for the Project, including coordination, preparation of agreements, design, permitting, construction inspection and maintenance of records. All Utility Adjustment Work must conform to and be performed in accordance with the guidelines specified in Section 8.2.

A number of existing Utilities are located within or in the vicinity of the Schematic ROW, some pursuant to statutory rights and some pursuant to property rights. Certain of those existing Utilities will need to be relocated or otherwise adjusted in order to accommodate the Project. This Section 8 establishes procedures and requirements for Adjusting Utilities including such processes as coordination with Utility Owners, administration of the engineering, construction and other activities necessary for Utility Adjustments, and required documentation. Except as otherwise provided in this Section 8 or directed by CTRMA, whenever a CTRMA form is provided, D/B CDA Developer shall prepare all forms of the same type using the CTRMA form.

The D/B CDA Developer shall cause all Utility Adjustments necessary to accommodate construction, operation, maintenance and/or use of the Project. CTRMA will assist the D/B CDA Developer in the Utility Adjustment process, to the extent described in the Contract Documents. Some Utility Adjustments may be performed by the Utility Owner with its own forces and/or contractors and consultants (i.e., owner-managed); all others shall be performed by the D/B CDA Developer with its own forces and/or Contractors and consultants (subject to any approval rights required by the Utility Owner for those working on its facilities) (i.e., D/B CDA Developer-managed). The allocation of responsibility for the Utility Adjustment Work between the D/B CDA Developer and the Utility Owners shall be specified in the Utility Agreements.

The D/B CDA Developer's obligations regarding reimbursement to Utility Owners for eligible costs of Utility Adjustment Work are set forth in the Utility Agreements.

This Section 8 does not address Utility services to the Project. Utility services to the Project shall be the subject of separate agreements between the D/B CDA Developer and Utility Owners.

8.2 REFERENCED STANDARDS AND GUIDELINES

All Utility Adjustment Work (whether performed by the D/B CDA Developer or by the Utility Owner) shall comply with all applicable Texas Law, federal regulations, all other applicable Laws, the policies of the CTRMA, and all requirements of the Contract Documents including;

- TxDOT ROW Utility Manual
- Utility Owners' appropriate standards
- TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*

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- Texas Manual on Uniform Traffic Control Devices (TMUTCD)
 - TxDOT Standards
 - 43 TAC 21.31 – 21.56 (commonly called the TxDOT Utility Accommodation Rules)

8.3 INFORMATION PROVIDED BY THE CTRMA

The CTRMA investigated existing Utilities within and near the Schematic ROW by means of visual field investigations and record drawings. The investigation results are provided in the Existing Utility Information. This Existing Utility Information provides, to the extent reasonably known to the CTRMA, ownership, approximate location and type.

Acknowledgment. The D/B CDA Developer shall acknowledge (by stating in its Proposal) that the Existing Utility Information does not identify Existing Utility Property Interests or individual property service lines within or adjacent to the Project limits, and may not identify all other Utilities within or adjacent to the Project limits. It is the D/B CDA Developer’s responsibility to coordinate the property services lines, all applicable fees and any additional requirements to restore service to the individual property owners. The Existing Utility Information may not show the Utilities at their correct locations. All station numbers used for such purpose are approximate and the size, ownership, number of lines, type of Utility, or other characteristics may not be correct.

8.4 GENERAL DESCRIPTION OF WORK

D/B CDA Developer Responsibilities. The D/B CDA Developer shall perform or cause to be performed all Utility Adjustment Work necessary for the Project, without regard to any of the following:

- Whether or not the Utility and/or the necessity of the Work was identified before the Proposal date
- Whether or not such Utility was indicated or indicated accurately in Exhibit D – Item 8a – Existing Utility Information
- The extent of the Work necessary to adjust such Utility

Who Does the Work. The D/B CDA Developer shall either:

- Perform all necessary Utility Adjustment Work with its own forces and/or subcontractors and subconsultants, or
- Cause the Utility Adjustment Work to be performed by the Utility Owner with its own forces, its contractors, and/or its consultants

Approval of Locations. Any Utility reinstalled in a new location or adjustment in any manner within the Final ROW shall be installed in a location as proposed by the D/B CDA Developer, based on coordination with all affected parties and subject to approval by the CTRMA. With written approval by the CTRMA and the Utility Owner, Utilities may remain in their existing location if, at the CTRMA’s sole discretion, the requirements of the UAR are met, the location will not adversely

affect the Project, the future operation of the Project, the Project Design, or the safety of the traveling public.

8.5 UTILITY ADJUSTMENT TEAM

The D/B CDA Developer shall provide a Utility Adjustment team with appropriate qualifications and experience to perform the Utility Adjustment Work. The D/B CDA Developer shall provide the names and contact details, titles, job roles, and specific experience of the team members in the PMP. Specifically, the D/B CDA Developer shall provide a Utility Manager (UM) and a Civil/Utility Engineer (CUE) as described herein.

Utility Manager. The UM's primary work responsibility shall be the performance of all of the D/B CDA Developer's obligations with respect to the Utility Adjustment Work. The Utility Manager shall have a Bachelor's degree, and have a minimum of four years of relevant work experience in coordinating and solving complex utility adjustments on highway improvement projects.

Civil/Utility Engineer. The D/B CDA Developer shall designate a Civil/Utility Engineer (CUE) to be responsible for coordinating the Utility Adjustment design with the overall Project Design in accordance with the requirements of this Section 8 during the planning, design, and construction phases of the Work. The CUE shall also provide technical expertise in Utility coordination and ensure that all utility relocations follow the UAR, TxDOT Utility Manual and any standards or specifications set forth by the utility companies.

The CUE shall be a Registered Professional Engineer in the State of Texas and have relevant experience in coordinating and solving complex utility adjustments on highway projects. The CUE should be knowledgeable as to the requirements of the UAR and TxDOT's Utility Manual.

8.6 COORDINATION AND COOPERATION WITH UTILITIES

8.6.1 D/B CDA Developer Role

D/B CDA Developer Responsibilities. The D/B CDA Developer shall be responsible for all coordination with each affected Utility Owner that is necessary and appropriate to accomplish the Utility Adjustment Work.

Scheduling Notice. The D/B CDA Developer shall keep each Utility Owner well informed of the D/B CDA Developer's construction schedules and of changes that affect its Utility facilities, and give each Utility Owner sufficient time to notify its customers of any potential impacts on service.

Cooperation and Partnering. The D/B CDA Developer shall cooperate with Utility Owners to the extent that such cooperation is consistent with the D/B CDA Developer's obligations pursuant to the Contract Documents and the scope of the Project. The D/B CDA Developer shall act diligently in maintaining positive relationships with the Utility Owners.

8.6.2 Failure of Utility To Cooperate

Notice to CTRMA. The D/B CDA Developer shall use its best efforts to obtain the cooperation of each Utility Owner as necessary for the Project. In the event of any dispute with a Utility Owner or non-cooperation by a Utility Owner, the D/B CDA Developer shall comply with the provisions of Section 14.12.5 of the Agreement.

8.7 MEETINGS AND CORRESPONDENCE

8.7.1 Meetings with Utility Owners

Periodic Meetings. The D/B CDA Developer shall implement a schedule of periodic meetings with each Utility Owner's representative for coordination purposes. Such meetings shall begin as early as possible in the design process and shall continue until completion of the Utility Owner's acceptance of Adjustments. The frequency of such meetings shall be appropriate to the matters under discussion with each Utility Owner. The D/B CDA Developer shall provide an opportunity for the CTRMA to participate in such meetings and shall notify CTRMA at least three (3) Business Days in advance of each scheduled meeting. The D/B CDA Developer shall provide notice and an agenda for the meeting to CTRMA.

The D/B CDA Developer shall prepare minutes of each meeting with representatives of a Utility Owner and/or the CTRMA, and shall distribute the minutes to the Utility Owner and the CTRMA no later than five (5) Business Days after each meeting date. The D/B CDA Developer shall provide to the CTRMA copies of all correspondence between the D/B CDA Developer and any Utility Owner no later than five (5) Business Days after receipt or sending, as applicable.

8.7.2 Meetings Between CTRMA and D/B CDA Developer

Requested Meetings. Representatives of the CTRMA and the D/B CDA Developer (including the CUE and other appropriate staff) shall be available to meet at the request of the other Party as necessary to discuss and resolve matters relating to the Utility Adjustment Work, including schedules, design changes, Utility identification, and negotiations with Utility Owners. The D/B CDA Developer shall schedule such meetings and shall provide the CTRMA with prior notice of at least five (5) Business Days.

8.8 VERIFICATION OF UTILITY LOCATIONS

8.8.1 D/B CDA Developer's Responsibility

Sole Responsibility. The D/B CDA Developer bears sole responsibility for ascertaining the exact location, size, type, and all other relevant characteristics of all Utilities in the Final ROW or otherwise affected by the Project, whether located on private property or within an existing public ROW, including all service lines. The D/B CDA Developer's obligation shall include making diligent inquiries at the offices of the Utility Owners, consulting public records, and conducting Subsurface Utility Engineering (SUE), including field studies (such as potholing), as appropriate. The D/B CDA

Developer shall take into consideration the possibility that the information provided by the CTRMA may be inaccurate, and that the Utility Owners may also have provided to the D/B CDA Developer inaccurate or inexact information about their facilities.

Field Verification. Accurate field verification of some Utilities may be required to design Project features to avoid conflicts, to Adjust the Utility, or to conclude that neither action is necessary. The extent of information needed and the information provided for each Utility facility will be decided by mutual agreement between the D/B CDA Developer and the Utility Owner. Field verification information shall be supplied, both horizontally and vertically, in the Project control datum to accurately apply the locations to the Project drawings and databases.

D/B CDA Developer shall prepare and submit to CTRMA, no later than thirty (30) Days before the first assembly package is submitted, a Utility Strip Map showing the information obtained and/or confirmed pursuant to this Section 8.8.1. D/B CDA Developer's Utility Strip Map shall show in "plan view" all of the Utilities within the Final ROW or otherwise impacted by the Project, in each case detailing the type of Utility facility (communication, gas, oil, water, etc.) and the Utility Owner's name and contact information. The scale of the Utility Strip Map shall be 1" – 200'.

8.8.2 Notification as to Newly Identified Utilities

If the D/B CDA Developer's investigations identify any previously unidentified Utility, the D/B CDA Developer shall notify the CTRMA immediately upon such discovery.

8.8.3 Utility Tracking Report

The D/B CDA Developer shall maintain a Utility Tracking Report in tabular form that lists all Utilities located within the Final ROW or otherwise potentially affected by the Project. The Utility Tracking Report shall be maintained current at all times and shall be submitted to the CTRMA (both in electronic and hard copy formats) monthly. The Utility Tracking Report shall contain the following information for each Utility listed thereon:

The name of the Utility Owner and a unique identification number for tracking

A brief description of the Utility by size and type

The location of the Utility, based upon Project control datum or by station and offset

The proposed treatment of the Utility (e.g., protection in place or reinstallation in a new location) and (if the Utility is to remain in its original location) the date such treatment was approved by the CTRMA

Identify any Utility Betterments, and the Party (the D/B CDA Developer or the Utility Owner) responsible for funding the Utility Adjustment and performing the Work

Dates on which the Utility Agreement was executed by: Utility Owner, D/B CDA Developer and CTRMA

Dates on which the Utility Joint Use Acknowledgement was executed by the Utility Owner and by the CTRMA

Whether any New Utility Property Interest will be necessary for the Adjustment

The nature of the Utility Owner's existing right of occupancy of the ROW for such Utility (e.g., Utility Joint Use Acknowledgement, permit, notice, easement, or a combination of these);

The scheduled start and completion dates of construction of each Utility Adjustment

The actual start and completion dates of construction of each Utility Adjustment

The status of construction for each Utility Adjustment, including percentage complete

Updating and Sorting. The first Utility Tracking Report shall identify all changes from and additions to the information provided by the CTRMA. Each subsequent version of the report shall identify all changes from the previous version.

8.9 ADMINISTRATIVE REQUIREMENTS

8.9.1 Standards

All Utility Adjustment Work shall comply with all applicable Laws, the Technical Documents, the Utility Owner Standards/Specifications and the requirements specified in this Section 8.

8.9.2 Real Property Matters

The D/B CDA Developer shall provide the services described below in connection with existing and future occupancy of property by Utilities.

8.9.2.1 Documentation of Existing Utility Property Interests -- Affidavits

For each Existing Utility Property Interest within the Project ROW claimed by any Utility Owner, the D/B CDA Developer shall include an affidavit of property interest in the applicable Utility Assembly, with documentation of the Existing Utility Property Interest (e.g., an easement deed) attached. Any such claim shall be subject to CTRMA's review as part of its Utility Assembly review. Except as otherwise directed by CTRMA, the D/B CDA Developer shall prepare all Affidavits of Property Interest using the standard forms.

8.9.2.2 Acquisition of Replacement Utility Property Interests

Each Utility Owner will be responsible for acquiring any Replacement Utility Property Interests that are necessary for its Utility Adjustments. The D/B CDA Developer shall have the following responsibilities for each acquisition:

- a) The D/B CDA Developer shall coordinate with, and provide the necessary information to, each Utility Owner as necessary for the Utility Owner to acquire any Replacement Utility Property Interests required for its Utility Adjustments.

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- b) If any of the D/B CDA Developer-Related Entities assists a Utility Owner in acquiring a Replacement Utility Property Interest, such assistance shall be by separate contract outside of the Work, and the D/B CDA Developer shall ensure that the following requirements are met:

The files and records must be kept separate and apart from all acquisition files and records for the Final ROW.

The items used in acquisition of Replacement Utility Property Interests (e.g., appraisals, written evaluations and owner contact reports) must be separate from the purchase of the Final ROW. Any D/B CDA Developer Group staffers negotiating the acquisition of Replacement Utility Property Interests must be different from those negotiating the acquisition of Final ROW.

D/B CDA Developer is responsible for preparation of all documentation for Utility Owner condemnation proceedings. The Utility Owner will be responsible for prosecuting such condemnations.

8.9.2.3 Relinquishment of Existing Utility Property Interests

The D/B CDA Developer shall cause the affected Utility Owner to relinquish each Existing Utility Property Interest within the Final ROW, unless the existing Utility occupying such interest is either (i) remaining in its original location or (ii) being reinstalled in a new location still subject to such interest.

8.9.2.4 Quitclaim Deeds

Except as otherwise directed by CTRMA, D/B CDA Developer shall prepare a Quitclaim Deed for each relinquishment of an Existing Utility Property Interest using CTRMA's standard form. Each Quitclaim Deed shall be subject to CTRMA's review as part of a Utility Assembly as described below.

The D/B CDA Developer understands and expects that a Utility Owner will not relinquish any Existing Utility Property Interest until after the Adjusted Utility has been accepted by the Utility Owner in its new location. Accordingly, instead of an executed Quitclaim Deed, the Utility Assembly for such a Utility Adjustment shall include a letter signed by the Utility Owner's authorized representative confirming that the interest will be quitclaimed upon completion of the Utility Adjustment, and a copy of the unsigned Quitclaim Deed. In these cases, the D/B CDA Developer shall obtain the executed Quitclaim Deed promptly upon completion of the Utility Adjustment.

8.9.2.5 Utility Joint Use Acknowledgements

The D/B CDA Developer shall prepare a "Utility Joint Use Acknowledgment" for:

- a) Each Utility proposed to be relocated within the Final ROW
- b) Each Utility proposed to remain in its existing location within the Final ROW;

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- c) Any Existing Utility Property Interest located within the Final ROW that is not required to be relinquished pursuant to Section 8.9.2.3 – Relinquishment of Existing Utility Property Interests, and is not addressed in the foregoing clause (a) or clause (b).

Except as otherwise directed by CTRMA in its sole discretion, the D/B CDA Developer shall prepare all Utility Joint Use Acknowledgments using CTRMA’s standard form. The D/B CDA Developer also shall prepare all required documentation to be included with each Utility Joint Use Acknowledgment.

The D/B CDA Developer shall arrange for the Utility Owner to execute each Utility Joint Use Acknowledgment. Each Utility Joint Use Acknowledgment (executed by the Utility Owner) shall be subject to CTRMA's approval as part of a Utility Assembly.

8.9.2.6 Documentation Requirements

The D/B CDA Developer shall prepare, negotiate (to the extent permitted by this Section 8.9.2), and obtain execution by the Utility Owner of (and record in the appropriate jurisdiction, if applicable) all agreements and deeds described in this Section 8.9.2, including all necessary exhibits and information concerning the Project (e.g., reports, plans and surveys). Each agreement or deed shall identify the subject Utility(ies) by the applicable Utility Assembly Number (290E-U [4 digit Number beginning with 0100]), and shall also identify any real property interests by parcel number or highway station number, or by other identification acceptable to CTRMA.

8.10 AGREEMENTS

8.10.1 Certain Components of the Utility Adjustment Work

Coordination. The D/B CDA Developer shall communicate, cooperate, and coordinate with CTRMA, the Utility Owners and potentially affected third parties, as necessary for performance of the Utility Adjustment Work. The D/B CDA Developer shall be responsible for preparing (unless prepared by the Utility Owner) and securing execution (by the D/B CDA Developer and the Utility Owner) of all necessary Utility Agreements. All executed Utility Agreements between the D/B CDA Developer and Utility Owners must be approved by CTRMA prior to taking effect.

Betterments. 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. Utility Enhancements are not included in the Work; however, any Betterment work furnished or performed by the D/B CDA Developer as part of a Utility Adjustment shall be deemed added to the Work, on the date the Utility Agreement providing for same becomes fully effective. D/B CDA Developer shall perform all coordination necessary for Betterments.

Protection in Place. The D/B CDA Developer shall be responsible for Protection in Place of all Utilities impacted by the Project as necessary for their continued safe operation and structural integrity and to otherwise satisfy the requirements described in Section 8.9.1.

Abandonment and Removal. The D/B CDA Developer shall make all arrangements and perform all work necessary to complete each abandonment or removal (and disposal) of a Utility in accordance with the requirements listed in Section 8.2, including obtaining Governmental Approvals and consent from the affected Utility Owner and any affected landowner(s) (or shall confirm that the Utility Owner has completed these tasks).

Service Lines and Utility Appurtenances. Whenever required to accommodate construction, operation, maintenance and/or use of the Project, D/B CDA Developer shall cause Service Line Adjustments and Utility Appurtenance Adjustments. On completion of these, D/B CDA Developer shall cause full reinstatement of the roadway, including reconstruction of curb, gutter, sidewalks, and landscaping, whether the Utility Adjustment Work is performed by the Utility Owner or by D/B CDA Developer.

Early Utility Adjustments. The CTRMA will coordinate and Adjust certain Utilities in advance of NTP issuance. The D/B CDA Developer will be responsible for completing all Utility Adjustment Work not completed by the CTRMA.

8.10.2 Agreements Between D/B CDA Developer and Utility Owners

Except as otherwise stated in this Section 8 or in the CDA, each Utility Adjustment shall be specifically addressed in a Master Utility Adjustment Agreement (MUAA) or in a Utility Adjustment Agreement Amendment (UAAA). The D/B CDA Developer is responsible for preparing, negotiating (to the extent allowed by this Section 8), and obtaining execution by the Utility Owners, of all Utility agreements, (including preparing all necessary exhibits and information about the Project such as reports, plans and surveys). A Utility agreement is not required for any Utility Adjustment consisting solely of Protection in Place in the Utility's original location within the Final ROW, unless the Utility Owner is being reimbursed for costs incurred by it on account of such Protection in Place.

8.10.3 Master Utility Adjustment Agreements

The D/B CDA Developer shall enter into one or more MUAAs with each affected Utility Owner to define the design, material, construction, inspection, and acceptance standards and procedures necessary to complete Utility Adjustments, as well as to define the D/B CDA Developer's and the Utility Owner's respective responsibilities for Utility Adjustment costs and Utility Adjustment activities such as material procurement, construction, inspection and acceptance. A MUAA may address more than one Utility Adjustment for the same Utility Owner. Additional Adjustments may be added to an existing MUAA by a Utility Adjustment Agreement Amendment (UAAA).

The D/B CDA Developer shall prepare each MUAA using the CTRMA's standard form for the Master Utility Adjustment Agreement (Owner-Managed) or the CTRMA Master Utility Adjustment Agreement (D/B CDA Developer-Managed).

Promptly following issuance of the Notice to Proceed, the D/B CDA Developer shall begin negotiations with each affected Utility Owner to reach agreement on one or more MUAAs. The D/B

CDA Developer shall use good faith efforts to finalize a MUAA with each affected Utility Owner within a reasonable time period after issuance of the Notice to Proceed. The D/B CDA Developer shall include any proposed changes to a standard form (other than filling in blanks that are specific to a particular Utility Owner) in a Utility Owner-specific addendum. Each MUAA (including the Utility Adjustment Plans attached thereto) shall be subject to CTRMA approval as part of a Utility Assembly.

8.10.4 Utility Adjustment Agreement Amendments

Except where informal modification is permitted pursuant to *Section 8.12.6 – Utility Adjustment Field Modifications*, modification of an executed MUAA or any component thereof, after it has been approved by CTRMA as part of a Utility Assembly, shall be stated in a Utility Adjustment Agreement Amendment (UAAA). A UAAA may be used only when the allocation of responsibility for the Utility Adjustment Work covered by that UAAA is the same as in the underlying MUAA; otherwise, an additional MUAA will be required.

Each UAAA (including any Utility Adjustment Plans attached thereto) shall be subject to CTRMA's approval as part of a Supplemental Utility Assembly. Except as otherwise directed by CTRMA or provided in an applicable MUAA, the D/B CDA Developer shall prepare all UAAAs using the standard form provided.

8.11 DESIGN REQUIREMENTS

8.11.1 General Design Criteria

All design plans for Utility Adjustment Work, whether furnished by the D/B CDA Developer or by the Utility Owner, shall be consistent and compatible with the following:

- The applicable requirements of the Contract Documents
- The Project as designed and constructed
- Any other Utilities being installed in the same vicinity
- All applicable Governmental Approvals
- Private approvals of any third parties necessary for such work proposed

The D/B CDA Developer shall prepare a conceptual Utility design (a Utility Adjustment Concept Plan) for the Project showing the approximate location of each existing Utility, the existing Utilities to remain, and the D/B CDA Developer's Utility Adjustment recommendation. The D/B CDA Developer shall submit the plan to the CTRMA for its review. The Utility Adjustment Concept Plan shall be submitted in both tabular and plan formats. The plan shall be color-coded and shall utilize a scale that clearly depicts all of the required information. The D/B CDA Developer shall coordinate with the affected Utility Owners as necessary to obtain their respective concurrence with the Utility Adjustment Concept Plan as initially submitted to CTRMA and with any subsequent revisions.

8.11.2 Utility Adjustment Plans

Utility Adjustment Plans, whether furnished by the D/B CDA Developer or by the Utility Owner, shall be signed and sealed by a Registered Professional Engineer licensed in the State of Texas.

8.11.3 Plans Prepared by the D/B CDA Developer

Where the D/B CDA Developer and the Utility Owner have agreed that the D/B CDA Developer will furnish a Utility Adjustment design, the D/B CDA Developer shall prepare and obtain the Utility Owner's approval of plans, specifications, and cost estimates for the Utility Adjustment (collectively, "Utility Adjustment Plans") by having an authorized representative of the Utility Owner sign the plans as "reviewed and approved for construction." The Utility Adjustment Plans (as approved by the Utility Owner) shall be attached to the applicable Utility Agreement, which D/B CDA Developer shall include in the appropriate Utility Assembly for CTRMA's approval. All Utility Adjustment Plans must be signed and sealed by a Registered Professional Engineer.

Unless otherwise specified in the applicable Utility Agreement(s), all changes to Utility Adjustment Plans previously approved by the Utility Owner (excluding estimates, if the Utility Owner is not responsible for any costs) shall require written Utility Owner approval. D/B CDA Developer shall transmit any CTRMA comments to the Utility Owner, and shall coordinate any modification, approval by the Utility Owner and re-submittal to CTRMA as necessary to obtain CTRMA's approval.

8.11.4 Plans Prepared by the Utility Owner

For all Utility Adjustment Plans to be furnished by a Utility Owner, the D/B CDA Developer shall coordinate with the Utility Owner as necessary to confirm compliance with the applicable requirements. Those Utility Adjustment Plans shall be attached to the applicable Utility Agreement, which D/B CDA Developer shall include in the appropriate Utility Assembly for CTRMA's approval. The D/B CDA Developer shall transmit any CTRMA comments to the Utility Owner, and shall coordinate any modification, review by the D/B CDA Developer and re-submittal to CTRMA as necessary to obtain CTRMA's approval.

8.11.5 Design Documents

Each proposed Utility Adjustment shall be shown in the Design Documents, regardless of whether the Utility Adjustment Plans are prepared by the D/B CDA Developer or by the Utility Owner.

8.11.6 Certain Requirements for Underground Utilities

Casing as specified in the Utility Accommodation Rules shall be used for all underground Utilities crossing the Final ROW. However, high-pressure gas and liquid petroleum pipelines may be allowed to cross the Final ROW without steel casing as long as the requirements of the Utility Accommodation Rules are met. All high-pressure gas pipelines within the Final ROW shall comply with a design factor "F" = 0.6 or less as required by the class location of the pipeline.

8.11.7 Utility Assemblies

Each Utility Adjustment (as well as each Utility remaining in place in the Project ROW and not requiring any Protection in Place or other Utility Adjustment) shall be addressed in a Utility Assembly prepared by the D/B CDA Developer and submitted to CTRMA for its review and comment, and for CTRMA's approval of any items for which this *Section 8* requires CTRMA's approval. Each Utility Assembly will also be submitted to TxDOT for review and approval. Each Utility Adjustment shall be addressed in a full Utility Assembly, unless it is appropriate for a Supplemental Utility Assembly or Abbreviated Utility Assembly, as described below. The D/B CDA Developer shall coordinate with the Utility Owner to prepare all components of each Utility Assembly. Completion of the review and comment process for the applicable Utility Assembly, as well as issuance of any required CTRMA approvals, shall be required before the start of construction for the affected Utility Adjustment Work.

Provisions governing the procedure for and timing of Utility Assembly submittals are in *Section 8.13 - Deliverables*.

All Utility Adjustments covered by the same initial MUAA shall be addressed in a single full Utility Assembly, which shall include all items as described below:

- a) A transmittal memo recommending approval and detailing any unique characteristics or information pertaining to the subject Utility Adjustment(s); the memo also shall briefly explain the need for the Adjustment(s)
- b) A completed Utility Assembly checklist (using CTRMA's then-standard form for such purpose)
- c) A proposed Utility Agreement which has been executed by the Utility Owner and D/B CDA Developer (one original in each of the three original Utility Assemblies); required attachments shall be included
- d) Utility Adjustment Plans (in paper format) with all information necessary, and in proper format, which:
 1. Show plan and profiles of the existing Utility facilities and proposed Adjustments
 2. Show any existing highway ROW lines, the Final ROW lines and control of access lines
 3. Show the proposed roadway features of the Project and other Utilities in the vicinity
 4. Show the final Project grade and any railroad profiles in order to determine whether clearance requirements are met
 5. Show an offset distance from the Final ROW line to the proposed Utility facility, for each Utility which will parallel (and be within) the proposed Final ROW lines (whether proposed to remain in place or be reinstalled in a new location)
 6. Show dimensions to Utility facilities with station and offset in relation to the Final ROW line

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7. Show symbols and major material items
 8. Provide the Utility Owner's specifications for the Adjustment
 9. Present sufficient information to enable CTRMA to verify compliance with UAR requirements (including depth of cover, casing requirements, vent locations, etc.)
 10. Are color coded on at least one of the three original Utility Assemblies for each Utility or group of Utilities
 11. Shall be no larger than 11" x 17" folded to 8.5" x 11" size (oversize plans are not permitted with the Utility Assembly, and plans shall be folded so as to be able to pull the plans out of the assembly, sheet by sheet)
 12. Clearly identify Betterments
 13. Are signed and sealed by a Registered Professional Engineer, whether provided by D/B CDA Developer or the Utility Owner, unless waived at CTRMA's sole discretion.
- e) Estimate(s) from the Utility Owner detailing costs within the cost categories established in 23 CFR 645.117
 - f) Proposed Utility Joint Use Acknowledgement(s) executed by the Utility Owner, if required pursuant to Section 8.9.2.5 – Utility Joint Use Acknowledgements (one original for each affected Utility in each original Utility Assembly)
 - g) Statement(s) covering construction contract work (using CTRMA's then-standard form for such purpose), if the Utility Owner intends to contract out design and/or construction work
 - h) Affidavit(s) of property interest, if required by Section 8.9.2.1 – Documentation of Existing Utility Property Interests – Affidavits
 - i) An executed Quitclaim Deed (or correspondence confirming a future quitclaim together with a draft of the same) for each Existing Utility Property Interest required to be relinquished in accordance with Section 8.9.2.3 – Relinquishment of Existing Utility Property Interests (one original in each original Utility Assembly for each Existing Utility Property Interest). Whether prepared by D/B CDA Developer or the Utility Owner, the Utility Adjustment Plans shall identify any Replacement Utility Property Interests necessary for the Adjustment and shall conform to the deliverable requirements of the Contract Documents.

Supplemental Utility Assemblies. For each UAAA, the D/B CDA Developer shall prepare a supplement to the Utility Assembly for the relevant initial MUAA (a "Supplemental Utility Assembly"), covering all Utility Adjustments addressed in the UAAA. The Supplemental Utility Assembly shall contain a transmittal memo, Utility Assembly Checklist, proposed UAAA cost estimate, a proposed UAAA which has been executed by the Utility Owner and D/B CDA Developer (one original in each of the two original Supplemental Utility Assemblies) including all required attachments, and applicable revisions to the Utility Adjustment Plans, as well as Utility Joint Use Acknowledgement(s) and Affidavit(s) of Property Interest, if applicable. The transmittal memo shall briefly describe the desired amendment, and explain why the amendment is necessary. Each of the foregoing items shall comply with the requirements for same described in this Section 8.

Abbreviated Utility Assemblies. The D/B CDA Developer shall prepare an Abbreviated Utility Assembly for each Utility proposed to remain at its original location within the Project ROW that is not required to be addressed in a MUAA or UAAA, or for a group of such Utilities. Each Abbreviated Utility Assembly shall contain a transmittal memo recommending that the subject Utility(ies) remain in place, a completed Utility Assembly Checklist, a certification from the Utility Owner approving leaving the Utility(ies) in place, as well as Utility Joint Use Acknowledgement(s) and Affidavit(s) of Property Interest, if applicable. Each of the foregoing items shall comply with the requirements for same described in this Section 8.

8.12 CONSTRUCTION

8.12.1 General Construction Criteria

All Utility Adjustment construction performed by the D/B CDA Developer shall conform to the requirements listed below. In addition, the D/B CDA Developer is responsible for verifying that all Utility Adjustment construction performed by each Utility Owner conforms to the requirements described below. In case of nonconformance, the D/B CDA Developer shall cause the Utility Owner (and/or its contractors, as applicable) to complete all necessary corrective work or to otherwise take such steps as are necessary to conform to these requirements.

- a) All criteria identified in Section 8.2 – Reference Standards and Guidelines
- b) The Utility Adjustment Plans included in the Utility Agreement approved by CTRMA (other than Utility Adjustment Field Modifications complying with Section 8.12.6 – Utility Adjustment Field Modifications)
- c) All Project safety and environmental requirements
- d) The ROW acquisition schedule

8.12.2 Inspection of Utility Owner Construction

The D/B CDA Developer shall inspect all Utility Adjustment Work performed by Utility Owners (and/or their contractors) to verify compliance with the applicable requirements described in Section 8.12.1 – General Construction Criteria.

8.12.3 Scheduling Utility Adjustment Work

The Utility Adjustment Work (other than construction) may begin at any time following issuance of NTP. The D/B CDA Developer shall not arrange for any Utility Owner to begin any demolition, removal, or other construction work for any Utility Adjustment until all of the following conditions are satisfied:

The Utility Adjustment is covered by an executed Utility Agreement (and any conditions to commencement of such activities that are included in the Utility Agreement have been satisfied);

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1. Availability and access to any affected Replacement Utility Property Interest has been obtained by the Utility Owner (and provided to the D/B CDA Developer, if applicable);
 2. If applicable, the Federal Utility Procedure List has been approved by FHWA, and either (a) the affected Utility is on the approved Federal Utility Procedure List, as supplemented, or (b) the Utility Owner is on the approved Federal Utility Procedure List, as supplemented
 3. The review and comment process has been completed and any required approvals have been obtained for the Utility Assembly covering the Utility Adjustment;
 4. All Governmental Approvals necessary for the Utility Adjustment construction have been obtained, and any pre-construction requirements contained in those Governmental Approvals have been satisfied; and
 5. Any other conditions to that work stated in the Contract Documents have been satisfied.

8.12.4 Standard of Care Regarding Utilities

The D/B CDA Developer shall carefully and skillfully carry out all Work impacting Utilities and shall mark, support, secure, exercise care, and otherwise act to avoid damage to Utilities. At the completion of the Work, the condition of all Utilities shall be as safe and permanent as before.

8.12.5 Emergency Procedures

D/B CDA Developer shall provide emergency procedures with respect to Utility Adjustment Work in the PMP. D/B CDA Developer shall obtain emergency contact information from, and establish emergency procedures with each Utility Owner.

8.12.6 Utility Adjustment Field Modifications

The D/B CDA Developer shall establish a procedure to be followed if a Utility Adjustment Field Modification is proposed by either the D/B CDA Developer or a Utility Owner, after the Utility Assembly (which includes the Utility Adjustment Plans) has been approved. The procedure shall contain, at minimum, the following processes:

- a) The Utility Owner's review and approval of a Utility Adjustment Field Modification proposed by the D/B CDA Developer, or the D/B CDA Developer's review and approval of a Utility Adjustment Field Modification proposed by the Utility Owner;
- b) Submittal of plans for the proposed Utility Adjustment Field Modification to CTRMA for its approval;
- c) Transmittal of Utility Adjustment Field Modifications to the appropriate construction field personnel;
- d) Inclusion of any Utility Adjustment Field Modifications in the Record Drawings for the Project.

The D/B CDA Developer shall cause the procedure to be followed for all Utility Adjustment Field Modifications, whether the construction is performed by the D/B CDA Developer or by the Utility Owner.

8.12.7 Switch Over to New Facilities

After a newly Adjusted Utility has been accepted by the Utility Owner and is otherwise ready to be placed in service, the D/B CDA Developer shall coordinate with the Utility Owner regarding the procedure and timing for placing the newly Adjusted Utility into service and terminating service at the Utility being replaced.

8.12.8 Record Drawings

The D/B CDA Developer shall provide Record Drawings to each Utility Owner for its Adjusted Utilities, in accordance with the applicable Utility Agreement(s).

The D/B CDA Developer shall provide Record Drawings to CTRMA (regardless of whether design and/or construction of the subject Utilities was furnished or performed by the D/B CDA Developer or by the Utility Owner). These drawings shall show the location of, and label as such, all abandoned Utilities, shall show and label all other Utilities, whether remaining in place or relocated, located within the Final ROW or otherwise impacted by the Project. The D/B CDA Developer shall provide the Record Drawings for each Adjustment to CTRMA not later than ninety (90) Days after the Utility Owner accepts the Adjustment or before such earlier deadline as is specified elsewhere in the Contract Documents.

8.12.9 Maintenance of Utility Service

All Utilities shall remain fully operational during all phases of construction, except as specifically allowed and approved in writing by the Utility Owner. The D/B CDA Developer shall schedule Utility Adjustment Work in order to minimize any interruption of service, while at the same time meeting the Project Schedule and taking into consideration seasonal demands.

8.12.10 Traffic Control

The D/B CDA Developer shall be responsible for, and the traffic control plan shall cover, all traffic control made necessary by Utility Adjustment Work, whether performed by the D/B CDA Developer or by the Utility Owner. Traffic control for Adjustments shall be coordinated with, and subject to approval by, the local agency(ies) with jurisdiction. Traffic control shall comply with the guidelines of the TMUTCD.

8.13 DELIVERABLES

The D/B CDA Developer deliverables described in this Section shall be submitted in accordance with the Project Schedule, taking into account CTRMA's designated review and response time

pursuant to the Agreement. All deliverables shall conform to the standards required in the DQMP and the CQMP.

8.13.1 Maximum Number of Submittals

The D/B CDA Developer shall coordinate all Submittals required pursuant to this Section 8, so as not to overburden CTRMA's staff and consultants. In each calendar week, the D/B CDA Developer shall not submit more than:

- a. Two Utility Assemblies (excluding Supplemental or Abbreviated Utility Assemblies)
- b. Two of any documentation constituting any of the following:
 - A modified or additional item submitted in response to CTRMA comments on a particular Utility Assembly
 - A Quitclaim Deed
 - Any other type of relinquishment document
- c. Two Supplemental Utility Assemblies;
- d. Two Abbreviated Utility Assemblies.

8.13.2 Utility Assembly Submittals

The following procedure shall govern submittal and review of each Utility Assembly, including Supplemental and Abbreviated Utility Assemblies:

- a) Before submitting a Utility Assembly to CTRMA, the D/B CDA Developer shall:
 - Verify that each subject Utility (or the Utility Owner) is on the approved Federal Utility Procedure List, if applicable
 - Submit the complete Utility Assembly to the quality control/quality acceptance entity designated by the D/B CDA Developer in accordance with the PMP; and
 - Resolve all comments made by the quality control/quality acceptance entity, coordinating with the Utility Owner as appropriate.
- b) The D/B CDA Developer shall submit to CTRMA three identical and complete originals of each Utility Assembly (each of which shall be bound and labeled "D/B CDA Developer Copy", "CTRMA Copy", or "Utility Owner Copy", as appropriate). These submittals shall be for CTRMA's review and comment, except for any components of the Utility Assembly for which CTRMA's affirmative approval is required by this Section 8.13.

CTRMA will review the Utility Assembly for compliance with the requirements of this Section 8.13.2, and within ten (10) Business Days shall return the Utility Assembly to the D/B CDA Developer with the appropriate notations to reflect its responses. D/B CDA Developer shall transmit any CTRMA comments to the Utility Owner, and shall coordinate any modification, review and approval by the Utility Owner and re-submittal to CTRMA, as necessary to resolve all CTRMA comments and/or

obtain CTRMA's approval, as applicable. Upon (a) CTRMA's approval of any Utility Assembly components for which CTRMA's approval is required, and (b) completion of the review and comment process for all other Utility Assembly components, CTRMA will sign three originals of any approved UJUA and of any other components of the Utility Assembly for which this Section 8 requires CTRMA's signature. FHWA Federal Procedure

The D/B CDA Developer will develop the Federal Utility Procedure List that includes the utility owner's name, approximate station numbers and estimated cost. CTRMA will then submit to the FHWA the Federal Utility Procedure List in order to obtain FHWA authorization for federal reimbursement. Promptly upon determining that any additional Utility Owner not referenced on the Federal Utility Procedure List is impacted by the project, the D/B CDA Developer shall submit to CTRMA all documentation as referenced above in order to update the Federal Utility Procedure List.

CTRMA will forward the approved Federal Utility Procedure List (and any amendments thereto) to the D/B CDA Developer, promptly upon receipt of same from the FHWA.

9.0 ENVIRONMENTAL COMPLIANCE

9.1 GENERAL

The D/B CDA Developer shall be responsible for completing the Development Work in accordance with the requirements identified in this Section 9, and all applicable Laws and Governmental Approvals. The D/B CDA Developer shall be responsible for creating environmental awareness among all project personnel, ensuring completion of environmental tasks and mitigation, and documenting that the environmental aspects of the Development Work are completed in accordance with all applicable Laws, Governmental Approvals, and the provisions of the Environmental Monitoring Program.

The D/B CDA Developer shall be responsible for performing the environmental commitments reflected in the Environmental Documents and all other Governmental Approvals. Unless specifically noted in the Agreement, all duties, responsibilities, and obligations assigned to CTRMA in the Environmental Documents, hereby will be the responsibility of D/B CDA Developer.

The D/B CDA Developer shall develop, implement, operate, and maintain an environmental protection program for the Work. The program shall require the D/B CDA Developer to protect the environment and document the measures taken during the performance of the Development Work to minimize impacts on the environment from the design, construction and long-term operation of the Project.

The environmental protection program shall:

- Deliver the highest level of environmental commitment from Developer, as required by the RFDP, Contract Documents, the Environmental Documents, Governmental Entities, Governmental Approvals, permits, rules, and applicable Law

- Establish and implement environmental goals consistent with those demonstrated by CTRMA's actions in completing the environmental approvals process

- Implement and document environmental training of employees and encourage all the D/B CDA Developer's group members to consider the natural environment in all Development Work activities

- Demonstrate and relay D/B CDA Developer's environmental commitments to CTRMA, the Governmental Entities, oversight groups, and the general public. Communication with the general public will be in accordance with Section 4.

- Establish and implement a "zero environmental violation" approach to all Development Work activities

- Monitor and report on D/B CDA Developer's program – monitoring and reporting must be concise and constant throughout the duration of the Work

- Report any and all violations of Laws and/or Rules, conditions to CTRMA within twenty-four (24) hours after discovery or immediately for violations which are required by Law to

have immediate notification of State or federal emergency response coordinators (i.e., the National Response Center), and in accordance with the notification requirements of the appropriate regulatory document or guidance

Address violations of environmental criteria, Environmental Approvals and commitments with appropriate and timely response

Unless directed otherwise, the D/B CDA Developer shall be responsible for adhering to all Environmental Approvals and mitigation measures required for the Work, including those stated in the Environmental Documents and subsequent Environmental Approvals.

9.2 ENVIRONMENTAL APPROVALS

9.2.1 CTRMA-Provided Approvals

Environmental Documents have been prepared by CTRMA, or its representatives, during the planning phase of the Project to obtain certain Environmental Approvals, which specify mitigation requirements and recommendations. CTRMA-Provided Approvals are based on the Schematic ROW associated with the Schematic Plan as presented in the Environmental Documents.

9.2.2 D/B CDA Developer Responsibility for Obtaining Environmental Approvals

As part of the Development Work, the D/B CDA Developer shall obtain all required Environmental Approvals other than the previously secured CTRMA-Provided Approvals. In cases that require CTRMA or FHWA to act as the coordinating party, the D/B CDA Developer shall provide all required data and support necessary to secure such Environmental Approvals. The following is a list of potential Environmental Approvals that the D/B CDA Developer may be required to obtain for the Project or provide assistance to CTRMA for CTRMA-Provided Approvals:

- ▣ Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit for storm water pollution discharges from construction sites. A Notice of Intent (NOI) must be filed with the TCEQ, and a SW3P must be prepared for the Work, as required by the TCEQ. Changes in stormwater permitting or requirements arising out of Phase II stormwater rules should be anticipated and incorporated into the D/B CDA Developer's compliance program and costs.
- ▣ Support for consultation with the USFWS under Section 7 of the ESA will be required if new species or habitats are listed or if changes to the Schematic Plan impact listed species or habitats not addressed in CTRMA-Provided Approvals. Additionally, consultation will be necessary if listed species or habitats, above and beyond that addressed in CTRMA-Provided Approvals, are discovered within the Project area.
- ▣ Section 404 Permit – CWA. To meet the requirements set forth in USACE Nationwide Permits (NWP), the D/B CDA Developer shall span all waters of the US or if work is performed below the ordinary high water mark, stay within the criteria limits of the NWP. The D/B CDA Developer shall be required to assist with additional coordination with the

USACE as necessary to secure required permitting, including any coordination required for nationwide permits. If design changes to the Schematic Plan result in compensatory mitigation, the D/B CDA Developer shall implement any USACE approved compensatory mitigation plan for impacts to jurisdictional waters.

- ▣ Section 401 Permit CWA. The D/B CDA Developer shall be required to comply with the TCEQ requirements for implementation of erosion control and pollution prevention BMPs as outlined in the SW3P. The D/B CDA shall be required to submit a notice of intent (NOI) with the TCEQ.
- ▣ Section 106 of the NHPA. TxDOT has conducted intensive archaeological surveys within the Schematic ROW required for archaeological sites and clearance from THC has been obtained for the Schematic Plan. Acquisition of Additional Properties may result in the need for additional clearance from THC.
- ▣ Authorization from the SHPO, in accordance with ACT, for previously unknown cultural resource sites discovered during construction or impacts due to design changes consistent with the Programmatic Agreement.
- ▣ National Flood Insurance Program (NFIP) authorization from FEMA, for impacts to 100-year floodways and/or floodplains of designated waterways. Review and comment by FEMA may also be required if proposed construction causes an increase in the base flood elevation in excess of that allowed under the governing rules of the NFIP. Extensive hydrologic and hydraulic analysis and the submittal of a Conditional Letter of Map Revision pursuant to the NFIP regulations to the appropriate authorities for review(s) and approval(s) prior to the beginning of construction within the NFIP regulated areas may be required if design changes are made to the Schematic Plan.

If previously issued Environmental Approvals become invalid or need amending due to changes to the Schematic Plan, the D/B CDA Developer, with the support and oversight of CTRMA, shall be responsible for application revisions, supplements, reassessment and coordination with appropriate Governmental Entities as necessary to secure or amend Environmental Approvals. Additional costs and delays to the Development Work associated with securing additional Environmental Approvals shall be addressed in accordance with the provisions of Section 7.5 and Section 14 of the Agreement.

9.2.3 Coordination Between D/B CDA Developer, CTRMA and Regulatory Agencies

The D/B CDA Developer shall prepare all applications for Environmental Approvals other than CTRMA-Provided Approvals. The CTRMA will review and approve the applications, sign as the applicant where and if required, and return the documentation to the Developer for submittal to the appropriate Governmental Entity. The CTRMA shall be provided a reasonable opportunity to review and approve completed applications and supporting documentation for Environmental Approvals prior to their submission and shall have the right to disapprove the same by written notice to the D/B CDA Developer. Copies of all environmental submittals, correspondence, and

secured Environmental Approvals shall be provided to CTRMA and maintained in accordance with the guidelines of Section 1 along with related requirements found within this Technical Provision.

The D/B CDA Developer shall, with the CTRMA oversight, negotiate all Environmental Approvals and conditions with appropriate Governmental Entities. The D/B CDA Developer shall consult and coordinate with the CTRMA on all negotiations concerning Environmental Approvals. In cases that require the CTRMA or FHWA personnel to act as the coordinating party, such as consultation with USFWS, the D/B CDA Developer shall provide required personnel support and data concerning Development Work and potential environmental impacts necessary to secure Environmental Approvals.

9.3 PERFORMANCE REQUIREMENTS

9.3.1 Environmental Mitigation Guidelines

9.3.1.1 Development of the Project Mitigation Plan

Two mitigation items, a noise barrier and USACE Pre-construction Notice, were presented in the EA and FONSI but are no longer required for the current Schematic Plan. If changes to the current Schematic Plan are made, the D/B CDA Developer shall develop a Project Mitigation Plan that fully details the mitigation requirements for the new design. A Project Mitigation Plan may require the preparation of the following Environmental Documents as applicable to the Project:

Categorical Exclusion

Reevaluations to the EA

Permits secured from Governmental Entities

Modifications due to the environmental impacts of the Final Design shall be assessed and provided by the D/B CDA Developer. The D/B CDA Developer accepts and recognizes that during Environmental Approval coordination procedures with Governmental Entities, additional resource-specific mitigation plans, such as for jurisdictional waters or threatened and endangered species may be required to procure Environmental Approvals. The D/B CDA Developer shall coordinate and implement these additional resource-specific mitigation plans. The Project Mitigation Plan shall be updated monthly, to reflect resource-specific mitigation plans as developed and approved by the CTRMA and Governmental Entities. Delays or added costs resulting from revisions to the Project Mitigation Plan will be addressed in accordance with the provisions set forth in the Section 14 of the Agreement.

9.3.1.2 Compliance with Mitigation Requirements

The D/B CDA Developer shall prepare all Final Designs and specifications for any environmental mitigation required for the Development Work. Additionally, the D/B CDA Developer will be

responsible for conducting all necessary monitoring of mitigation areas and necessary remedial work as required to meet the conditions established by the Project Mitigation Plan. Qualified individuals or recognized experts in the appropriate field shall conduct all mitigation and monitoring activities. Appointments of such personnel shall be subject to review and approval by CTRMA. The cost of all such mitigation and monitoring activities shall be borne by D/B CDA Developer. Any additional mitigation required as a result of amendments or modifications to Environmental Approvals except where such additional mitigation is required solely as a result of CTRMA-Directed Changes shall also be borne by the D/B CDA Developer. The D/B CDA Developer shall perform the acquisition of Mitigation Sites in conformance with the requirements of Section 7.

9.3.2 Hazardous Materials Requirements

The D/B CDA Developer shall prepare a plan for the safe handling, storage, treatment and/or disposal of Hazardous Materials that are brought onto the Site by the D/B CDA Developer during performance of the Development Work ("Hazardous Materials Management Plan"). The Hazardous Materials Management Plan shall include, at a minimum (1) a listing of all hazardous materials, and for each the quantities, a brief description of the hazardous characteristics and the Material Safety Data Sheet (MSDS); (2) defined appropriate storage practices, including designation of approved containers, container labeling, and storage locations; (3) designated responsible individuals, and (4) procedures for proper disposal. The Hazardous Materials Management Plan shall also include a plan for personnel training addressing management and response to hazardous waste situations and a contingency plan for any spills or releases, including response and/or containment procedures and reporting requirements. Lastly, the Hazardous Materials Management Plan shall address procedures for preparing Phase II Sampling and preliminary assessment Scopes of Work for suspect Hazardous Materials Sites, and IWP and SIR reports in the event that Hazardous Materials are discovered during construction activities. The Hazardous Materials Management Plan shall be updated monthly. The D/B CDA Developer shall submit the Hazardous Materials Management Plan to the CTRMA for its approval within 90 Days after issuance of NTP. The D/B CDA Developer shall revise the Hazardous Materials Management Plan to address the CTRMA's comments. The D/B CDA Developer shall not commence construction until the Hazardous Materials Management Plan has been approved in writing by the CTRMA in its sole discretion.

9.3.2.1 Previously Documented Hazardous Material Sites

During the Environmental Documents process, federal and state regulatory environmental databases were searched in general conformance with the recommended search distances referenced in *ASTM Practice E-1527-00*. Details concerning documented Hazardous Materials sites, if identified, are provided in the Environmental Documents. The D/B CDA Developer shall be responsible for the investigation and appropriate remediation of Hazardous Materials in accordance with applicable Law and Project guidelines set forth in Section 9.3.2.3.

D/B CDA Developer initiated design changes to the Schematic ROW may result in impacts to the previously documented Hazardous Material sites in the corridor. Additionally, the development of Additional Properties, such as staging areas, field office sites, borrow sites, stockpile locations and other areas, may also result in impacts to the known Hazardous Material sites. In both these cases,

the D/B CDA Developer shall be responsible for the investigation of potential Recognized Environmental Conditions (as defined in ASTM E-1527-00) and appropriate remediation of Hazardous Materials in accordance with applicable Law and Project guidelines set forth in Section 9.3.2.3.

Hazardous Materials contamination shall be taken into account by the D/B CDA Developer during all subsequent phases of Project development including ROW negotiation and acquisition, property management, design, and construction.

9.3.2.2 Undocumented Hazardous Materials

For the following described sites, the D/B CDA Developer shall investigate the presence of Hazardous Materials in accordance with the requirements and multi-component approach set forth in ASTM Standard E-1528-00 for *Performing Transaction Screen Environmental Site Assessments for Commercial Real Estate*. Reference to such ASTM standards shall include the tasks and procedures described therein.

Design changes requiring Additional Properties outside of the previous search corridor
D/B CDA Developer's staging areas, field office sites, borrow sites, stockpile locations
Unrecorded sites/materials discovered during Work

If previously unknown Hazardous Materials or other potential Recognized Environmental Conditions are encountered or suspected in the soil and/or shallow groundwater of the Schematic ROW, mitigation sites, or any parcels added during construction operations, appropriate measures for the proper assessment, characterization, remediation, and management of the contamination shall be initiated and performed in accordance with applicable Law. The D/B CDA Developer shall be entitled to compensation as described in the Section 7.5 and Section 14 of the Agreement.

9.3.2.3 Hazardous Materials Planning and Investigation

If Hazardous Materials are encountered within any of the following:

The Schematic ROW
Additional Properties
D/B CDA Developer's design changes to the Schematic Plan
D/B CDA Developer's staging areas, field office sites, borrow sites, or stockpile locations

The D/B CDA Developer shall prepare an Investigative Work Plan (IWP) that addresses the methods, techniques, and analytical testing requirements to adequately characterize the extent of the contaminated media (soil and/or groundwater) potentially impacting the Project. The D/B CDA Developer shall assess the likely source of contamination and assess CTRMA's responsibility with regard to such contamination.

The level of investigation and remedial action ultimately performed will be determined based on the "Responsible Party" status of CTRMA. "Responsible Party" status refers to which party is responsible for the corrective or preventive action. If CTRMA is responsible for the contamination, full corrective action may be required. "Corrective Action" is the cleanup, removal, or stabilization of Hazardous Materials-contaminated soil and/or groundwater as required for compliance with Environmental laws. However, if CTRMA is not the Responsible Party, the extent of any response will be "preventive" in nature rather than "corrective". "Preventive Action" refers to the cleanup, removal, or stabilization of Hazardous Materials-contaminated soil or groundwater required facilitating construction of the Project. In contrast with Corrective Action, Preventive Action is concerned primarily with worker health and safety issues as well as taking all appropriate steps to ensure that the proposed construction will not make worse, or aggravate, the existing contamination.

A Registered Professional Engineer and other qualified professionals, as needed, shall prepare the IWP and other necessary reports in accordance with applicable TCEQ regulations and guidance. The IWP shall contain the following elements, at a minimum:

- ▣ D/B CDA Developer's plan and schedule for characterization of all areas of the Final ROW and Work, where Hazardous Materials may reasonably be expected to be encountered, including a Sampling and Analysis Plan describing sampling locations, methods, and criteria for sample selection; media to be sampled; laboratory analyses, methods and quantification limits; investigation schedule, site security measures; location and layout of work zones, storage areas, and decontamination areas; management of investigation derived waste, and quality assurance/ quality control procedures
- ▣ D/B CDA Developer's plan and schedule for identifying and eliminating or controlling potential risks to site workers, the public and the environment. This portion of the IWP should be developed in accordance with the Developer's Safety and Health Plan

Following review by the CTRMA, the D/B CDA Developer shall submit the IWP to the applicable TCEQ program as appropriate and if required, for review and approval prior to implementing fieldwork activities. The D/B CDA Developer shall then implement the plan and complete all investigative activities necessary in accordance with the IWP and applicable TCEQ regulations and guidance.

Upon satisfactorily completing the investigative work, the D/B CDA Developer shall summarize the findings within a Site Investigation Report (SIR) and make recommendations regarding potential response actions necessary for Project development. The D/B CDA Developer shall take hazardous materials contamination into account during all subsequent phases of Project development including ROW negotiation and acquisition, property management, design, and construction.

Issues to be addressed in the SIR include: the characterization of the impacted area; sampling efforts and findings; opportunities to avoid the contamination by adjusting the design; level of response action warranted if the contamination cannot be avoided; feasibility of initiating response actions prior to construction; pursuit of cost-reimbursement from responsible parties; the need for

completing response actions concurrent with construction; and nature of any special specifications and provisions necessary for incorporation into the Project.

Following review by the CTRMA, scopes of work may be developed to initiate additional work as may be required.

All investigations and plans shall be completed in full conformance with applicable federal and state standards, including TCEQ, OSHA, USDOT, EPA, and CTRMA standards, and applicable supplemental and special provisions.

9.3.3 Noise/Sound Abatement Requirements

9.3.3.1 Construction Noise Mitigation

The D/B CDA Developer shall implement appropriate measures to minimize construction noise. The D/B CDA Developer shall include a detailed listing of the appropriate construction noise mitigation measures in the Project Mitigation Plan and shall implement a training program to ensure employees and subcontractors are educated as to the construction noise abatement requirements, see [Section 9.5](#).

9.3.4 Air Quality Mitigation

The D/B CDA Developer shall implement all required emission reduction measures required under applicable Laws and/or Rules pertaining to the minimization of impacts on air quality due to emissions and airborne dust. The D/B CDA Developer shall utilize a combination of watering, chemical stabilization, and vehicle speed reduction (to 20 miles per hour) to minimize and control dust and other air quality impacts of the Work. If airborne dust levels exceed acceptable levels, the D/B CDA Developer shall water the construction sites to reduce the dust to the extent practicable or shall implement other environmentally sound means as appropriate under the Project Mitigation Plan. Watering and other mitigation measures to minimize air quality impacts shall be increased as necessary based on construction traffic, forecasted wind speeds, and persistent dry weather conditions.

9.3.5 Wildlife and Vegetation

The D/B CDA Developer shall be responsible for designing and conducting all construction in accordance with applicable Laws pertaining to the avoidance and minimization of impacts on wildlife and vegetation and in accordance with the Environmental Approvals.

If changes to the Schematic Plan initiated by the D/B CDA Developer result in impacts to areas outside of the Schematic ROW described in CTRMA-Provided Approvals, a field determination of wildlife and vegetation impacts will be required for all Additional Properties, as well as the D/B CDA Developer's staging areas, field office sites, borrow sites, and stockpile locations.

9.3.5.1 Wildlife and Vegetation Mitigation

The D/B CDA Developer shall be responsible for implementing all mitigation measures to minimize construction and long-term impacts of the Development Work as prescribed in CTRMA-Provided Approvals and subsequent Environmental Approvals secured by the D/B CDA Developer. Wildlife and vegetation mitigation measures shall include, but not be limited to, demarcation of sensitive wildlife areas, protection of active bird nests, control of invasive plant species, and employee/subcontractor training.

9.3.5.2 Threatened and Endangered Species

All known occurrences of federally listed Threatened and Endangered Species have been documented along the proposed Schematic ROW as detailed in the Environmental Documents; however, other species in the region may become listed as Threatened and Endangered Species during the life of the Development Work that were not previously addressed in CTRMA-Provided Approvals. In addition, unrecorded sites with currently listed Threatened or Endangered Species may be discovered during pre-construction surveys or during construction. The D/B CDA Developer shall be responsible for additional surveys, consultation with Governmental Entities, and implementation of mitigative measures required to address potential impacts to these species. The D/B CDA Developer shall also be responsible for additional surveys, consultations, and mitigation measures to address impacts to previously documented species due to D/B CDA Developer-directed changes to the Schematic ROW. Costs and delays of Development Work relating to Threatened and Endangered Species listed following NTP will be handled in accordance with the provisions of *Section 7* and *Section 14* of the Agreement.

The D/B CDA Developer shall not conduct any clearing or construction activities in Threatened and Endangered Species habitat, except for those activities specifically authorized in CTRMA-Provided Approvals and subsequent Environmental Approvals. CTRMA-Provided Approvals and subsequent Environmental Approvals do not cover ancillary development on Additional Properties and the D/B CDA Developer will be solely responsible for securing any Environmental Approvals necessary in accordance with all applicable Laws regarding Threatened and Endangered Species.

If changes to the Schematic Plan initiated by the D/B CDA Developer result in impacts to areas outside of the Schematic ROW, a determination of potential impacts to Threatened and Endangered Species habitat will be required for all Additional Properties, as well as the D/B CDA Developer's staging areas, field office sites, borrow sites, and stockpile locations. Results of the surveys shall be presented to CTRMA, which will determine coordination requirements.

9.3.5.3 Mitigation Requirements

The D/B CDA Developer shall furnish the necessary personnel, materials, services, equipment and facilities, and otherwise do all things necessary for and incidental to the performance of the construction in a manner consistent with accepted professional standards and procedures found in *50 CFR Part 402.12* of the ESA. The D/B CDA Developer shall comply with the ESA and applicable implementing regulations.

9.3.6 Cultural Resources

The D/B CDA Developer shall be responsible for conducting cultural resource surveys and coordination with Governmental Entities, with the CTRMA review and oversight, associated with Additional Properties. The D/B CDA Developer is responsible for the protection of known and currently unidentified historic properties, archeological, and/or paleontological sites, or other items of cultural significance encountered during the design and construction of the Work, in compliance with Section 106 of the NHPA, the ACT, and other applicable Laws.

The D/B CDA Developer shall be responsible for coordination and acquisition of all necessary Antiquities Permits from the Texas Historic Commission (THC) required for surveys of Additional Properties and areas outside of the Schematic ROW. The D/B CDA Developer shall provide the Antiquities Permit application materials to the CTRMA for review and acceptance, prior to submittal to the THC for processing.

If evidence of a possible historic property is encountered during the course of the Work, the D/B CDA Developer shall immediately cease Work in the immediate area and contact the CTRMA. The D/B CDA Developer shall undertake appropriate measures to protect the site from further intrusion to the extent feasible until an appropriate evaluation of the site can be made by a qualified representative. Work shall not resume in the area until the D/B CDA Developer receives notification and approval from the CTRMA.

9.3.6.1 Compliance with Existing Agreements

The D/B CDA Developer shall comply with the mitigation and performance requirements in CTRMA-Provided Approvals, including but not limited to the Programmatic Agreement (PA) between the FHWA, Advisory Council on Historical Preservation and THC.

9.3.6.2 Pre-Construction Responsibilities

Prior to the initiation of any construction activities on Additional Properties, including clearing and staging operations, the D/B CDA Developer shall be responsible for identification and testing for cultural resources for the Additional Properties and all the D/B CDA Developer's staging areas, field office sites, borrow sites, and stockpile locations. All identification and testing shall be conducted by qualified firms/individuals and shall involve ground examination, with subsurface testing in areas that exhibit the potential for buried archeological deposits. The D/B CDA Developer, with the CTRMA oversight, shall be responsible for conducting identification and testing for cultural resource investigations in accordance with all applicable Laws as necessary to secure clearances. The D/B CDA Developer shall submit a Cultural Resource Pre-Survey Report to the CTRMA providing:

The initial survey application permit

The location of D/B CDA Developer's properties to be surveyed

The intended use of each Property

Results and recommendations of the D/B CDA Developer surveys of Additional Properties, staging areas, field office sites, borrow sites, and stockpiles areas for the occurrence of threatened and/or endangered species in the areas to be surveyed for Cultural Resources

NOTE: *The CTRMA will review the D/B CDA Developer recommendations. If recommendations warrant, the D/B CDA Developer, in cooperation with the CTRMA and FHWA, will coordinate with USFWS, or select an alternate site.*

A brief statement of qualifications of the firm/individual conducting the survey

The survey methodology

The D/B CDA Developer shall prepare technical reports presenting the results of the identification and testing for cultural resources of the D/B CDA Developer's properties and the Additional Properties for review by the CTRMA and submittal to SHPO. The D/B CDA Developer will be responsible for all costs associated with additional cultural resource surveys, testing, and report preparation for D/B CDA Developer's properties and Additional Properties.

NOTE: *If during identification, the D/B CDA Developer finds evidence of a potentially National Register of Historic Places-eligible cultural resource site in a proposed Additional Property, the D/B CDA Developer will be responsible for selecting an alternate Additional Property if an acceptable alternate Additional Property is available, or if an acceptable alternate Additional Property is not available, conducting testing if agreed to by the CTRMA in its sole discretion.*

The D/B CDA Developer shall avoid and minimize impacts to cultural resources, when feasible, during the site selection process for all Additional Properties. The CTRMA will be responsible for coordinating and conducting any data recovery activities for cultural resources identified on the Additional Properties, in the event an acceptable alternate property cannot be identified. An acceptable alternate Additional Property must (i) accommodate the stated purpose; (ii) to the extent possible, avoid impacts to Section 106 properties, and (iii) be approved in writing by the CTRMA, at the CTRMA's sole discretion.

9.3.6.3 Cultural Resource Requirements During Construction

If evidence of archeological deposits is encountered during construction, the D/B CDA Developer shall cease Development Work in the immediate area and contact the CTRMA. The CTRMA will then initiate discovery procedures under the provisions of the Programmatic Agreement. Development Work shall not be resumed in the area until the D/B CDA Developer receives written notification and approval from the CTRMA.

9.3.7 Water Quality

The D/B CDA Developer shall be responsible for conducting all construction in accordance with applicable Laws, pertaining to the minimization of impacts on water quality. The D/B CDA Developer shall minimize impacts to water quality during construction through the implementation of a SW3P, and comply with conditions of the 401 certification. Because of the potential effects of

the Development Work on water quality, the D/B CDA Developer shall include temporary and permanent storm water management measures in the design and construction of the Work.

The D/B CDA Developer shall maintain all permanent and temporary controls as indicated in the SW3P, and 401 certification and as required by the CTRMA and Governmental Entities. When the maintenance of facilities does not meet the satisfaction of the CTRMA or Governmental Entities, the D/B CDA Developer shall immediately implement a corrective/restorative action. If the Development Work is not performed in a timely or effective manner to satisfaction of the CTRMA or the Governmental Entities, the CTRMA shall perform the necessary Development Work at D/B CDA Developer's expense.

Guidance documents, such as *Storm Water Management Guidelines for Construction Activities* (CTRMA publication) provide a detailed discussion of BMPs that are suitable for use during roadway construction. The proceeding sections outline the regulatory compliance and storm water management requirements.

9.3.7.1 TPDES Construction General Permits

The D/B CDA Developer shall comply with the TCEQ Storm Water Program regulations in accordance with the TPDES requirements as governed by TCEQ. The D/B CDA Developer must prepare and submit a NOI and SW3P to the CTRMA for review and acceptance, and then submit the NOI to the TCEQ for coverage under the Construction General Permit for storm water discharges from construction sites, as detailed in Section 402 of the CWA and regulations promulgated thereunder, including Phase II stormwater rules.

The D/B CDA Developer shall be responsible for the implementation of all provisions in the SW3P for the Work. Additionally, the D/B CDA Developer shall be responsible for securing necessary approvals for the Development Work under the Municipal Separate Storm Sewer System (MS4) program of NPDES, if applicable.

9.3.7.2 Not Required

9.3.7.3 Storm Water Management BMPs

The D/B CDA Developer shall include the type and location of permanent water pollution control measures, if required, in the Final Design. These may include retention ponds, wet ponds, sand filters, and grassed swales. Additionally, the D/B CDA Developer shall prepare a plan for the proper and effective installation and use of temporary water pollution control measures to prevent avoidable water pollution during construction activities. The D/B CDA Developer shall design the measures to meet the requirements in CTRMA-Provided Approvals and all Laws applicable to the TPDES Construction General Permits, including requirements arising from Phase II of the stormwater rules. The temporary water pollution control BMP should be implemented as described in the SW3P for construction activities. Such measures shall be subject to the acceptance by the CTRMA and approval by the TCEQ.

9.3.8 Groundwater Impacts and Requirements

If domestic water wells are encountered, the D/B CDA Developer shall seal the well in accordance with TCEQ well abandonment procedures prior to roadway construction so that storm water runoff from the roadway cannot use a derelict well as an avenue for groundwater contamination. If potential contamination of the well or any other well near or in the Final ROW occurs, the D/B CDA Developer shall notify the CTRMA and TCEQ within twenty-four (24) hours of discovery and undertake appropriate measures to remediate the contamination. The D/B CDA Developer shall be responsible for all costs associated with sealing all known, as well as unknown wells, which may be encountered within the Final ROW.

9.3.9 Floodplain Encroachment

The D/B CDA Developer shall design and construct the roadway at all drainages to minimize impacts on the 100-year floodplain elevation in accordance with the requirements of Section 15.

9.3.10 Jurisdictional Waters, Including Wetlands

The D/B CDA Developer shall support CTRMA in initiating any coordination, if required, with the USACE to determine the permitting and mitigation requirements for the Project under Section 404 of the CWA.

The D/B CDA Developer shall be responsible for compliance with permit conditions under Sections 401 and 404 of the CWA regarding permanent fill, temporary impacts, and potential surface water quality impacts for the Project. The D/B CDA Developer shall be responsible for completion of permitting requirements under Section 404 of the CWA before construction activities begin in the impacted area. The D/B CDA Developer shall conduct construction activities to avoid and minimize impacts to the stream channels associated with vehicle crossings and temporary placement of fill. The Environmental Team (ET) shall pre-survey all stream crossing sites to identify and mark appropriate locations for any required temporary crossings to minimize impacts to the streams. The ET, under the direction of the ECM, shall identify and cordon off, with barrier or siltation fence, all sensitive habitats and wetlands outside the active construction area. To the extent feasible, these areas shall be protected from impact by construction activity or run-off. The ECM and ET shall monitor construction activities and the D/B CDA Developer shall maintain, repair, or replace any barrier or siltation fencing disturbed during construction activities and provide additional fencing or protections necessary to preserve these resources. The ECM and ET shall monitor construction areas to verify that BMPs are being implemented as required.

9.3.10.1 Wetlands Delineation

If changes to the Schematic Plans initiated by the D/B CDA Developer result in impacts to areas outside of the Schematic ROW described in CTRMA-Provided Approvals, a field determination of jurisdictional waters will be required for all Additional Properties, as well as the D/B CDA

Developer's staging areas, field office sites, borrow sites, and stockpile locations. Similarly, the D/B CDA Developer will be responsible for performing wetland field investigation in accordance with the USACE 1987 *Wetlands Delineation Manual*, to determine whether jurisdictional wetlands exist on the property described above. If wetlands are identified, the D/B CDA Developer shall delineate and record them using the USACE's Routine Wetlands Delineation Data Forms. The D/B CDA Developer shall include jurisdictional wetlands on the delineation maps and determine the amount of temporary and permanent impacts as a result of the Work. The D/B CDA Developer will be responsible for all costs associated with surveying and coordination for Governmental Approvals required as a result of design changes initiated by the D/B CDA Developer.

9.3.10.2 Mitigation Requirements

The Developer will be responsible for all costs, coordination, management, and monitoring for the Section 404 permit conditions and mitigation requirements. Mitigation of impacts to jurisdictional waters shall be accomplished following the guidance of *Section 404(h)(1)* of the CWA to avoid impacts wherever possible during Work, and to minimize and mitigate unavoidable impacts. The D/B CDA Developer is responsible for mitigation of additional impacts arising from any changes to the Schematic Plan subsequent to the Environmental Documents approval.

The D/B CDA Developer shall be responsible for implementation of mitigation and the coordination of real estate transactions to provide for the implementation and management of mitigation sites. In acquiring Mitigation Sites, the D/B CDA Developer shall acquire rights of access to and from the subject Mitigation Site, with such access being other than that from a mainlane. The D/B CDA Developer shall also be responsible for identifying and obtaining all Governmental Approvals and permits required to acquire the property as a mitigation parcel.

9.3.11 Farmland Protection

If the Schematic Plan and Schematic ROW requirements are altered in such a way that would change the quantity of farmland or prime farmland soils to be impacted, the Developer shall be responsible for the completion of an additional *Farmland Conversion Rating Form* for submittal to the NRCS as well as any subsequent mitigation that may be required.

9.3.12 Geology & Karst Features

In the event unknown karst voids or caves are discovered during construction, all Development Work shall immediately be stopped in the vicinity of the feature.

If karst voids or caves are discovered during the Development Work, the D/B CDA Developer shall provide a qualified geologist and biologist recognized by the USFWS as expert on Threatened and Endangered karst invertebrate species for investigation of voids and caves discovered during construction in accordance with *Section 9.3.5.2*.

If it is determined that conditions are not favorable for the occurrence of Endangered Species, the D/B CDA Developer shall fill and seal the void according to TCEQ procedures so as not to allow or

promote groundwater contamination. If it is determined that conditions are favorable for the occurrence of Endangered Species, the Developer shall initiate the pre-construction survey procedures as identified under Section 9.3.5.2. Survey results shall be presented to the CTRMA. The CTRMA will determine the necessary and appropriate level of coordination, and may direct the D/B CDA Developer to provide documentation to Governmental Entities.

9.4 ENVIRONMENTAL MONITORING AND REPORTING

9.4.1 General Monitoring/Reporting Requirements

The D/B CDA Developer shall monitor and document field activities for compliance with the environmental requirements of CTRMA-Provided Approvals, Environmental Approvals, Project Mitigation Plan, applicable Law, and the Contract Documents. Monitoring reports shall be submitted to the CTRMA weekly.

9.4.1.1 Pertinent Applications

The requirements of this section apply to all the D/B CDA Developer's field activities conducted in association with the Development Work and Additional Properties, including but not limited to, surveys, borings, concrete or asphalt batch plants, staging, equipment storage, employee parking, and field offices. These requirements apply to activities conducted on land that is purchased, leased, occupied, or used by the D/B CDA Developer under any other type of land-use agreement as well as on property owned by the CTRMA or the State of Texas.

9.4.1.2 Reporting Format

The D/B CDA Developer shall provide weekly Environmental Monitoring Reports (EMRs) to the CTRMA, as described in the following sections. The EMRs shall be in a format that minimizes the amount of paper used and can be interpreted quickly and must include the following minimum information:

Type of resource(s) addressed by EMR (vegetation, water quality, air quality, etc.)

Location of area monitored (map, stationing, etc.); or, if not within the Schematic ROW, a location map that clearly illustrates the spatial relationship of the Additional Property to the ROW

Name of inspector or monitor

Date monitoring occurred

Locations and nature of violations, if any

Recommended remedial actions, if any

Weather conditions

9.4.1.3 Reporting Contact Tree

Contact Information. Within thirty (30) Days after NTP, the D/B CDA Developer shall submit to the CTRMA an outline or flow chart of all contact and reporting requirements for any environmental conditions encountered during the course of the Work.

The reporting contact tree shall include contacts for the D/B CDA Developer, the CTRMA, and Governmental Entities; shall outline the chain of contacts; and shall be formatted such that it is clear to every employee which contacts shall be notified to report unforeseen impacts to Hazardous Materials or environmental/cultural resources.

The reporting contact tree shall include for each contact the person's name, agency or corporate affiliation, address, e-mail address, telephone number(s), and fax number.

Conditions To Be Reported. The reporting contact tree shall include, at a minimum, appropriate contacts and reports for the following conditions:

Contractor-caused spill

Discharge of groundwater

Discovery of active bird nest (with eggs or young)

Discovery of artifacts, dwellings, structures, or other items of potential historical importance

Discovery of hazardous substances or contaminated materials

Discovery of human bones or remains

Discovery of wildlife injured during construction activities

Discovery or Disturbance of any Threatened or Endangered Species or habitat of said species

Violation of Section 401 Water Quality Certification

TPDES inspections

Violation of Section 402 TPDES permit(s)

Other SW3P issues not covered above

Violation of Section 404 permit

Work in streams or wetlands

Work outside planned Final ROW

9.4.1.4 Reporting of Violations

If violations of any environmental requirements or conditions of Laws, Rules, or Environmental Approvals are included in a report, the D/B CDA Developer shall immediately notify the CTRMA

electronically, verbally, and in writing. The CTRMA will coordinate notification of the appropriate Governmental Entity as necessary. The actual report need not be included in the notification, but should be readily available to the CTRMA. For purposes of this section, a violation includes any breach of an environmental requirement, regardless of whether a notice of violation has been delivered to the D/B CDA Developer.

Governmental Entity Coordination. The D/B CDA Developer shall be available to meet with the Governmental Entities at the direction of the CTRMA within thirty (30) Days after NTP and then periodically to maintain compliance with environmental requirements.

9.5 ENVIRONMENTAL PROTECTION TRAINING

The CTRMA is committed to completing the Project with minimal impact on environmental resources. To this end, the D/B CDA Developer shall develop and implement an Environmental Protection Training Program that will meet the minimum requirements set forth herein. The D/B CDA Developer's program to achieve the environmental commitments of the Project as discussed herein will be strengthened by implementation of a successful Environmental Protection Training Program.

Non-employees. Although this training program is directed toward the D/B CDA Developer's employees and Subcontractors, including truck drivers and equipment operators, the D/B CDA Developer shall be responsible for all actions of any persons on the Project site who do not comply with the environmental protection requirements of this Section 9.

9.5.1 Training Goals

The CTRMA has identified the following goals of the Environmental Protection Training Program:

- Comply with all local, federal, and state Environmental Laws
- Achieve all environmental commitments set forth in CTRMA-Provided Approvals and Environmental Approvals
- Educate every worker to:
 - Recognize the overall importance of environmental issues to achieving a successful Project; and
 - Appreciate the various environmental sensitivities of the Project.
- Train every worker to:
 - Recognize environmentally sensitive resources that may be encountered during construction of the Work;
 - Avoid or take appropriate action to minimize environmental impacts from the Work; and
 - Know the required actions, practices, and procedures regarding regulated resources.

-
- Foster D/B CDA Developer's management and supervisory personnel's attitude of commitment to the Project's environmental quality
 - Convey D/B CDA Developer's management commitment to the Project's environmental quality to all workers
 - Convey CTRMA's and D/B CDA Developer's commitment to zero tolerance for violations

9.5.2 Training Scope and Content

The D/B CDA Developer may solicit input from the CTRMA regarding Project environmental quality for the Environmental Protection Training Program. The CTRMA staff will be available to provide assistance regarding CTRMA's environmental goals, policies, and its oversight of D/B CDA Developer's environmental component of the CMP. The CTRMA may make certain materials available to the D/B CDA Developer for use in conducting the Environmental Protection Training Program.

Training Topics. The Environmental Protection Training Program shall, at a minimum, include all of the following topics.

Background on environmental issues

Overview of specific environmental commitments at the project level

The overall importance of environmental protection to the Project

Developer's commitments and responsibilities

Worker responsibilities

Regulatory permit conditions

Wetlands identification

Overview of the provisions of the Endangered Species Act and Project mitigation commitments

BMPs for environmental compliance, including but not limited to pollution prevention, erosion, sedimentation, and dust control measures to maintain water and air quality

Required mitigation measures

Compliance responsibility and Governmental Entity authority

Procedures and precautions in the event of spills of or discovery of Hazardous Materials or unknown chemicals or contamination

Procedures and precautions in the event skeletal remains or other archeological or paleontological resources are discovered

Procedures and precautions in the event of karst void/cave discovery

Groundwater protection requirements

CWA regulations and surface water protection requirements

Overview of noise and residential impact reduction procedures

Air quality and dust control requirements

Penalties and/or fines for violations of and noncompliance with environmental requirements and Laws, including termination of employment

9.5.3 Participation and Responsibilities

The CTRMA expects that each and every D/B CDA Developer employee (including new employees beginning after Development Work commencement) and the D/B CDA Developer's Subcontractors shall actively participate in the Environmental Protection Training Program and will conduct the Development Work in a manner that is consistent with achieving minimal environmental impact. The D/B CDA Developer shall require all Development Work staff (from management through workers) to participate in the Environmental Protection Training Program.

Environmental staff responsibilities, including those of the Environmental Compliance Manager (ECM), shall be as set forth in *Section 9.6*. The D/B CDA Developer's management and supervisory personnel shall develop and foster attitudes and policies that are conducive to all workers conducting the Development Work in a manner that recognizes and respects the importance of and commitment to environmental protection.

9.5.4 Training Schedule

The D/B CDA Developer shall include a schedule for implementation of the Environmental Protection Training Program in the Project Schedule. 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 in sensitive areas or construction timing restrictions to protect Threatened and Endangered Species) may be used to update workers on specific restrictions, conditions, concerns, or requirements.

9.5.4.1 Introductory Training

The D/B CDA Developer shall provide introductory environmental protection training to all personnel who will be performing Development Work at the Project site. Each person (including newly hired employees) shall be required to complete the introductory training prior to arriving at the Site. The introductory training shall be of sufficient detail to provide an understanding of the Project's environmental goals, commitments, issues, restrictions, and construction limitations. The training session shall be comprehensive regarding the breadth of environmental issues. The in-office training session(s) should include the D/B CDA Developer's management commitment to environmental quality.

The D/B CDA Developer shall provide training for employees who begin work between regularly scheduled training sessions, such as a comprehensive training video that provides details on environmental issues of concern, the environmental contact tree, and guidelines for disciplinary

actions and termination. The D/B CDA Developer shall institute a mechanism whereby the training status of each employee will be readily apparent (such as stickers on hard hats that indicate the level(s) of training received). The Developer shall also maintain records of employee training and provide such records to the CTRMA on a monthly basis.

9.5.4.2 Ongoing Training

The D/B CDA Developer shall schedule periodic "toolbox" training sessions to provide workers with updated information on key issues, foster an attitude of protecting environmental resources, recognize and award environmental achievers and award recipients, and convey the CTRMA and the D/B CDA Developer management teams' serious regard for environmental quality and compliance.

9.5.5 Training Documentation

The D/B CDA Developer's ECM shall maintain documentation regarding participation in the Environmental Protection Training Program and the attendees' understanding of the information presented. This information should be included in monthly reports submitted to the CTRMA. The D/B CDA Developer shall record and report to the CTRMA attendance at each training session, and shall monitor attendance and provide timely opportunities for workers to make up any required sessions that are missed.

Verification Testing. The D/B CDA Developer shall develop methods to verify to the CTRMA the success of the Environmental Protection Training Program.

9.6 ENVIRONMENTAL PERSONNEL

9.6.1 Environmental Personnel

The Developer shall designate an independent Environmental Team (ET), as detailed in this Section 9.6 – Environmental Personnel, to prevent, minimize, and/or correct any violation of or noncompliance with environmental requirements. The D/B CDA Developer shall be accountable for the decisions by the ET, as related to violations of or noncompliance with Environmental Laws, agreements, orders, the RFDP, Proposal, or Contract Documents. The ET shall include the ECM, Environmental Training Staff, Environmental Compliance Inspectors (ECIs), as well as the Project archeologist, natural resource biologist, water quality specialist, and hazardous materials manager.

To ensure objectivity, the ET, and specifically the ECM, shall report directly to the CTRMA and the D/B CDA Developer. Once the ET has been designated, the D/B CDA Developer shall not have the ability or authority to relieve any designated ET member from his or her designated duty without the express written consent of the CTRMA.

If a violation or a noncompliance situation occurs, the ET shall be responsible for coordinating with D/B CDA Developer's on-site personnel to minimize its impacts on human health or the environment to the extent practicable.

9.6.2 Environmental Compliance Manager

The D/B CDA Developer shall designate an independent ECM for the Work. The independent ECM is considered to be one of the Key Personnel. To ensure objectivity, the ECM shall report directly to both the CTRMA and the D/B CDA Developer. The D/B CDA Developer shall not have the ability to relieve ECM of his or her duty without the express written consent of the CTRMA.

9.6.2.1 ECM Responsibilities

The ECM shall monitor, document, and report environmental compliance for the Development Work as required by the Contract Documents. The ECM shall prepare a CMP and submit said plan to the CTRMA for approval 20 Days after issuance of NTP. The CMP shall indicate times, locations, and other conditions where monitoring of construction activities are to be performed to maintain and ensure compliance with Environmental Laws and Contract Documents. The CMP shall be updated and submitted to the CTRMA and the Developer for review on a monthly basis.

Environmental Monitoring Program. The ECM shall have overall responsibility for the Environmental Monitoring Program. Refer to Section 9.4 for minimum environmental monitoring requirements.

Personnel Selection. The ECM shall designate personnel knowledgeable in the various environmental subject areas to provide the necessary environmental expertise required for the Development Work and to conduct environmental protection training. The rationale for the selection of the training staff shall be set forth in the Contract Documents and modified as needed to reflect any additional CTRMA requirements. Selection of the training staff must be in accordance with the criteria approved by the CTRMA. The CTRMA will maintain the right and authority to approve or reject any or all environmental staff.

Direction of Work and Reports. The ECM shall direct the work of the environmental staff as set forth herein.

9.6.2.2 ECM Authority

Order to Remedy. The ECM shall have the authority to remedy violations of, or noncompliance with, environmental requirements set forth in Laws, Rules, and Environmental Approvals. If the event poses imminent danger to human health or the environment, these remedies shall be invoked immediately upon discovery. For other events, the ECM shall consult with the CTRMA and appropriate Governmental Entities to minimize the impacts of the violation or noncompliance on human health or the environment.

Stop Work. All members of the ET and the CTRMA, shall each have the authority to stop Development Work as required to eliminate or prevent violations of environmental requirements without fear of reprisals. This Development Work stoppage should be limited to the immediate vicinity or area affected by the event that represents an imminent danger to human health or the environment. At the first available moment, the CTRMA and the D/B CDA Developer shall be

apprised of the event. The CTRMA retains the authority to order a Development Work stoppage within the entire Project area for D/B CDA Developer non-compliance with environmental commitments in the Environmental Documents, permits, Environmental Laws or other Environmental Approvals.

The ECM shall have, and shall exercise, the authority to prevent and remedy violations of environmental requirements. Additionally, the ECM shall have the authority to direct the D/B CDA Developer to implement measures to minimize future violations of Environmental Laws, agreements, applicable Law and the Contract Documents.

9.6.2.3 Environmental Training Staff

The ECM shall be responsible for assigning qualified personnel to the Environmental Training Staff and also coordinating training sessions with Governmental Entities as necessary. The Environmental Training Staff shall train and educate the Environmental Monitoring Inspectors (EMIs), as described in Section 9.6.3 sufficiently to allow the efficient and effective performance of their duties, as required by Environmental Laws, agreements, Rules and the Contract Documents. This EMI training program will be in accordance with the requirements set forth in Section 9.5.

9.6.2.4 Coordination with Governmental Agencies

The ECM shall coordinate with the CTRMA, the D/B CDA Developer, and, when directed by the CTRMA, appropriate Governmental Entities (including, but not limited to, the USACE, OSHA, SHPO, TCEQ, NRCS and USFWS). At the direction of the CTRMA, the ECM shall submit all necessary environmental documentation and monitoring reports to the appropriate Governmental Entities to maintain compliance with applicable Laws and Environmental Approvals.

9.6.2.5 Documentation and Reports

The ECM shall prepare status reports to the CTRMA summarizing all environmental Work. The ECM shall also submit reports as required by Environmental Laws, agreements, Rules and Contract Documents.

Weekly Reports. A minimum of one EMR per week is to be submitted to the CTRMA on the status of the Development Work as it relates to environmental commitments and detailing the results of the Environmental Monitoring Program for the subject period. Items to be included in the report include, but are not limited to, a summary of violations of or noncompliance with Environmental Laws, agreements, permits, orders or the Contract Documents, and measures taken to eliminate, prevent, remediate and minimize environmental impacts.

9.6.3 ECI Responsibilities

The ECIs shall provide on-site compliance monitoring of the Development Work under direction of the ECM. Neither the D/B CDA Developer nor the ECM shall have the ability or authority to relieve an ECI of his/her duty without the express written consent of the CTRMA. The ECM shall be

responsible for conducting appropriate training sessions for all ECIs, prior to commencement of compliance monitoring activities.

The ECIs shall be responsible for conducting on-site monitoring, preparing documentation, and reporting violations or noncompliance with Environmental Laws, permits, agreements, orders, or the Contract Documents. The daily written reports shall include violations and noncompliance, as well as documenting compliance. The daily monitoring reports shall be submitted to the ECM.

Additionally, the ECIs shall have the authority to stop Development Work on the Project if the Development Work should represent an imminent danger to human health or the environment, without fear of reprisals. This Development Work stoppage should be limited to the immediate vicinity or area affected by the event that represents the danger. The ECI will immediately notify the ECM of the situation and the ECM will notify the CTRMA and the D/B CDA Developer, and then proceed to the site of work stoppage.

9.6.4 Project Archeologist

An Archeologist for the Project shall be designated by the ECM to provide expertise in monitoring of cultural resources impacted by Work.

Qualifications. The Archeologist shall be a qualified and experienced professional with experience in similar projects. Qualifications, knowledge, and experience should include:

Duties of a "Principal Investigator," as set forth in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (36 (FR 44738-9) and Chapter 26 (TAC) Rules of Practice and Procedure for the Texas Historical Commission

Graduate degree in archeology, anthropology or a closely related field and ability to obtain a State Antiquities permit, within thirty (30) Days of NTP1

Completion at the PI level of one (three preferred) data recovery project or a project involving substantial analysis and reporting of excavated data that has been completed on time and within budget. Two archeological testing projects completed on time and within budget may be substituted for one data recovery project. At least one data recovery or testing project shall have been located in Central Texas region

Construction techniques in general

Monitoring of construction jobs

Applicable Environmental Laws, agreements, Rules, and the Contract Documents

Applicable training modules discussed herein Section 9.5.2

Availability. The Archeologist shall be available to be on-Site within four (4) hours of discovery of any archeological resource. The D/B CDA Developer shall identify a secondary contact for cultural resource concerns in case the primary Archaeologist is unable to respond to the Site. The secondary

contact should be included on the environmental contact tree and should also meet the criteria listed above.

9.6.5 Natural Resource Biologist

A Natural Resource Biologist shall be designated by the ECM to provide expertise in monitoring impacts on wildlife and the natural environment due to construction activities related to the Work.

Qualifications. The Natural Resource Biologist shall be a qualified and experienced professional with experience in similar projects. Qualifications, knowledge, and experience should include:

- Applicable Environmental Laws, agreements, Rules, and the Contract Documents
- Applicable training modules discussed herein Section 9.5.2 – Training Scope and Content, including completion
- Wildlife management and protection in the State
- ESA
- Knowledge of Threatened and Endangered Species found within the Project region
- Natural resource management and protection in Texas
- Sections 401, 402, and 404 of the CWA
- Construction techniques in general
- Monitoring of construction jobs
- Bachelor's degree in ecology or related biological field (i.e., wildlife biology, botany, etc)
- Shall have five (5) years of work experience in an environmental consulting or management field will be required

Availability. The Natural Resource Biologist shall be available to be on-Site within four (4) hours at any time construction activities are being conducted. The D/B CDA Developer shall identify a secondary contact for natural resource concerns in case the primary Natural Resource Biologist is unable to respond to the Site. The secondary contact should be included on the environmental contact tree and should also meet the criteria listed above.

9.6.6 Karst Series Specialist

The D/B CDA Developer shall contract with a biologist recognized by the USFWS as a qualified specialist in the identification and habitat assessment of karst invertebrate species as discussed in Section 9.3.5.2. The karst species specialist shall report to the ECM on the habitat potential of karst voids/caves discovered during construction. The Karst Species Specialist must have or be able to obtain a scientific collection permit from the USFWS and must have experience in consultation and coordination for a Section 10(a)(1)(B) permit.

The Karst Specialist shall be available to be on-site within four (4) hours at any time construction activities are being conducted.

9.6.7 Project Geologist

The D/B CDA Developer shall provide a qualified geologist as expert on investigation of voids and caves discovered during construction in accordance with Section 9.3.5.2.

The Project Geologist shall be available to be on-site within four (4) hours at any time construction activities are being conducted. The D/B CDA Developer shall identify a secondary contact for in case the primary Project Geologist is unable to respond to the Project site. The secondary contact should be included on the environmental contact tree and should also meet the criteria listed above.

9.6.8 Water Quality Specialist

A Water Quality Specialist shall be designated by the ECM to provide expertise in permitting delineation and the protection of jurisdictional waters under the regulations of the CWA, Sections 401, 402, and 404, as implemented in the State of Texas through USACE, USEPA, and TCEQ programs, during the course of the Work.

Qualifications. The Water Quality Specialist shall be a qualified and experienced professional with experience in similar projects. Knowledge and experience should include:

Wetlands and riparian management and protection in Texas

The ecology of riparian ecosystems

CWA Sections 401 and 404 and/or supporting documentation for temporary or permanent impacts to jurisdictional waters within the Proposed ROW

CWA Section 402 TPDES provisions for construction and permanent storm water management

Construction techniques in general

Monitoring of construction jobs

Applicable Environmental Laws, agreements, Rules, and the Contract Documents

Applicable training modules discussed herein Section 9.5 – Environmental Protection Training, including completion

Availability. The Water Quality Specialist shall be available to be on-Site within four (4) hours at any time construction activities are being conducted. The D/B CDA Developer shall identify a secondary contact for natural resource concerns in case the primary Aquatic Resource Specialist is unable to respond to the Site. The secondary contact should be included on the environmental contact tree and should also meet the criteria listed above.

9.6.9 Hazardous Materials Manager

The ECM shall designate a Hazardous Materials Manager to provide expertise in the safe handling of Hazardous Materials required to perform the Development Work and those that may be discovered/impacted during construction, see Section 9.3.2. The Hazardous Materials Manager shall be a Registered Professional Engineer, familiar with applicable Laws and TCEQ guidance for the investigation and remediation of Hazardous Materials under the TCEQ *Voluntary Cleanup Program and Texas Risk Reduction Program Rules*. Additionally, the Hazardous Materials Manager shall be responsible for scheduling and/or conducting training for the D/B CDA Developer's employees.

All personnel of the D/B CDA Developer and Subcontractors handling Hazardous Materials shall be trained and certified at least to the minimum requirements established under the guidelines of *OSHA 1910.120* (HAZWOPER Training) and must be enrolled and cleared by a medical surveillance program prior to engaging and after completion of Development Work activities. The Hazardous Materials Manager, to ensure that personnel have met the minimum *OSHA 1910.120* guidelines, will be 40-hour HAZWOPER certified and shall review all employee certificates prior to any handling of Hazardous Materials.

The D/B CDA Developer shall ensure that all applicable certifications, licenses, authorizations and Governmental Approvals of the D/B CDA Developer, Subcontractors and any other workers on the Development Work are current and valid through the duration of the Work.

The D/B CDA Developer shall make all on-Site workers aware of the potential Hazardous Materials to which they may be exposed, shall limit Subcontractors and other site workers' exposure to Hazardous Materials and provide all necessary personal protection equipment to protect them from exposure.

The Hazardous Materials Manager shall maintain records of all incidents involving Hazardous Materials or hazardous waste and notify the ECM, CTRMA and appropriate State authorities in writing of any such incidents on a weekly basis in accordance with Section 9.4 – Environmental Monitoring and Reporting.

Qualifications. The Hazardous Materials Manager shall be a qualified and experienced professional with experience in similar projects. Assessment criteria to be used in evaluating candidates for the Hazardous Materials Manager include, but are not limited to, the following specific knowledge and experience:

Registered Professional Engineer

Shall have five (5) years experience with similar type projects

Experience in developing Investigative Work Plans, Site Investigative Reports, and Remedial Action Plans or equivalent reports necessary and acceptable to the TCEQ in material discovery and remediation efforts of Hazardous Materials or wastes

Construction techniques in general

Monitoring of construction jobs

Applicable Environmental Laws, agreements, Rules, and the Contract Documents

Applicable training modules discussed herein *Section 9.5.2*, including completion

Availability. The Hazardous Materials Manager shall be available to be on-Site within two (2) hours at any time construction activities are being conducted. The D/B CDA Developer shall identify a secondary contact for natural resource concerns in case the primary Hazardous Materials Manager is unable to respond to the Site. The secondary contact should be included on the environmental contact tree and should also meet the criteria listed above.

9.7 ENVIRONMENTAL SUBMITTALS

The D/B CDA Developer shall be responsible for the following submittals, at a minimum, to the CTRMA and to Governmental Entities as directed by the CTRMA and required by the Contract Documents and Environmental Approvals:

CMP, as required by *Section 9.4 – Environmental Monitoring and Reporting*

Environmental contact tree

Environmental Monitoring Reports

Project Mitigation Plan

Investigative Work Plans, Site Investigative Reports, and Remedial Action Plans as necessary for hazardous material discovery/remediation

Wetlands Delineations and appropriate Section 404 Permit Application if changes to the design or temporary construction impacts are necessary

Mitigation or resource monitoring reports , as required by resource-specific mitigation plans

The schedule for submittals will be in accordance with the requirements set forth previously in these Technical Provisions or as necessary to maintain compliance with all applicable Laws, Rules, and Environmental Approvals granted for the Work.

The D/B CDA Developer shall also be responsible for the preparation and submittal of additional plans and reports as identified in CTRMA-Provided Approvals, the Developer secured Governmental Approvals and resource-specific mitigation plans.

10.0 LANDSCAPE AND AESTHETICS

10.1 GENERAL PURPOSE

The D/B CDA Developer shall incorporate landscape and aesthetic treatments into the Final Design in accordance with these Technical Provisions, Exhibit D – Item 10a – Landscape and Aesthetic Requirements and Exhibit D – Item 10b – Aesthetic Enhancement. The aesthetic components presented in these exhibits include:

- Typical Intersection Conditions
- Retaining Walls
- Bridge Abutment Walls
- Bridge Bents
- Traffic Barriers
- Noise Walls
- Mainlane Sign Structures
- Lighting Standards
- Traffic Signal Systems
- Paving/ Hardscape
- Coating and Textures
- Landscape
- Irrigation Systems

Additional requirements found in these Technical Provisions that are not covered in Exhibit D – Item 10a – Landscape and Aesthetic Requirements or Exhibit D – Item 10b – Aesthetic Enhancement include the following:

- Grading and Drainage
- Maintenance and Establishment Period

The criteria contained in Exhibit D – Item 10a – Landscape and Aesthetic Requirements and in Exhibit D – Item 10b – Aesthetic Enhancements shall be incorporated into the Project Design.

The D/B CDA Developer shall submit preliminary aesthetic design plans to CTRMA for review and comment prior to or in conjunction with the Preliminary Submittal (30%) Design. The CTRMA will not accept any Early Release for Construction or Release for Construction packages until the D/B CDA Developer has resolved all comments to CTRMA's satisfaction.

The following design criteria along with Exhibit D – Item 10a – Landscape and Aesthetic Requirements and Exhibit D – Item 10b – Aesthetic Enhancement define the baseline aesthetic treatments for the Project. Any deviation from these guidelines will require CTRMA approval.

10.2 TYPICAL INTERSECTION CONDITIONS

Intersections shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

10.3 RETAINING WALLS

Retaining walls shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements except for the spacing requirements shown for retaining wall pilasters. Retaining wall pilasters shall be spaced at 125 feet from center to center. In addition, the D/B CDA Developer shall comply with the following requirements:

- The D/B CDA Developer shall minimize the visual impacts of all walls in the Development Work by:
 - Utilizing wall profiles and alignments that blend with the natural terrain
 - Customizing the grading to reduce the need for walls
- All retaining walls for the Development Work shall fit into one (1) of the following categories:
 - Block Walls
 - Cast-in-place construction
 - Tie-Back walls constructed in conformance with TxDOT details
 - MSE retaining wall system from the current TxDOT List of Approved MSE Panel manufacturer
- MSE walls with cast-in-place coping are the preferred choice
- Wall locations and wall types shall be shown in the Preliminary Submittal (30%) Design.

All proprietary walls shall meet the required factors of safety listed in the current TxDOT *Bridge Manual*. Aesthetic treatment applied to structures shall not affect the structure's ability to meet the design standards set out in Technical Provision 12 (Bridges & Highway Structure Design).

Block walls can only be used in isolated locations, immediately adjacent to sidewalk or the Shared Use Path. Block walls shall adhere to the finish requirements for retaining walls outlined in the coatings and textures section in Exhibit D – Item 10a – Landscape and Aesthetic Requirements. Block walls can only be used with approval from the CTRMA.

The design approval process for proprietary walls shall be in accordance with the current TxDOT Policy for Proprietary Wall Systems. The D/B CDA Developer shall use long vertical curves at the top of the wall's profile and avoid abrupt tangents and chords. The D/B CDA Developer shall curve retaining walls into existing or finished grade where possible to avoid the use of guardrails at the ends. Retaining wall alignments and profiles shall be shown in the Preliminary Submittal (30%) Design.

All wall finish requirements are found in the coatings and textures section of *Exhibit D – Item 10a – Landscape and Aesthetic Requirements*

10.4 BRIDGE ABUTMENT WALLS

Bridge abutment walls shall meet requirements found in *Exhibit D – Item 10a – Landscape and Aesthetic Requirements*. In addition, to *Exhibit D – Item 10a – Landscape and Aesthetic Requirements* the D/B CDA Developer shall comply with the following requirements:

Aesthetic treatments on bridges at creek crossings may be limited to only those surfaces visible from vehicles traveling on the roadway.

Bridge abutment aesthetics treatments and locations shall be shown in the Preliminary Submittal (30%) Design.

Bridge abutment wall finish requirements are found in the Coatings and Textures section of *Exhibit D – Item 10a – Landscape and Aesthetic Requirements*.

10.5 BRIDGE BENTS

Bridge Bents shall meet requirements found in *Exhibit D – Item 10a – Landscape and Aesthetic Requirements*. In addition, the D/B CDA Developer shall comply with the following requirements:

- Aesthetic treatments on bridges at creek crossings may be limited to only those surfaces visible from vehicles traveling on the roadway.
- Maintain constant superstructure depths, where possible, throughout the bridge length, with necessary variations gradually and gracefully proportioned.
- For steel superstructures, use continuous spans with a minimum number of expansion joints; and for conventional concrete superstructures, use simple spans. Steel superstructure shall incorporate necessary flashing to minimize staining of surrounding concrete.
- Locate columns under parallel bridges along a common line at each bent.

Bridge bent finish requirements are found in the coatings and textures section of *Exhibit D – Item 10a – Landscape and Aesthetic Requirements*.

10.6 TRAFFIC BARRIERS

Traffic barriers shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements. In addition, the D/B CDA Developer shall comply with the following requirements:

The D/B CDA Developer will be required to use T551 rail in lieu of T501 rail where called for in Exhibit D – Item 10a – Landscape and Aesthetic Requirements. Traffic barrier finish requirements are found in the Coatings and Textures section of Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

The D/B CDA Developer will be required to make modifications to the T551 rail in order to meet the requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements. Exhibit D – Item 10d – Modified Rail Sheets were developed to modify T501 rail to meet the requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements and should be used as an example for the T551 rail modifications that will be required to meet the requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

10.7 NOISE WALLS

Noise walls, if required, shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

Noise wall finish requirements are found in the coatings and textures section of Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

10.8 MAINLANE SIGN STRUCTURES, TOLL GANTRY, AND ITS

Mainlane sign, toll gantry, and ITS structures shall meet requirements for mainlane sign structures found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements. In addition to Exhibit D – Item 10a – Landscape and Aesthetic Requirements the D/B CDA Developer shall comply with the following requirements:

All overhead sign structures shall meet the aesthetic requirements for mainlane sign structures found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements, including overhead signs for frontage roads, cross streets, ramps, and direct connectors.

Overhead sign structure finish requirements are found in the coatings and textures section of Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

10.9 LIGHTING STANDARDS

Illumination assemblies shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

Traffic signal systems shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

10.10 PAVING/HARDSCAPE

Paving and Hardscape features shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

The D/B CDA Developer shall prepare preliminary aesthetic design plans to the same level of detail as provided in Exhibit D – Item 10b – Aesthetic Enhancement.

10.11 COATINGS AND TEXTURES

Coatings and textures for aesthetic treatments shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

10.12 LANDSCAPE

Landscape shall meet requirements found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements. In addition to Exhibit D – Item 10a – Landscape and Aesthetic Requirements, the D/B CDA Developer shall comply with the following requirements:

- The D/B CDA Developer shall retain a Registered Landscape Architect. The landscape architect shall be experienced in designing similar roadway landscape design projects within the counties included in the Texas Department of Transportation – Austin District.
- Existing trees, vegetation and landforms should be preserved to the greatest extent possible. Areas that are outside of the construction limits required for this Project but are in the ultimate ROW will be left undisturbed.
- The landscape design must consider travel speeds, sight distance, drainage needs and other elements that impact the safety and views of the motorists entering and leaving the Project.
- The D/B CDA Developer, to the extent practical, shall use trees to either screen out undesirable views, such as power lines or residential views towards the roadway, or to enhance positive views.
- The D/B CDA Developer shall not plant trees within the prescribed clear zone, as defined in Technical Provision 11 (Roadway Design).
- Erosion control planting shall be in accordance with TxDOT standards and Technical Provision 9 (Environmental Compliance) and Technical Provision 15 (Water Resources Design).
- Erosion control planting is not considered landscaping.

The overall landscape design, including plant material type, density, and location, shall meet the requirement found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements and shall be

approved by CTRMA. Plant material selection shall consider the soil conditions, slopes and watering requirements.

Exhibit D – Item 10b – Aesthetic Enhancement should be used as an example of aesthetic details for landscape that were developed based on the Existing Design Plans. Exhibit D – Item 10b – Aesthetic Enhancement should be used as an example of the level of detail required for preliminary aesthetic design plan submittal.

10.13 IRRIGATION SYSTEMS

The D/B CDA Developer shall design and install irrigation systems to provide irrigation to the landscape features that are installed for the Project. The irrigation systems shall meet the requirements identified in Exhibit D – Item 10b – Aesthetic Enhancement.

The D/B CDA Developer will be required to operate and maintain the irrigation systems during the maintenance and establishment period. Upon completion of the maintenance and establishment period, D/B CDA Developer shall terminate operation and maintenance of the irrigation system and remove any above ground components of the irrigation system as required by the CTRMA.

10.14 OTHER AESTHETICS ITEMS

The D/B CDA Developer shall monitor the appearance of the aesthetics treatments on any walls or bridges for any defects, flaws, or vandalism during the construction period and up to Final Acceptance. The defects, flaws, or vandalism shall be noted and brought promptly to the CTRMA's attention. The D/B CDA Developer shall remedy vandalism until Final Acceptance.

10.15 GRADING AND DRAINAGE AESTHETICS

The D/B CDA Developer's grading plans shall comply with the following guidelines:

- Slopes shall be in accordance with *Technical Provision 11 (Roadway Design)*.
- Slopes flatter than 4:1 outside the clear zone are desirable, and the D/B CDA Developer shall use them where practical when contributing to the quality of the existing topography.
- The D/B CDA Developer shall adjust grading in order to minimize disturbance to the existing native vegetation.
- The D/B CDA Developer shall perform finish grading and place topsoil on all areas to a four (4) inch compacted depth within the limits of grading (and areas outside the limits of grading that are disturbed in the course of the Work) that are not paved or part of a rock outcropping feature.

10.16 MAINTENANCE AND ESTABLISHMENT PERIOD

The D/B CDA Developer shall be responsible for the care of all plants installed on the Project, in accordance with the requirements of the current TxDOT *Standard Specifications for Construction*

and Maintenance of Highways, Streets, and Bridges for a period of one (1) year after the date of Final Acceptance.

During the maintenance and establishment period, the D/B CDA Developer shall replace the plant materials when they are no longer in a healthy condition as determined by the CTRMA, and make adjustments to the irrigation systems as directed by the CTRMA. The D/B CDA Developer shall make replacement plantings in the planting season, except as otherwise approved in writing by the CTRMA. The D/B CDA Developer shall remove dead plants within ten (10) Business Days of discovery, and D/B CDA Developer shall replace such plants during the next planting season. Replacements shall be of the same species and variety of the originally specified material, unless otherwise approved in writing by CTRMA, and shall be installed as specified by herein. If a replaced plant requires another replacement during the maintenance and establishment period, the new replacement shall also be covered for the maintenance and establishment period.

After Final Acceptance, the CTRMA will review the completed landscape installation and irrigation systems with the D/B CDA Developer's representative on a quarterly basis during the Roadside Planting and Establishment period. Plant material health, mulching, erosion controls and other maintenance concerns will be specifically noted. Replacement needs will be noted and directed to the D/B CDA Developer during the Roadside Planting and Establishment period.

The D/B CDA Developer shall perform, at minimum, the maintenance practices listed below for a period of one (1) year after Final Acceptance. In addition, the D/B CDA Developer shall use as a guideline the current TxDOT *Roadside Vegetation Management Manual*.

- Weed Control – Monitor and control weeds. Apply herbicide to isolated pockets of taller, weedy plant species, if present, in accordance with procedures contained within TxDOT *Herbicide Operations Manual*.
- Erosion Control – Replace mulch around trees and shrubs to the required depth and limits. Repair eroded areas and replace as required to prevent continued erosion.
- Mowing – All areas planted with erosion control seeding shall be mown a minimum of three (3) times a year or as directed by the CTRMA.
- Safety/Spot Mowing – Spot mowing for safety purposes two (2) times per year or as directed by the CTRMA.

If grassed areas develop major weed or erosion problems, the D/B CDA Developer will correct the problems. The D/B CDA Developer shall monitor and control weeds where necessary.

11.0 ROADWAY DESIGN

11.1 INTRODUCTION

This technical provision describes the roadway design elements of the Project.

Schematic Plan. The Basic Configuration is shown in Exhibit D – Item 2a – Schematic Plan Sheets 1 and 2. Additional design information about the Project is provided in Exhibit D – Item 3a, Item 3b, and Item 3c – Segments 1A, 2, and 3 Existing Design Plans.

Ultimate Design. The D/B CDA Developer shall accommodate the Ultimate Design as shown in Exhibit D – Item 4a Ultimate Design Exhibits.

Limits of Construction. The D/B CDA Developer shall refer to the Environmental Documents, the Ultimate Design, and the Schematic Plan for the limits of the Project.

Changes. The D/B CDA Developer may make changes in the horizontal and vertical alignments shown in the Schematic Plan, as long as these changes do not violate the design criteria provided in the Contract Documents. The D/B CDA Developer is encouraged to improve the Schematic Plan to the extent possible. The CTRMA recognizes that the Schematic Plan is based on preliminary engineering shown in the Existing Design Plans and therefore expects the D/B CDA Developer to improve and enhance the layout and alignments as the final design advances. The D/B CDA Developer's improvements in horizontal and vertical alignments must stay within the Final ROW. Changes in access and capacity must be approved by the CTRMA, in accordance with the Alternative Technical Concept (ATC) process, as described in the Instructions to Proposers.

11.2 REFERENCED MANUALS, STANDARDS, AND GUIDELINES

Roadway Design Manual. Specifically, the roadway geometric design shall be in accordance with the latest English edition of the TxDOT *Roadway Design Manual*. These standards shall be used for each of the design elements described in Section 11.3 – Geometric Design of Roadway Elements, unless otherwise noted.

Other Design Criteria. Unless otherwise specified in this RFDP, the roadway design shall be governed by current TxDOT policies, specifications, standards, manuals, guidelines, and technical memoranda, including all addenda, supplements, and revisions thereto. Generally, the design shall comply with the criteria established by the CTRMA, TxDOT, and AASHTO. The current version (current version as of the issue date of this RFDP) of these references shall be used unless otherwise specified.

When no particular standard or criterion is specified in this RFDP, then the following hierarchy of standards will apply:

- CTRMA
- TxDOT

-
- AASHTO
 - Applicable local public agency standards

Specific References Cited in this Section:

- AASHTO A Policy on Geometric Design of Highways and Streets
- AASHTO Roadside Design Guide
- TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, adopted by TxDOT on June 1, 2004.
- TxDOT Hydraulic Design Manual
- TxDOT Roadway Design Manual
- TxDOT Toll Plaza Design Directives Manual
- TxDOT Access Management Manual
- Americans with Disabilities Act of 1990 (ADA), as amended (42 USC §§12101, et seq.) and the Texas Accessibility Standards (TAS).

In all cases desirable values will be used. Minimum values may only be used with approval by the CTRMA. The D/B CDA Developer must provide justification for the usage of any minimum standard. Justification based solely on cost or schedule will not result in approval.

11.3 GEOMETRIC DESIGN OF ROADWAY ELEMENTS

Design Year Traffic. The term “Design Year Traffic” is the forecast year that was used for the preliminary design and shall be used by the D/B CDA Developer to advance the design.

Opening Year Traffic. The term “Opening Year Traffic” is the forecast year anticipated to match the Project opening to traffic.

Design Speed: Design speed is the selected speed used to determine the various geometric design features of the roadway as indicated in the Scope of Work.

Critical Design Elements: The critical design elements for the Project have been summarized in a tabular form and are presented in the Scope of Work.

11.3.1 Frontslopes and Backslopes

Frontslopes are adjacent to the roadway and backslopes are not adjacent to the roadway. Generally, frontslopes and backslopes shall be no steeper than 4:1 (horizontal to vertical [H:V]) for safety and maintenance reasons. Slopes within the horizontal clear zone shall be 6:1 or flatter. Slopes steeper than 4:1 may be permitted in some instances in order to limit the amount of right-of-way impacts. If slopes steeper than 4:1 are required, the D/B CDA Developer shall obtain approval from the CTRMA, during the design process. Justification based solely on cost or schedule will not result in

approval. The D/B CDA Developer shall refer to the *TxDOT Roadway Design Manual* regarding design limitations and roadside safety guidelines associated with the design of slopes along roadways.

11.3.2 Driveways and Entrances

The D/B CDA Developer shall comply with the *TxDOT Roadway Design Manual* and *TxDOT Access Management Manual* and the latest TxDOT Standards for pedestrian facilities regarding design standards, guidance, and requirements for driveways.

11.3.3 Traffic Barriers

The D/B CDA Developer shall provide traffic barriers which protect traffic from roadside hazards such as overhead signs, culvert headwalls, non-transversable side slopes, bridge piers and other obstructions within the horizontal clear zone. All new guardrails and temporary traffic barriers shall meet current guidelines for traffic barriers. All blunt ends shall be protected with an appropriate safety end treatment including impact attenuators. The D/B CDA Developer shall comply with the *TxDOT Roadway Design Manual* and *AASHTO Roadside Design Guide* regarding the design standards, guidance, and requirements for traffic barriers design and horizontal clear zone design.

11.3.4 Median Barrier

Location and Layout. The D/B CDA Developer shall provide a continuous median barrier separating the mainline roadways on the Project. The CTRMA will review the recommendations and provide D/B CDA Developer with final location acceptance.

11.3.5 Turn Lanes

The D/B CDA Developer shall comply with the *TxDOT Roadway Design Manual* regarding the design standards, guidance, and requirements for left and right-turn lanes design. The D/B CDA Developer shall be responsible for reviewing turning movements at the intersection of crossing roads along the Project corridor and for the development of intersection geometric alignments that will accommodate the appropriate design vehicle. The D/B CDA Developer shall implement into the final design the appropriate length of turning lanes which will meet the needs of the Project Design.

11.3.6 Curbs

The D/B CDA Developer shall comply with the *TxDOT Roadway Design Manual* regarding the design standards, guidance, and requirements for curb design.

11.3.7 Interchanges

The D/B CDA Developer shall comply with the TxDOT *Roadway Design Manual* and AASHTO's *A Policy of Geometric Design of Highways and Streets* regarding the design standards, guidance, and information on interchange design.

11.3.8 Medians

The D/B CDA Developer shall comply with the TxDOT *Roadway Design Manual* and TxDOT *Access Management Manual* regarding the use and requirements for median designs when warranted. Locations of all median openings shall be determined by the D/B CDA Developer and reviewed for acceptance by the CTRMA.

11.3.9 Pedestrian Traffic and Crossings

The D/B CDA Developer shall determine the locations if required, of all sidewalks along frontage roads and cross streets as required for safe passage of pedestrian traffic within the Project corridor. Crosswalks and curb ramps shall be provided at all intersections proposed to be controlled by stop signs or traffic signals. The use of raised concrete islands may be considered for providing refuge for crossing pedestrians.

The D/B CDA Developer shall comply with the TxDOT *Road Design Manual*, Americans with Disabilities Act of 1990 and the Texas Accessibility Standards (TAS) and *Technical Provision 10 (Landscape and Aesthetics)* regarding design standards, guidance, and information for sidewalks, curb ramps, pedestrian traffic, and crossings locations.

11.3.10 Traffic Barriers Attenuators

The D/B CDA Developer shall be responsible for determining proper locations for attenuators within the corridor. If attenuators are used, the D/B CDA Developer shall comply with the TxDOT *Roadway Design Manual* and AASHTO *Roadside Design Guide* which contains design guidance and general information for impact attenuators associated with *Technical Provision 10 (Landscape and Aesthetics)*. The use of guardrail is permitted and shall meet the overall aesthetics treatments being applied to the Project. Guardrail end treatments (GET) shall be used at ends of guardrails throughout the Project. TRACC systems or approved equal shall be used where crash attenuators are required.

11.3.11 Toll Evasion Measures

The D/B CDA Developer shall be responsible for designing and installing measures such as fences at Final ROW to prevent toll evasion. A mow strip shall be included along all toll evasion measures to provide future ease of maintenance. Post and single cable is not permitted.

11.3.12 Ditches

Median Ditch. Culverts and/or inlets shall be used to outlet drainage in low spots in the median. To maintain slope rates as required in Section 11.3.1 – Frontslopes and Backslopes of these Technical Provisions, the depth of the median ditch shall vary through horizontal curves where superelevation is required. The flowline of the ditch shall be two (2) feet below pavement edge or six (6) inches below top of select material for mainlanes/ramps; subgrade for cross streets, whichever is greater. All drainage ditches shall conform to the SWPPP developed for the Project and approved by the Texas Commission on Environmental Quality (TCEQ).

Roadside Ditch. Ditch side slope rates shall follow the requirements in Section 11.3.1 – Frontslopes and Backslopes of these Technical Provisions. The flowline of the ditch shall be two (2) feet below pavement edge or six (6) inches below top of select material for mainlanes/ramps; subgrade for cross streets, whichever is greater. Ditch flow depths shall meet requirements per Section 15.6 – Open Channels and Ditches of these Technical Provisions. The roadside ditches shall be directed to water quality ponds for treatment if required.

Grass Lining. Whenever possible, all roadside and median ditches shall be grass-lined to help filter out pollutants before drainage enters any outfall. However, if water velocity within the roadside and median ditches creates potential soil erosion conditions in the future, the D/B CDA Developer may line the ditches with appropriate erosion control measures such as erosion control blankets, rock rip rap, or concrete rip rap to prevent erosion and scouring.

11.4 AESTHETICS DESIGN ELEMENTS

The D/B CDA Developer shall incorporate landscape and aesthetics treatments into the Final Design in accordance with Technical Provision 10 (Landscape and Aesthetics).

11.5 ADDITIONAL REQUIREMENTS

11.5.1 Conflicts

If any design criterion listed in the RFDP Documents, conflicts with the Schematic Plan as found in Exhibit D – Item 2a – Schematic Plan Sheets 1 and 2, the D/B CDA Developer shall notify the CTRMA and obtain clarification prior to submission of its Proposal.

11.5.2 Standard Design Plans

Standard plans are to be a primary source of information regarding the preferred and acceptable means of performing any type of work that is redundant. The D/B CDA Developer shall use the TxDOT *Standard Plans*, as appropriate for the specific design of the roadway and structures. Any requested modifications to the *Standard Plans* must be submitted as a part of the Formal Design Review prior to implementation.

11.5.3 Surveying and Construction Staking

Requirements. The D/B CDA Developer shall be responsible for all control surveys, topographic surveys, construction staking, and all surveying work necessary to complete the Project and to produce accurate Record Drawings. The D/B CDA Developer shall be responsible for all surveying necessary to complete the work. Except for the initial survey control data that has been furnished by the CTRMA, all calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the D/B CDA Developer's responsibility.

The meaning of words and terms used in this provision shall be as listed in *Definitions of Surveying and Associated Terms*, current edition, published by the American Congress on Surveying and Mapping and the American Society of Civil Engineers.

The CTRMA may spot-check the D/B CDA Developer's surveying. These spot-checks will not change the requirements for normal checking by the D/B CDA Developer.

Project Control Point Information. The D/B CDA Developer shall utilize the primary survey control information in *Exhibit D – Item 18a – Survey Data*, consisting of descriptions of primary control points used for the horizontal and vertical control, and descriptions of additional primary control points for the Project length. Primary control points shall be described by reference to the Project alignment and the coordinate system and elevation datum used by the Project.

All field survey work and survey activities required for this Project shall be performed in conformance with the TxDOT surveying and mapping guidelines and procedures, as applicable.

Survey Records. The D/B CDA Developer shall provide the CTRMA copies of all calculations and staking data prior to performing any construction staking. Detailed survey records shall be maintained, including a description of the work performed on each shift, the methods utilized, and the control points used. The record shall be adequate to allow the survey to be reproduced. A copy of each day's record shall be provided to the CTRMA upon request.

11.5.4 Plan Submittal Requirements

11.5.4.1 Plans and Specifications

The D/B CDA Developer shall produce plans and specifications that aid and facilitate design review by the CTRMA, TxDOT, and FHWA and provide adequate information for safe, efficient, and high-quality construction. Plan sets and sheet types shall be developed in accordance with the Design Quality Management Plan, the TxDOT PS&E Preparation Manual and local City and County requirements for facilities they have jurisdiction over, before construction may begin. The submittals shall include (at a minimum) the following plan sheet types for each Design Submittal as indicated below.

TABLE 11. 1
Plan Sheet Types by Design Submittal

SHEET TYPE		DESIGN SUBMITTAL		
		30%	65%	100%
I.	General			
	Title Sheet	X	X	X
	Project Layout/Index	X	X	X
	Typical Sections	X	X	X
	General Notes			X
II.	Traffic Control Plan			
	Typical Sections	X	X	X
	Phases Narrative		X	X
	Phase Layouts		X	X
	Detour Layout and Barricade Layout		X	X
	Temporary Traffic Signals, Illumination		X	X
	TxDOT Standard Plans		X	X
III.	Roadway Details			
	Removal Plans		X	X
	Alignment Data Sheets		X	X
	Survey Data and Control Plans	X	X	X
	Plan and Profile	X	X	X
	Intersection Details		X	X
	Driveway Details		X	X
	Miscellaneous Details		X	X
	TxDOT Standard Plans		X	X
IV.	Retaining Wall Details			
	Wall Layouts		X	X
	TxDOT Standard Plans		X	X
V.	Drainage Details			
	Hydraulic/Hydrologic Data		X	X
	Drainage Area Maps		X	X
	Drainage Discharge Calculation Table		X	X
	Inlet Capacity/Ponding Calculation Table		X	X
	Pipe/Culvert Flowline and Length Table		X	X
	Pipe/Culvert Hydraulic Calculation Table		X	X
	(Including Hydraulic Grade Line Elevation, Flow Velocity)			X

TABLE 11. 1
Plan Sheet Types by Design Submittal (continued)

SHEET TYPE		DESIGN SUBMITTAL		
		30%	65%	100%
	Culvert Layouts – All Types – Bridge Classification	X	X	X
	Pavement Underdrain Plans		X	X
	TxDOT Standard Plans		X	X
VII.	Utilities			
	Existing Utilities (Plan and Profile) Layout	X	X	
	Proposed Utilities (Plan and Profile) Layout		X	X
	Standards (for each utility type)		X	X
VIII.	Bridge			
	Bridge Hydraulic Data Sheets		X	X
	Bridge Layouts	X	X	X
	Foundation Layouts and Details		X	X
	Boring Logs	X	X	X
	Bridge Details		X	X
	TxDOT Standard Plans		X	X
IX.	Traffic Items			
	Traffic Signal Layouts		X	X
	Illumination		X	X
	Signing		X	X
	Pavement Markings		X	X
	Intelligent Transportation System (ITS)		X	X
	TxDOT Standard Plans		X	X
X.	Environmental Issues			
	SW3P's		X	X
	Sensitive Areas	X	X	X
	Wetland Mitigating Plan		X	X
	TxDOT Standard Plans		X	X
XI.	Miscellaneous Items			
	Aesthetic Details	X	X	X
	Landscaping/Irrigation		X	X
	Roadway Cross Sections	X	X	X
XII	Toll Facilities			
	Toll Features Support Plan		X	X

12.0 BRIDGES & HIGHWAY STRUCTURE DESIGN

12.1 STANDARDS AND GUIDELINES

Designs shall conform to current versions, at date of proposal, of the following documents. Structural design shall be in accordance with AASHTO Load and Resistance Factor Design (LRFD) Specifications.

AASHTO A Policy on Geometric Design of Highways and Streets

AASHTO Construction Handbook for Bridge Temporary Works

AASHTO Guide Design Specifications for Bridge Temporary Works

AASHTO Guide Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges

AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges

AASHTO Guide Specifications for Structural Design of Sound Barriers

AASHTO LRFD Bridge Design Specifications

AASHTO LRFD Bridge Construction Specifications

AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals

ACI 318 Building Code Requirements for Structural Concrete and Commentary

AISC Steel Construction Manual

Americans with Disabilities Act of 1990 (ADA), as amended (42 USC §§12101, *et seq.*), and the Texas Accessibility Standards (TAS)

AASHTO/AWS D1.5 Bridge Welding Code

AREMA Manual for Railway Engineering

FHWA Hydraulic Engineering Circular 18 (HEC 18), Evaluating Scour at Bridges

FHWA Hydraulic Engineering Circular 23 (HEC 23), Bridge Scour and Stream Instability Countermeasures

FHWA Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Design and Construction Guidelines, Demonstration Project 82 Ground Improvement

FHWA Regulation 23 CFR 772, Procedure for Abatement of Highway Traffic Noise and Construction Noise

NCHRP Report 350 Recommended Procedures for the Safety Performance Evaluation of Highway Features

TxDOT Bridge Design Manual

TxDOT Bridge Detailing Manual

TxDOT Bridge Project Development Manual

TxDOT Bridge Railing Manual

TxDOT Geotechnical Manual

TxDOT Guidelines for Analysis and Abatement of Highway Traffic Noise

TxDOT Hydraulic Design Manual

TxDOT LRFD Bridge Design Manual

TxDOT Roadway Design Manual

TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, adopted by TxDOT on June 1, 2004

Precedence. In the event of conflicting requirements in non-TxDOT documents, AASHTO *LRFD Bridge Design Specifications* shall govern for bridge and other highway structural design. American Railway Engineering and Maintenance of Way Association (AREMA) *Manual for Railway Engineering* or specific requirements of individual operating railroads shall govern for railroad bridge design. TxDOT manuals and standards, as modified by the RFDP, will take precedence over all other publications, specifications, handbooks, and guidelines except TxDOT manuals referencing previous AASHTO codes, standards, or requirements that shall not be used to regress from implementation of AASHTO *LRFD Bridge Design Specifications*.

12.2 GENERAL REQUIREMENTS

12.2.1 Plan Format

Plan submittals and drawings for all structures shall be in accordance with TxDOT practices using TxDOT standards, specifications, details, sheets, and title blocks with English units of measure. Specific provisions for bridges shall follow TxDOT *Bridge Detailing Manual*.

The following Bridge deliverables shall be submitted to the CTRMA for review for each bridge structure:

Preliminary (30%) Bridge Layout

Intermediate (65%) Bridge Submittal

Final (100%) Bridge Submittal

Record Drawing Submittal

12.2.1.1 Preliminary (30%) Bridge Layout

D/B CDA Developer Responsibilities. D/B CDA Developer shall submit Preliminary Bridge Layouts for all temporary and permanent bridges to the CTRMA for review after completion of schematic

plans (Preliminary (30%) Design Submittal). Boring logs as detailed in *Section 14* shall accompany each Preliminary Bridge Layout. With submission of Preliminary Bridge Layouts, D/B CDA Developer shall submit request for National Bridge Inventory (NBI) numbers to TxDOT.

Preliminary Bridge Layouts shall be prepared in accordance with preliminary data checklist provided in *TxDOT Bridge Detailing Manual*.

12.2.1.2 Intermediate (65%) Bridge Submittal

D/B CDA Developer shall submit Intermediate Bridge Submittal to the CTRMA for review concurrent with development of the Intermediate (65%) Design Submittal.

Intermediate bridge design packages shall include complete dimensional detailing of all bridge structural elements and include all detail design sheets. This shall include title sheets; bridge layouts; foundation layouts; foundation details and design tables; boring logs; abutment details; bent details; framing plans and elevations; slab plans, typical sections, and details; beam details and data sheets; typical details; deflection and camber diagrams; and other details as applicable. Packages shall list TxDOT bridge standards, TxDOT (mod) standards, and project specific standards to be used. Draft project standards and TxDOT (mod) standards shall be provided.

Intermediate bridge design package shall be suitable for content and format review and coordination with other design disciplines to integrate bridge appurtenances into plan set. It is not necessary to have structural design checks complete at this stage.

Individual detail sheet content shall be in accordance with applicable checklists provided in *TxDOT Bridge Detailing Manual*.

12.2.1.3 Final (100%) Bridge Submittal

Final Bridge Submittal shall include completed bridge layouts and final structural details for superstructure and substructure including all bridge appurtenances. Package shall be in accordance with checklists provided in *TxDOT Bridge Detailing Manual*.

Design calculations shall be complete and checked and copies of calculations shall be made available, if requested, by the CTRMA. Final Bridge Submittal will not be considered complete if calculations are not available, incomplete, or unchecked.

12.2.1.4 Bridge Appurtenances

Final locations of permanent signs, lighting, and traffic signals will be determined by D/B CDA Developer in accordance with provisions of this RFDP. Design of bridges must provide for attachment of sign structures; hangers and attachments for utilities; drainage structures; and current or future conduit for traffic signals, lighting, intelligent transportation system (ITS), telecommunications, or other equipment. Hardware embedments shall be called out, and referenced to other plan sheets for complete detailing of all structural appurtenances. Details shall

include hanger details, blockouts, and sleeve details for drainage, electrical, ITS, telecommunications, and other utilities.

12.2.1.5 Bridge Standard Drawings

With 65%, 100%, and Record Drawing Submittals, D/B CDA Developer shall submit a list of bridge standards for CTRMA review. Package shall clearly identify version of each TxDOT standard to be used, describe proposed TxDOT (mod) standards, and describe project specific standards. Draft TxDOT (mod) and project standards shall be provided with Intermediate Bridge Submittal concurrent with first bridge submittal where standard applies.

A TxDOT (mod) standard is defined as a minor revision to a TxDOT standard drawing. Standard remains on TxDOT border file with revision clouded, numbered, and documented. D/B CDA Developer's Engineer-of-Record seals TxDOT (mod) standards. Significant sheet revisions should not be processed as TxDOT (mod) standards.

A project standard is any standard detail not covered by TxDOT standards or a significant modification to a TxDOT standard produced on D/B CDA Developer's plan sheet border file.

With Final Bridge Submittal, D/B CDA Developer shall submit copy of applicable standards. Plans shall clearly specify which standards apply to each specific bridge installation. Notations designating applicable standards shall be included on project plans. Completed TxDOT (mod) and project standards shall be submitted in advance or concurrent with Final Bridge Submittal where standards apply.

12.2.1.6 Record Drawing Submittal

D/B CDA Developer Responsibilities. The D/B CDA Developer shall complete and submit Record Drawings in accordance with TxDOT computer-assisted drafting and design (CADD) standards and TxDOT bridge design standard practices. Bridge load ratings and indexed design calculations shall be included with Record Drawing submittal.

12.2.1.7 Shop Drawing and Falsework Design

D/B CDA Developer Responsibilities. Before fabrication of any structural element, D/B CDA Developer shall submit shop drawings to Design Engineer-of-Record for review and release. Design and plan preparation of temporary shoring or falsework is responsibility of D/B CDA Developer. All temporary shoring or falsework shall be reviewed in the field by Temporary Works Engineer-of-Record for compliance with temporary shoring and falsework plans.

Project Records. Record copies of all shop drawings and shoring or falsework plans shall be submitted to the CTRMA before construction begins on each work element.

12.2.2 Subsurface Investigation

The D/B CDA Developer shall perform subsurface exploration and prepare Project Geotechnical Engineering Report. Specific requirements for geotechnical design are addressed in Section 14.

12.3 HIGHWAY BRIDGE DESIGN REQUIREMENTS

12.3.1 General Requirements

The D/B CDA Developer shall meet the following design requirements.

Geometric Layout. Number and width of lanes, shoulders, railings, sidewalks, and planters shall comply with details shown in Exhibit D – Item 2a – Schematic Plan Sheets 1 and 2, Technical Provision 10, Technical Provision 11 and shall meet all applicable TxDOT and AASHTO requirements.

Locations and Heights. Modifications to bridge locations as shown in the Schematic Plan shall be shown in the Preliminary Submittal (30%) Design. Substructure locations and superstructure heights shall meet requirements for clearances and clear zone distances without introduction of barrier or guardrail.

Load and Resistance Factor Design. Design shall be in accordance with AASHTO *LRFD Bridge Design Specifications* and TxDOT *LRFD Bridge Design Manual*.

Vehicle Loads. All highway bridge designs shall be based on HL-93 loading.

Design Life. Bridges shall be designed to provide a 50-year life after completion of construction.

Superstructure. The D/B CDA Developer shall construct superstructures for highway bridges out of structural steel, prestressed concrete, or post-tensioned concrete. Adjacent (buted) precast concrete box beam bridges and slab beam bridges shall not be permitted. Used beams shall not be permitted.

Bridge Deck. Concrete bridge decks on stringers shall be a minimum of eight (8) inches thick. Concrete decks on adjacent beams such as box beams or slab beams shall be a minimum of five (5) inches thick. Prestressed panels will be allowed.

Surface Treatments. All bridge slabs and direct-traffic culverts shall be treated with a concrete surface treatment as described in TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*.

Future Overlay. Bridges shall also be designed to accommodate an overlay load of thirty (30) psf.

Materials. Unless written authorization from the CTRMA is provided, selection of materials shall be restricted to the following:

Structural steel shall be ASTM A709 Grades 36, 50 or 50W

Concrete reinforcing steel shall be Grade 60 (Epoxy coating of reinforcing steel is not required)

Prestressing steel shall be Grade 270 low-relaxation strands

Class II (Penetrating) Concrete Surface Treatment shall be used on this Project

Air Entrainment shall be waived on bridge slabs, rails, and substructure

All materials provided shall be new; no salvaged materials will be permitted.

Joints. The D/B CDA Developer shall minimize number of deck joints. Design and location of joints shall provide for maintenance accessibility and future replacement. All joints shall be TxDOT standard sealed expansion joints (SEJ-A).

Sidewalks. Sidewalks shall be in compliance with ADA standards and if required, shall be provided on both sides of local roadways. Minimum width of useable sidewalk shall be 5'-0" unless specified differently in the Scope of Work.

Protective Screening. Protective screening shall be provided on all bridges with sidewalks. Materials and details for protective screenings shall meet requirements of Section 10 and guidelines found in Exhibit D – Item 10a – Landscape and Aesthetic Requirements.

Local Roads. Cross-section of bridges carrying local roads over mainlanes shall, at a minimum, match width shown on schematic drawings and shall accommodate planned expansion or update of each facility by its respective owner. The D/B CDA Developer shall coordinate requirements with each owner and the CTRMA. Alignment shall meet desirable criteria indicated in TxDOT's *Roadway Design Manual* for the functional classification of each roadway.

Hydraulic. The D/B CDA Developer shall design bridges over water to withstand a 100-year peak flood event without collapse in accordance with FHWA design standards. The D/B CDA Developer shall provide a scour assessment and protection for hydraulic conditions set forth in Section 15.

Deck Drains. Bridge deck drains shall be provided when drainage design requires drain inlets located on bridge superstructure.

Splices. Lap splices or mechanical connectors shall be used for all reinforcing steel splices and connections. Rebar welding will not be permitted.

Weld. Welding shall be in accordance with requirements of AASHTO/AWS *D1.5 Bridge Welding Code*.

Maintenance Inspection. The D/B CDA Developer shall make all bridge superstructures, joints and bearings accessible for long-term inspection and maintenance. The D/B CDA Developer shall make box structures (steel, cast-in-place concrete, or concrete segmental box girders) with a minimum inside depth of six (6) feet to facilitate interior inspection. The D/B CDA Developer shall include a

minimum of two (2) access/ventilation openings of three (3)-foot diameter, or equivalent area, in each box cell. Access covers shall open inward, be accessible without impacting traffic below, and all hatches and points of access shall have lockable entryways.

Bridge Load Rating. The D/B CDA Developer shall provide both inventory and operating rating of as-built structures to the CTRMA. Load ratings shall be in accordance with AASHTO *Guide Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges*, TxDOT, and FHWA requirements.

Forms. Precast concrete panels in accordance with TxDOT standards shall be used for all bridges except for curved steel girder bridges where stay-in-place formwork shall be used.

Aesthetics and Planter Boxes. Aesthetics design shall be in accordance with details specified in this *Section, Section 10*, and guidelines contained in *Exhibit D – Item 10a – Landscape and Aesthetic Requirements*.

12.3.2 Beams and Girders

For prestressed concrete beams, maintain constant girder depths throughout bridge length. For steel girders maintain constant girder depth within and between beam units. Fascia overhangs shall be constant width for entire length of a bridge.

12.3.3 Foundation Design

Foundation type, foundation capacities, estimated drilled shaft and piling lengths, and bottom of footing elevations are to be determined by the D/B CDA Developer.

Abutments and Bents. Conventional abutments and bents as presented in TxDOT *Bridge Detailing Manual* shall be used. Integral abutments shall not be permitted. Foundations may include driven piles or drilled shafts for both abutments and bents.

Spread Footings. Spread footings shall not be permitted in locations with scour potential. Spread footings shall not be permitted for structures supporting railroads unless founded on competent bedrock.

Approach Slabs. The D/B CDA Developer shall use concrete approach slabs on all highway bridges. Approach slab design shall conform to TxDOT standards.

Slopes. Abutment endslopes beneath bridges shall be no steeper than 3:1 (horizontal to vertical).

Pile Report. When driven piles are used, the D/B CDA Developer shall complete a piling report for each substructure and shall submit to Design Engineer-of-Record for review and approval prior to pouring concrete pile caps. A record copy of piling report shall be concurrently submitted to the CTRMA.

12.3.4 Bridge Bearings

Standard TxDOT bearings shall be used for all highway bridges except where expansion length, load, or friction forces renders their use impractical. All bearings shall be reinforced elastomeric bearings or sliding elastomeric bearing pads. Design of elastomeric bearings shall conform to AASHTO *LRFD Bridge Design Specifications* as modified by provisions of TxDOT *LRFD Bridge Design Manual*. Tapered elastomeric pads will be allowed for precast prestressed concrete girders per TxDOT standards, and shall meet TxDOT durometer test procedures.

12.3.5 Bridge Railing and Barriers

Bridge rail and barrier systems shall conform to standards established by TxDOT and meet AASHTO and FHWA requirements.

Alternate Barriers. If the D/B CDA Developer proposes to use alternate barrier systems, only alternate barrier systems that have been crash tested and accepted by the FHWA for use on the NHS shall be used. Alternate barrier systems shall only be used with acceptance from the CTRMA. Alternate barriers shall meet Testing Level (TL) requirements, as defined by NCHRP Report 350, for standard TxDOT barriers.

Standard Bridge Rails. The D/B CDA Developer shall use either the TxDOT standard bridge rails or a modified rail if specified in [Section 10](#) for highway bridges.

12.4 RETAINING WALLS

Where possible, the D/B CDA Developer shall design and construct embankments or cut slopes within required side slope limits without use of retaining walls. Where limits for side slopes would be exceeded, the D/B CDA Developer shall use retaining walls. When retaining walls are required, retaining wall system must be on latest version on TxDOT approved manufacturer's list (including list for "Approved MSE Panel Types") or on TxDOT standard plan drawings. A single wall panel type shall be maintained throughout the Project. The proposed retaining wall system shall be submitted with the retaining wall layouts required in the Intermediate Submittal (65%) Design. The D/B CDA Developer shall not use steel modular walls.

Retaining walls on fill sections shall have a minimum embedment of two (2) feet below proposed finished grade at the face of the wall or, they shall be embedded a minimum of one (1) foot into existing grade. Slopes extending from the base of a wall shall not be steeper than 4 horizontal to 1 vertical.

The D/B CDA Developer shall provide positive protection at the top of all retaining walls.

MSE Walls. The D/B CDA Developer shall use only one (1) MSE retaining wall system. MSE walls shall not be used to support abutment foundations.

Live Load Surcharge. The D/B CDA Developer shall account for live load surcharges in accordance with provisions of AASHTO *LRFD Bridge Design Specification*.

Design Life. Retaining walls shall be designed to provide a 75-year life after completion of construction. Earth reinforcement elements shall have corrosion resistance and durability to ensure 75-year life. Maximum loss per side due to corrosion shall be computed by assuming a uniform loss model based on the following:

Zinc Corrosion Rate (First 2 years)	15 $\mu\text{m}/\text{yr}$
Zinc Corrosion Rate (subsequent years)	4 $\mu\text{m}/\text{yr}$
Carbon Steel Corrosion Rate	12 $\mu\text{m}/\text{yr}$

Weep Holes. No weep holes through face of retaining walls shall be allowed.

Aesthetics Requirements. All retaining wall systems shall address aesthetics as specified in Section 10.

12.5 DRAINAGE STRUCTURES

All drainage structures shall be designed in conformance with requirements of Section 15.

Design. Highway drainage structures shall be designed to accommodate HL-93 loading.

Design Life. The D/B CDA Developer shall design all culverts for a 50-year life.

Energy Dissipaters. All drainage structures with a calculated exit velocity of greater than that specified in Section 15 Table 15.4.2 shall have energy dissipaters and proper channel protection. All energy dissipaters shall be treated and considered as structural elements.

Submittals. Draft structural details shall be submitted to the CTRMA concurrent with development of 65% plans and final structural details provided with 100% plan packages. Drainage structural details shall be accompanied with copies of drainage plans sufficient to identify location and function of each element under design.

Identifiers. All culverts shall be identified on drainage plans by mainlane centerline station and size. For bridge class culverts, the D/B CDA Developer shall submit request for National Bridge Inventory (NBI) numbers to TxDOT. Bridge class culverts are defined as having an opening (i.e., distance) of more than twenty (20) ft between the extreme inside faces as measured along the highway centerline.

12.6 STRUCTURAL SIGN SUPPORT

Sign Supports. Structural design of sign supports shall be in accordance with AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*.

Non-Sign Supports. Structural design of high-mast lighting poles, mast arms, and strain poles for traffic signal supports shall be in accordance with AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*.

Locations. The D/B CDA Developer shall accommodate future build-out of facility in design and placement of overhead and cantilever sign supports. Clear Zone requirements shall be met for constructed and future lanes identified on schematic. Overhead sign column locations shall be submitted with the Intermediate Submittal (65%) Design. CTRMA reserves the right to reject overhead sign column locations that require barrier and guardrail protection to encroachments upon the clear zone. Acceptance of column locations will not be granted solely on cost and schedule.

12.7 OTHER BRIDGE STRUCTURES

Temporary Vehicular Bridges. Temporary vehicular bridges shall be designed using AASHTO *LRFD Bridge Design Specifications* and AASHTO *Guide Design Specifications for Bridge Temporary Works*.

Pedestrian Bridges. Pedestrian bridges shall be designed using the AASHTO *Guide Specifications for Design of Pedestrian Bridges* and AASHTO *LRFD Bridge Design Specifications*.

13.0 PERMANENT SIGNING DESIGN

13.1 REFERENCED STANDARDS AND GUIDELINES

The D/B CDA Developer shall comply with the most current edition of the following standards for permanent signing design:

AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals

AASHTO A Policy on Geometric Design of Highways and Streets

TxDOT Manual of Uniform Traffic Devices (MUTCD)

TxDOT Roadway Design Manual

TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, adopted by TxDOT on June 1, 2004

TxDOT Sign Detailing Handbook

TxDOT Signs and Marking Manual

13.2 PERFORMANCE REQUIREMENTS

D/B CDA Developer Responsibilities. The D/B CDA Developer shall design, furnish, and install a complete permanent sign system for the Project. The sign system must:

Provide for the orderly and predictable movement of all traffic

Provide such guidance and warnings to motorists as are needed to ensure the safe and informed operation of individual elements of the traffic stream

Minimize the amount of permanent signing on the bridges and retaining walls within the corridor

Aesthetics Guidelines. Permanent sign structures shall be aesthetically treated in accordance with Technical Provision 10.

Extent of Review. The permanent signing for this Project must incorporate a delicate balance between guide signing, business signing, destination signing, and aesthetics concerns. As such, the D/B CDA Developer shall anticipate an extensive review process from the CTRMA that will include coordination with TxDOT on specific roadways, and the probability of numerous revisions to the signing plans to resolve all review comments to the satisfaction of the CTRMA.

Layout Requirements. Signing plans shall include the layouts showing the locations of ground mounted and overhead signs, special sign details, legend, sign lighting, and structural and foundation requirements. Any requirements for electric service shall be coordinated with the applicable Utility Owners and provided by the D/B CDA Developer.

13.3 ROADWAY SIGN DESIGN CRITERIA

General. The sign system shall:

Provide uniformity in shape, color, dimensions, legends, illumination, and reflectivity with other highway signs within the Project corridor and on the frontage roadways in this corridor

Provide adequate time for appropriate motorist response to signs

Facilitate sign maintenance and servicing

13.3.1 Existing Signs

General. To avoid motorist confusion, the D/B CDA Developer shall remove, cover, or (if to be reused for temporary signs) salvage existing signs that conflict with the regulation of traffic through Project construction and final configuration or are no longer applicable because of construction sequencing or staging.

Ground-Mounted Signs. All ground-mounted existing signing on U-channel signposts (except for existing frontage road signing) shall be removed and will become the property of the D/B CDA Developer to dispose of.

Overhead Signs. All overhead sign structures identified for replacement shall become the property of the D/B CDA Developer for its disposal.

Conduit, Cable, and Switches. If any existing sign structures are to be reused for temporary signs, the D/B CDA Developer shall remove them and dispose of all conduit, cable, and safety switches.

Sign Lighting and Ballasts. Existing sign lighting fixtures and ballasts on all existing overhead and bridge-mounted sign structures shall be dismantled and hauled by the D/B CDA Developer to the appropriate agency. Advance notice of at least three (3) Business Days shall be given to agency before hauling, and materials shall be deposited where and as directed by agency personnel.

13.3.2 Sign Construction and Placement

General. The D/B CDA Developer shall:

Provide positive guidance to the traveling public at all times during construction by the use of existing, interim, and new signing to ensure safe and informed operation while traffic is maintained on the roadway

Furnish and install all new signs, posts, foundations and associated materials

For all new sign structures, fabricate and install walkway systems, as well as any other necessary facilities to accommodate future sign lighting

For new overhead sign structures, provide sufficient height to ensure desirable clearance which meets TxDOT standards for clearance above the roadway

At the appropriate time, mark on the Project site the locations of the proposed signs shown on the D/B CDA Developer's design drawings and conduct a construction design review with the CTRMA's representative before installation

No Reuse. The D/B CDA Developer may not reuse any existing sign materials or structures as part of the new permanent signing installation.

Interim Signing. The Maintenance of Traffic (MOT) plan submitted by the D/B CDA Developer must address the use of interim signing during the transition from existing to new signing; see Technical Provision 22 (Maintenance of Traffic). If signs are erected before the stated condition exists, they shall be covered securely with a durable material. This cover shall be bolted to the sign with a minimum of 0.015-inch plastic washers between the sign face and the cover.

Business Guide Signing: The D/B CDA Developer's attention is directed to Technical Provision 22 (Maintenance of Traffic) for business guide signing requirements during construction.

13.3.3 Maintenance During Construction

The D/B CDA Developer shall be responsible for maintenance during the Project construction until Final Acceptance of the signs, including (but not limited to):

Repair and replacement of damaged signs as required

Cleaning away dirt and other debris from signs as required

Moving and relocating guidance and warning signs as required for the effective and efficient movement of traffic

13.4 GUIDE SIGN DESIGN CRITERIA

Signs Outside Project ROW. The D/B CDA Developer shall design and install guide signs outside of the Final ROW for the Project. The scope of the Development Work for signs located outside of the Final ROW includes new signs and modifications to existing sign panels and structures.

Agency Coordination. The D/B CDA Developer will install signs located outside of the Project in existing rights-of-way controlled by other local or State agencies. The D/B CDA Developer shall coordinate with applicable governmental agencies for the design and installation of the guide signs outside of the Final ROW.

Sign Locations. The D/B CDA Developer shall install signs at all arterial intersections and interchanges in accordance with the complete sign layout submitted to the CTRMA by the D/B CDA Developer.

Use of Logo. The CTRMA will furnish the D/B CDA Developer a graphic design of the current CTRMA logo or logos as well as other artwork that the D/B CDA Developer shall integrate into the design and fabrication of guide signs.

13.5 ADVANCE TOLL SIGN DESIGN CRITERIA

Toll Sign Location. The D/B CDA Developer shall design and install advance toll warning signs within the Final ROW for the Project in accordance with the current TxDOT standards and the MUTCD. Signing for this Project will be consistent with previously completed segments of The 290E Toll Project. Signs shall be located in such a manner that they do not conflict with other signs, vegetation, or structures and are clearly visible according to MUTCD standards. The Scope of Work (*Exhibit B*) for advance toll warning signs includes:

Determination of sign locations

Installation of new signs

Determination of sign foundations

General criteria to be used by the D/B CDA Developer in determination of advance toll warning sign locations for the Project will be as follows:

At all locations where existing cross roadways provide the traveling public access to the Project

Prior to all entrance ramps to the Project

Layout Submittal. The D/B CDA Developer shall provide the CTRMA with a layout indicating the final locations of all advance toll warning signs. The CTRMA will review and provide comments to the D/B CDA Developer prior to any fabrication or construction.

Specific Toll Information. The specific wording to be included on the advance toll information signs shall be.

“Minimum Auto Toll \$X.XX” – with the amount of toll to be determined by the CTRMA based on the final sign location

The D/B CDA Developer shall provide specific toll signage identifying the payment method assigned for each approach lane prior to the toll collection gantry

Final coloration for toll signs shall be approved by the CTRMA.

13.6 THIRD PARTY SIGNS

In addition to the warning, regulatory, and guide signs within the Final ROW, the CTRMA may request that supplemental signs be installed by a third party. The D/B CDA Developer shall coordinate and cooperate with any third party performing such work. The CTRMA will have the sole responsibility for reviewing applications for new supplemental signs and for approving permits to install these signs. The cost for fabricating and installing these signs shall be borne by the sign applicant.

13.7 SUBMITTALS

13.7.1 Permanent Signing Concept Report

PSCR Submittal. At least four (4) weeks before beginning any final design of the permanent signing, the D/B CDA Developer shall submit to the CTRMA a Permanent Signing Concept Report (PSCR) that outlines the proposed permanent signing design. This is a concept report and the final signing design will not be considered complete until acceptance of the final (100%) plans.

Guide Signing. The PSCR shall include complete guide signing within the Project corridor signing area.

Contents. The D/B CDA Developer shall provide the following information:

Sign locations

Sign text layout

Panel size

Proximity to ITS devices, including overhead CMS locations

Types of proposed sign structures

Proximity to logo sign structures

Aesthetic concerns

Destinations on guide signing

Business signing

Interim signing requirements during construction

Analysis of signal system mast arm loading for mast-arm-installed signs

Design Meetings. During PSCR development, the D/B CDA Developer shall meet with staff of the CTRMA, TxDOT, local municipalities and county staff having jurisdiction over the Project corridor in developing the PSCR to discuss goals and parameters of the permanent signing design. This will include (but not be limited to) destinations shown on the guide signing and the businesses that will be provided signing.

13.7.2 Permanent Signing Plans

DQCM Certification. With its submittal of the Permanent Signing design, the D/B CDA Developer shall provide certification from the Design Quality Control Manager (DQCM) that the submittal meets the Project requirement as outlined in Technical Provision 2 (*Quality Management*).

Contents. The plan submittals shall include (but are not limited to) the following:

Design drawings showing type and location (station and offset) of the standard signs

Design drawing showing dimension and location of text on sign panels

Design drawings (other than TxDOT Standard Drawings) showing details of sign mounting, foundations, base connections, frames, and other related equipment, cross sections, etc.

For each ground-mounted sign with I-beam posts and for each overhead sign structure, depiction of a cross section, with indication of footing details, offsets, and mounting heights

Record Drawings

Certificates of compliance with specifications

Detailed shop drawings

Shop Drawings. All manufacturer-furnished shop drawings must be reviewed by the D/B CDA Developer for adequacy before their submittal for CTRMA review.

Review Period. The maximum CTRMA review period shall be twenty (20) Business Days.

14.0 GEOTECHNICAL CONSIDERATIONS

General. Preliminary geotechnical reports for the Project that provide surface and subsurface geotechnical conditions of the Schematic ROW are provided in *Exhibit D – Item 6 – Geotechnical Reports*. The D/B CDA Developer shall perform geotechnical investigations, testing, research and other measures necessary to verify the surface and subsurface geotechnical conditions of the Schematic ROW to be used by the D/B CDA Developer to complete the Work.

14.1 STANDARDS AND GUIDELINES

In conducting geotechnical investigations, analysis, and design, the D/B CDA Developer shall adhere to requirements in this Technical Provision and other parts of this RFDP, using the following:

AASHTO LRFD Bridge Design Specifications

AASHTO *Manual on Subsurface Investigations*

AASHTO T088-00, *Particle Size Analysis of Soils*

AASHTO T089-02, *Determining the Liquid Limit of Soils*

AASHTO T090-00, *Determining the Plastic Limit and Plasticity Index of Soils*

AASHTO T100-06, *Specific Gravity of Soils*

AASHTO T208-05, *Unconfined Compressive Strength of Cohesive Soil*

AASHTO T216-07, *One-Dimensional Consolidation Properties of Soils*

AASHTO T265-93, *Laboratory Determination of Moisture Content of Soils*

AASHTO T267-86, *Determination of Organic Content in Soils by Loss on Ignition*

AASHTO T297-94, *Consolidated, Undrained Triaxial Compression Test on Cohesive Soils*

ASTM D1586-08, *Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils*

ASTM D1587-08, *Thin-Walled Tube Sampling of Soils for Geotechnical Purposes*

ASTM D2113-08, *Rock Core Drilling and Sampling of Rock for Site Investigation*

FHWA, *Drilled Shafts: Construction Procedures and Design Methods*, IF-99-025 (latest edition)

TxDOT *Geotechnical Manual*

14.2 SUBSURFACE INVESTIGATION

14.2.1 General Requirements

The D/B CDA Developer shall perform a comprehensive subsurface investigation. Specific locations, frequency, and scope of subsurface investigation shall be determined by the D/B CDA Developer, but shall meet minimum requirements of this *Section*, and comply with requirements of the TxDOT *Geotechnical Manual*.

General Locations. The D/B CDA Developer shall perform borings and laboratory tests as necessary for the Project Design.

Investigation Tasks. In its subsurface investigation, the D/B CDA Developer shall:

Review preliminary plans, temporary staging plans and perform on-site inspection

Determine location of test boring and type of sampling required

Perform soil borings

Perform Texas Cone Penetration Tests

Obtain undisturbed soil samples and perform laboratory tests

Obtain rock core samples, if required

Measure groundwater levels

Maintain field boring logs and document drilling and testing in final boring logs

Property Access. Before taking any borings on private property, the D/B CDA Developer shall obtain permission from property owner.

Utility Clearance. Before performing borings, the D/B CDA Developer shall contact utility companies and ensure that no in-place utility structures will be encountered. The D/B CDA Developer shall be responsible for any claims resulting from damage to any utility structures, both above and below ground.

Traffic Control. Before commencing work within TxDOT, County, or Municipal right-of-way, the D/B CDA Developer shall notify the CTRMA. The D/B CDA Developer shall provide temporary traffic control in accordance with TMUTCD requirements and jurisdictions where boring operations are conducted.

14.2.2 Review and Inspection

Review of Plans. The D/B CDA Developer shall conduct a general engineering reconnaissance to inspect site soil and geologic conditions in the vicinity of proposed soils borings, and general locations of Project structures with regard to existing roads and waterways.

On-Site Inspection. The D/B CDA Developer shall conduct a general engineering reconnaissance to inspect site soil and geologic conditions in the vicinity of the proposed boring locations or as directed by CTRMA. The D/B CDA Developer shall record performance of existing embankments, differential settlements, foundation failures, active landslides, bedrock exposure, limits of questionable foundation areas, stability of adjacent earth or man-made masses, potential and existing damage to existing structures and facilities, and other pertinent observations.

14.2.3 Foundation Soil Borings

14.2.3.1 Locations of Borings

Minimum number and spacing of borings for bridge and retaining wall foundations shall be in accordance with spacing limits specified in TxDOT *Geotechnical Manual*. To complete substructure design additional borings may be necessary to identify unique site conditions or as follow-up to unusual items identified during site exploration or laboratory testing. Where possible, borings for bridge foundations shall be located adjacent to proposed piers and abutments.

14.2.3.2 Depths of Borings

Borings shall extend to depths sufficient to define subsurface profile for structures, embankments, and geotechnical features. All bridge borings in soil shall be carried to a depth of not less than twenty-five (25) feet below proposed bridge footing elevation or as defined by TxDOT *Geotechnical Manual*.

14.2.3.3 Drilling Methods

Either rotary drill method, hollow-stem auger method, or other acceptable means (in accordance with TxDOT guidelines) will be used to advancing boring and recovering undisturbed samples.

Rotary Drill. Rotary drill method shall be conducted as described in Section 7.5.1.4 in AASHTO *Manual on Subsurface Investigations*. Use of casings shall be at the D/B CDA Developer's discretion, except that casing shoe or bit shall not extend below top of any interval to be sampled. All casings shall be removed upon completion of boring.

Hollow-Stem Auger. Hollow-stem auger method shall be conducted as described in Section 7.5.1.5 in AASHTO *Manual on Subsurface Investigations*.

14.2.4 Standard Penetration Tests

Testing Standards. Standard penetration test (SPT) and split-barrel sampling of soils shall proceed in accordance with ASTM D1586. Texas Cone Penetration (TCP) Testing will be allowed.

14.2.5 Soil Sampling

Sampling Standards. Thin-walled tube sampling of soils shall comply with ASTM D1587 or ASTM D1586.

14.2.6 Rock Core Drilling

Drilling Standards. Diamond core drilling in rock shall be in accordance with ASTM D2113.

14.2.7 Borehole Sealing and Cleanup

Sealing. All test holes shall be backfilled or sealed in accordance with applicable rules and regulations governing sealing of test holes for prevention of infiltration into groundwater tables.

Records. Records of borehole sealing shall be submitted upon completion to the CTRMA.

Backfilling. Bore holes shall be backfilled to prevent subsequent damage to farm tilling and harvesting equipment and subsequent settlement hazardous to persons, animals, or equipment. If flowing artesian conditions are encountered, the D/B CDA Developer shall plug flow, properly seal source against future leakage, and prevent water from infiltrating other strata.

Cleanup. Upon completion of field work, the D/B CDA Developer shall remove all surplus material, temporary structures, debris on land and water, and leave premises in a neat, orderly condition. If any improvements are disturbed during boring operations, the D/B CDA Developer shall restore in kind and character to condition existing prior to commencement of work.

14.2.8 Field Boring Logs

The D/B CDA Developer shall record all pertinent information, using a field boring log for each boring. Logs shall be prepared in ink or by electronic media with printed copies filed daily. A copy of each original field log shall be submitted to the CTRMA.

Page Identification. Each page of each boring log shall be identified with:

Boring Number or ID

Sheet Number

Total number of sheets in the log

Log Contents. Each boring log shall contain, at a minimum, the following information:

General Identification:

Project identification number

Bridge designation or other identifying feature.

Dates of start and completion of boring

Name of drilling company, crew chief, and crew

Description of drill rig and type of TCP hammer

Boring Location:

Location of boring (with centerline station and offset, measured to nearest foot)

A vertical reference, indicating a preliminary ground surface elevation of boring to nearest 0.5 feet with final surveyed elevation being reported on final boring log

Results:

Field number of each sample, type of sample, and sample depth

Groundwater measurement data (as practiced, dependent on drilling method employed)

Description of each soil stratum encountered and sample obtained; including color, strength, moisture content, composition, and degree of stability

Drilling Parameters:

Diameter of boring

Method of drilling and sampling employed

Depth at changes in rate of advance of bit

Depth(s) at which any obstacle was encountered in advancing boring

Depth at which drilling mud return circulation was lost

Driven casing depth

For TCP, number of blows (in six (6)-inch increments) required to drive sampler

For a rock core, length of each run and length of core recovered

For plug drilling, type of cuttings flushed to surface

If specified depth was not reached, reason for abandoning boring

Any other unusual conditions encountered during drilling and sampling

Definitions: Definition of all symbols that are not self-explanatory

Borehole Survey Information. The D/B CDA Developer shall specify preliminary and final survey information (a sketch is acceptable), for each borehole, as follows:

Horizontal and vertical tie-ins to permanent Project survey control

Mean sea level (MSL) reference elevations taken from known benchmarks accurate to ± 0.1 foot

Station offset information for current alignment designators

14.3 LABORATORY SOIL TESTS

The D/B CDA Developer shall perform laboratory soils tests of sufficient number and type to ascertain nature, strength, conditions, stability, and consolidation characteristics of soil conditions existing at site that are pertinent to design and construction activities.

14.3.1 Soil Classification

Every sample shall be visually inspected, manipulated by hand, and fully described, with consideration given to logger's description of material on field boring log and particular emphasis to soil layer changes.

Mineral Soils. Using TxDOT *Geotechnical Manual*, all mineral soils shall be classified. Each layer and sample shall be described by color, moisture content, relative density, and relative consistency. All symbols and descriptions shall be defined on final boring logs.

Organic Soils. Organic soil samples shall be described by percentage (by weight) of organic matter (as determined by AASHTO T267, or similar approved method).

14.3.2 Laboratory Tests

Soil Moisture Content Tests. Laboratory determination of moisture content of soil shall proceed in accordance with AASHTO T265 or equivalent. Moisture content shall be determined for every soil sample except wash samples and tailings.

Unconfined Compression Tests. Testing for unconfined compressive strength of cohesive soil shall proceed in accordance with AASHTO T208.

Load Value. Unconfined compressive strength shall be determined from maximum load value obtained or load at fifteen (15%) percent strain, whichever is secured first.

Minimum Testing. A minimum of one (1) unconfined compression test per boring shall be conducted on each thin-walled sample of cohesive soil, if applicable.

Residual Samples. An undisturbed residual portion of each sample not used in unconfined compression test shall be retained and stored by the D/B CDA Developer for future consolidation, triaxial tests, or rechecking. Residual samples shall be sealed, packaged, and stored to preserve original condition.

Triaxial Compression Tests. Testing for strength parameters of soils by triaxial compression shall be in accordance with AASHTO T297 with pore water pressure measurement. Three (3) different consolidation pressures shall be used to define a failure envelope.

Unit Weight Tests. Moist unit weight shall be determined in conjunction with unconfined compression and triaxial compression tests.

One-Dimensional Consolidation Tests. Testing for one-dimensional consolidation properties of soils shall proceed in accordance with AASHTO T216. Samples shall be chosen to represent major compressible soil strata on overall Project.

Specific Gravity Determination. Testing for specific gravity of soils shall proceed in accordance with AASHTO T100. Specific gravity of soils shall be determined in conjunction with consolidation tests.

Atterberg Limit Tests. Testing for liquid limit of soils shall proceed in accordance with AASHTO T89. Samples shall represent major soil strata on overall Project. Testing for plastic limit and plasticity index of soils shall proceed in accordance with AASHTO T090. Plastic limit and plastic index shall be determined for all samples that are tested for liquid limit.

Grain Size Analysis. Particle-size analysis of soils shall proceed in accordance with AASHTO T088. Particle-size analysis shall be determined for all samples that are tested for liquid limit.

Organic Content Tests. Testing for organic matter content of soils shall proceed in accordance with AASHTO T267. Samples for organic matter testing shall be selected to represent major soil strata on overall Project that are black in color or described as organic.

14.3.3 Final Boring Log

A final boring log based on field boring log and containing all laboratory test results shall be prepared for each test boring.

Title Page. Title page for each final boring log shall contain:

- Sheet number and total number of log sheets for each boring
- Boring number
- Project number
- Bridge number or other identifying feature
- Dates of drilling
- Centerline station
- Offset distance
- Surface elevation
- Texas State Plane Coordinates
- Type of drilling equipment
- TCP hammer type (auto or manual)
- Whether drilling mud was used
- Definition of all symbols and terms not otherwise self-explanatory

Body of Log. Finished boring log body shall contain:

- Depth scale
- Horizontal line at stratum change

Elevation of bottom of boring

All logger's notes, tabulated by zone in which conditions were encountered

All laboratory test results, tabulated by retrieval depth

A description of material of each stratum

Water level observation

Submittal. An electronic copy of final boring logs in TxDOT Wincore digital file format shall be submitted to the CTRMA.

14.4 GEOTECHNICAL ANALYSIS AND DESIGN

14.4.1 Geotechnical Reports

General. The D/B CDA Developer shall produce a Geotechnical Engineering Report, signed and sealed by a Registered Professional Engineer, for each structure or geotechnical feature on Project. Report recommendations shall include engineering analyses and design recommendations, and shall be concise, specific, easily interpreted, and referenced to applicable industry standards.

Design Standards. All geotechnical designs, calculations, and recommendations shall be reviewed, checked, dated, and initialed by a Registered Professional Engineer. Analysis work and calculations shall be in accordance with recognized methods and engineering practice and conform to requirements of TxDOT *Geotechnical Manual* and TxDOT *LRFD Bridge Design Manual*. Foundation load shall be determined using AASHTO LRFD Bridge Load Combination Service I. Methods and procedures for stability analysis, settlement, bearing capacity, and pile requirements shall be at the D/B CDA Developer's discretion, except that all assumptions, soil parameters, water levels, and design criteria shall be stated. Method of analysis and procedures shall be referenced to engineering texts, handbooks, and journals, including page references. When computer programs are used, output forms may be submitted in lieu of design computations; however, output must be clearly referenced and supported as necessary by narrative and hand calculations. A check calculation initialed by a Registered Professional Engineer shall be performed on the most critical slip circle when computer analysis is used for slope analysis.

Submittal of Reports. Submittal and review of Geotechnical reports shall be in conjunction with associated structural plan submittals. Draft reports shall accompany 65% design submittals and final reports with 100% design submittals. Copies of all design calculations shall be made available upon request by the CTRMA. The D/B CDA Developer shall address review comments and prepare final reports. Final signed and sealed reports shall be submitted to the CTRMA concurrent with associated RFC plan submittals.

Contents. Geotechnical Engineering Report shall contain the following sections:

Project Information

Subsurface Investigation Summary

Foundation Analysis

Foundation Recommendations

Design Assumptions

Subsurface Investigation Results

14.4.1.1 Project Information Section

This section shall identify structure analyzed by type and location, and give any other pertinent information that aids in general description of design.

14.4.1.2 Subsurface Investigation Summary Section

This section shall contain information about borings, briefly describe foundation soil and rock conditions at site, summarize water table measurements, and interpret static water level, if applicable.

14.4.1.3 Foundation Analysis Section

The D/B CDA Developer shall summarize results of detailed geotechnical analysis, identifying critical design elements and provide basis for geotechnical recommendations.

Structures. For structures, suitable foundation types shall be assessed and alternate foundation types reviewed.

Embankments. For embankments, overall stability shall be assessed including bearing capacity, settlement, and global stability. The D/B CDA Developer shall provide settlement analysis in conjunction with use of wick drains, surcharged embankments, and lightweight fill material. In addition, an estimate of time rate of settlement shall be included to account for primary and secondary settlement that may be expected over life of facility.

Spread Footings. For spread footings, bearing capacity and settlement analysis shall be provided. Analysis shall include bearing capacities and factors of safety. Analysis shall include an estimate of total and differential settlement anticipated for each structure. Differential settlements for retaining walls shall be calculated based on thirty (30)-ft. spacing. Estimate of time rate of settlement shall be included to account for primary and secondary settlement over life of facility.

Piles and Drilled Shafts. For piles and drilled shafts, capacity figures shall show capacity in relation to tip elevation for both compression and tension. In addition, down drag and lateral squeeze shall be reviewed. Lateral earth pressure calculations including parameters for P-y curve development for structures subject to horizontal loads shall be developed. Minimum tip elevations, casing requirements and estimates of overdrive shall be provided.

Scour. All foundation elements shall be designed to account for losses in lateral and axial capacities due to scour.

Other Information. When required, foundation analysis shall include:

Analyses for structures supported on rock or tied to rock formations, including areas such as rock bolts and rock cuts

Construction considerations, such as design of temporary slopes and shoring limits

Special requirements for elements that may encounter difficult ground conditions or that may require atypical construction methods

Over-excavation (subcut) recommendations, backfill requirements, and related details

Construction staging requirements

Evaluation of wet-weather construction and water control during temporary construction

14.4.1.4 Foundation Recommendations Section

This section shall present recommendations, as applicable, such as:

Bearing capacities and associated safety factors

Footing sizes and embedment depths

Pile size, length, and tip elevation

Drilled shaft dimensions and construction methods

Slope angles

Waiting periods for embankments

Surcharge systems recommendations

Foundation types, sizes, and embedment depths

Topsoil excavations and muck and poor soil excavations

Trench excavation slopes

Temporary slopes and shoring limits

14.4.1.5 Design Assumptions Section

This section shall summarize design assumptions, including

Embankment fill heights

Unit weights of fill

Sideslope and endslope angles

Bridge loading information (both axial and horizontal)

Retaining wall loading information

Design methodologies

Any other pertinent information

14.5 GEOTECHNICAL FIELD INSTRUMENTATION

The D/B CDA Developer shall produce a Geotechnical Instrumentation Plan and submit it to the CTRMA as a part of the Formal Design Review prior to commencing earthwork.

Contents. The D/B CDA Developer shall identify recommended instrument types, locations, installation requirements, zones of influence, critical readings, and frequency of readings in Instrumentation Plan. Instrument readings shall be included in Geotechnical Report and included in supplemental instrumentation monitoring reports, as readings become available, including monitoring done during and after construction. All instruments shall be installed and monitored by the D/B CDA Developer. Any instruments that are damaged during construction and require removal and/or recalibration shall be replaced and/or recalibrated at the D/B CDA Developer's expense.

Monitoring. The D/B CDA Developer shall install geotechnical instrumentation where necessary to monitor:

Vibrations

Settlement and settlement rates of embankments

Pore water pressures

Ground water levels

Stability of walls and slopes

14.6 SETTLEMENT DAMAGE TO ADJACENT PROPERTIES

Zones of Influence. The D/B CDA Developer shall monitor settlements of structures, utilities, and other features within zone of influence of constructed embankments. For embankments, the zone of influence shall be defined as a zone extending a minimum horizontal distance (H) from toe of embankment, where H is height of embankment. For retaining walls, zone of influence shall extend from toe of footing to a minimum distance of twice height of wall.

Responsibility for Damage. The D/B CDA Developer is responsible for all damage caused by settlements to adjacent properties.

14.7 VIBRATION MONITORING AND CONTROL

D/B CDA Developer Responsibility. Construction activities may produce vibrations (such as blasting, pile-driving, vibratory compaction, pavement-breaking, or operation of heavy construction equipment). Various structures are located close to proposed work. All construction activities must be conducted to preclude damage to adjacent structures and limit impacts to occupants.

Monitoring Plan. The D/B CDA Developer shall establish a vibration monitoring plan and submit it to the CTRMA as a part of the Formal Design Review. Such plan shall include details for monitoring during vibration-producing activities (including, but not limited, to all blasting and pile-driving). The vibration monitoring plan shall delineate areas where vibration-producing construction activities will take place and propose monitoring locations.

Damage. The D/B CDA Developer shall be responsible for all damage caused by construction activities, including activities of any Subcontractor.

General Requirements. The D/B CDA Developer shall:

Before beginning any vibration-producing construction activities:

Contact nearby residents and others who may be affected.

Conduct preconstruction survey identifying structures susceptible to vibration damage

Establish vibration control threshold limits that will preclude damage (cosmetic cracking) to adjacent structures and interference with sensitive equipment.

Monitor and document vibrations during vibration-producing activities

14.7.1 Notification

The D/B CDA Developer is required to contact each household, institutional operator, and business establishment within construction area and near enough to easily perceive ground vibrations. Contact shall be by letter, sent before commencing blasting, pile-driving, or other construction activity that produces easily perceptible ground vibration. Letter shall be submitted to the CTRMA for review. Letter shall include, at a minimum:

Describe proposed construction

Explain potential for producing vibrations

Specify steps that will be taken to avoid potential damage from vibrations

Name and telephone number of contact person to respond to questions or concerns

Before beginning related construction operations, the D/B CDA Developer shall submit to the CTRMA a list of these contacts, including:

Name and address of person(s) contacted and (if known) their telephone numbers

Date letter was sent

Location(s) and telephone numbers of the building(s)

14.7.2 Preconstruction Survey

The D/B CDA Developer shall have expertise in areas of vibration mitigation and building damage susceptibility, or employ a Sub-consultant with such expertise. The D/B CDA Developer shall review proposed construction plans and identify areas where construction activities such as blasting and pile-driving will be close to existing building and structures.

The D/B CDA Developer shall conduct a Preconstruction Survey in two (2) parts:

Preconstruction Susceptibility Study

Preconstruction Building Condition Study

14.7.2.1 Susceptibility Study

Scope of Survey. Before beginning any construction activity on site, the D/B CDA Developer shall perform a Preconstruction Susceptibility Study of all buildings within:

400 feet from future blasting activities

250 feet from future pile-driving activities

Distance at which vibrations of 0.1 inch per second (ips) or greater will occur from construction activities

Objective of Survey. Objective of survey is to assess each building in survey area and determine susceptibility to disruption by vibration-producing construction activities. Disruption includes both cosmetic cracking (threshold damage) and impacts on sensitive equipment operation. The D/B CDA Developer shall categorize susceptibility of each building to cracking during construction activities as high, moderate, or low.

Right-of-Entry. The D/B CDA Developer shall be responsible for obtaining any and all Right-of-Entry releases from property owners needed to conduct pre-condition surveys.

Cosmetic Cracking. Susceptibility to cracking is threshold of cosmetic cracking, which is:

Threshold damage (e.g., opening of old cracks and formation of new plaster cracks; dislodging of loose structural particles such as loose bricks from chimneys)

Architectural or minor damage that is superficial and does not affect strength of structure (e.g., broken windows; loosened or fallen plaster; hairline cracks in masonry)

Building Susceptibility. Categories of building susceptibility to vibration are:

High Susceptibility. A building that has already experienced a significant amount of degradation of its primary structural and/or nonstructural system. Additional vibrations may further degrade these elements and possibly result in injuries to persons in building. Buildings with loose or

unstable elements, (such as loose bricks or structurally cracked terra-cotta cornices) are in this category.

Moderate Susceptibility. A building that may have experienced some building deterioration prior to construction activities although it has not yet experienced significant degradation of its primary structure or its nonstructural systems that would lead to further building degradation due to construction vibrations. This category includes buildings with bricks that may be loose (as determined by visual inspection) and buildings with small to moderate quantities of fragile, potentially unstable contents that may be damaged by construction vibrations.

Low Susceptibility. A building that is not expected to experience cosmetic cracking when subjected to moderate vibrations (such as those permitted by OSM vibration criteria) and if its contents will not be damaged by moderate vibrations.

14.7.2.2 Sensitive Operations and Equipment

Vibration Sensitivity. As part of Susceptibility Study, the D/B CDA Developer shall determine whether there are sensitive operations and/or equipment nearby, such as hospitals, computerized industries or banks, and industrial machinery. The D/B CDA Developer shall include a list of buildings with sensitive equipment or procedures in Susceptibility Report. The D/B CDA Developer shall take this information into account when specifying vibration control limits.

Susceptibility Report. Survey shall summarize each building and its susceptibility to vibration.

14.7.2.3 Building Condition Survey

Survey Items. Each building shall have its existing structural and cosmetic condition documented, including, but not limited to, the following items:

All interior subgrade and above-grade walls

Floors

Ceilings

Roof

Visible exterior as viewed from grade level

At a minimum, conditions shall be documented with photographs or engineering sketches of each wall, ceiling, floor, and roof, with each identified by its relative location within building.

Building Condition Report. Survey shall be summarized in a Building Condition Report, which will include location of each building, documentation of existing conditions, and a description of areas of concern; in a format acceptable to the CTRMA.

14.7.2.4 Preconstruction Survey Submittal

Before beginning construction involving pile driving or blasting, the D/B CDA Developer shall submit Preconstruction Survey Report, comprising:

Contacts: List of building locations, building occupants, institutional owners, and businesses with whom the D/B CDA Developer has contacted and notified of potential for construction-induced vibrations

Preconstruction Susceptibility Study: List of buildings and susceptibility to vibration damage, including any buildings with sensitive equipment or procedures that may require special care or adjustments to normal construction procedures

Preconstruction Building Condition Report: List of buildings and condition of each structure prior to any construction activity.

14.7.3 Vibration Controls

Based on identified buildings with sensitive equipment or procedures listed in Preconstruction Survey, the D/B CDA Developer shall establish vibration control limits at a level that precludes threshold damage (cosmetic cracking) to adjacent structures and interference with sensitive equipment. This vibration limit shall be site- and activity-specific, but may not be less restrictive (i.e., it may not allow higher vibration levels) than OSM frequency-based vibration criteria (C.H. Dowding, *Construction Vibrations*, 1996). Vibration limits shall be summarized in a report to the CTRMA, and shall specify special requirements. Vibration limits shall be expressed in *peak particle velocity*, which is maximum rate of change of particle displacement with respect to time.

14.7.4 Monitoring of Vibrations

At a minimum, the D/B CDA Developer shall monitor vibrations at all buildings within one-hundred (100) feet of pile-driving activities and within two-hundred (200) feet of blasting activities. If more than one (1) structure lies within minimum distance, the D/B CDA Developer shall monitor two (2) closest or most critical buildings. The D/B CDA Developer shall monitor vibrations continuously during vibration-producing events. If vibration level of any of the three (3) components of peak particle velocity exceeds vibration limit, then the D/B CDA Developer must immediately cease vibration-producing activity and notify the CTRMA that a violation has occurred. The D/B CDA Developer shall submit a written report to the CTRMA explaining conditions of violation and steps to be taken to reduce vibrations below vibration limit. The D/B CDA Developer may not resume vibration-producing activity until given written permission to do so by the CTRMA.

14.7.4.1 Instrumentation

Vibration instrumentation must be able to measure, record, and produce a hard copy printout of frequency and peak particle velocity in three (3) mutually perpendicular axes. Vector sum instrumentation is not allowed. Instrument must also be able to plot measured vibration level against OSM criteria, or report frequency and displacement of each vibration event.

Number of instruments required depends on specific site, and shall be addressed in Vibration Monitoring Plan. There shall be a minimum of two (2) vibration monitors. One (1) monitor shall be used on-site. The second monitor shall be used as needed, at a critical structure or at a specific complaint location.

14.7.4.2 Data Recording

The D/B CDA Developer shall maintain records of all vibration-producing activities for which vibration monitoring is required. Monitoring records shall be made available to the CTRMA. Records shall include:

Location of vibration-producing event

Distance from event to monitoring site(s)

Scaled distance:

For blasting, actual distance divided by square root of pounds of explosive energy per delay

For pile-driving, actual distance divided by square root of pile-driving energy

Maximum peak particle velocity

14.7.4.3 Vibration Monitoring Submittals

Before beginning any construction activity involving pile-driving or blasting, the D/B CDA Developer must submit the following vibration monitoring documents:

Vibration Control Limits

Vibration Monitoring Plan, including:

Type(s) of vibration instrumentation that the D/B CDA Developer will supply

Current calibration records for each instrument

Designated person who will be in charge of deploying and operating instruments

15.0 DRAINAGE DESIGN

The D/B CDA Developer's Project Design shall include all components of the drainage and storm water management systems including all curb inlets, grate inlets, manholes, junction boxes, headwalls, safety end treatments, culverts, storm sewers, lined channels, ditches, swales, detention pond facilities, bridges and any other appurtenances necessary to provide proper drainage for the Project. The drainage features of the Project Design shall be consistent with, and not preclude the construction of the Ultimate Design including all mainlanes, ramps, cross-street intersections, and major interchanges.

The D/B CDA Developer shall design and construct a drainage system that provides a well-drained corridor and a safe environment for the individuals who construct, use, and maintain the highway.

15.1 STANDARDS AND GUIDELINES

1. FHWA, Hydraulic Engineering Circular No. 20 – Stream Stability at Highway Structures
2. FHWA, *Hydraulic Design Series No. 3, "Design Charts for Open Channel Flow," (EPD-86-102)*
3. FHWA, *Hydraulic Engineering Circular No. 18 – Evaluating Scour at Bridges*
4. *TxDOT Hydraulic Design Manual*
5. *TxDOT Roadway Design Manual*
6. *TxDOT Bridge Project Development Manual*
7. *TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, adopted June 1, 2004
8. U.S. Department of Agriculture Soil Conservation Service (NRCS), *Hydrology Design Manuals*
9. City of Austin, *Texas Drainage Criteria Manual*, updated December 2009

Disclaimer. The CTRMA makes no warranties as to the accuracy or usefulness of the above information, and the D/B CDA Developer assumes all risks associated with its use.

15.2 DRAINAGE ANALYSIS AND EVALUATION

The D/B CDA Developer shall design the drainage and stormwater management systems, and obtain all associated permits. All design work must comply with the *TxDOT Hydraulic Design Manual*, and, if applicable, the requirements of the City and regulatory agencies.

This work shall include the engineering analysis necessary to design any or all of the following drainage features: curb inlets, grate inlets, manholes, junction boxes, headwalls, safety end treatments, culverts, storm sewers, channels, detention facilities, bridge hydraulics, and any other appurtenances necessary to provide proper drainage for the Project. The D/B CDA Developer is responsible for coordinating with all applicable permitting agencies. Full documentation of all

meetings and decisions is to be submitted to the CTRMA, and these activities and submittals must be coordinated through the CTRMA.

15.2.1 Data Collection for Drainage Design

General. The analysis and design of the drainage features for the Project Design and the Ultimate Design will require acquisition and evaluation of appropriate data in the subject watersheds and general vicinity of the Project, including:

- Watershed characteristics
- Stream data
- Climatological data
- Other physical data such as, but not limited to, general gradients, topographic features, and vegetation cover

Data & Studies. Data pertinent to these watercourses and associated watersheds may be obtained from previous studies, if applicable, or may require supplementary investigations. This data is in addition to the information required for development of the roadway and structural design. The D/B CDA Developer shall generate and analyze such data required for the analysis and design of the drainage features. In all cases, the D/B CDA Developer shall conduct field reconnaissance to verify the existing data and/or to obtain supplementary information.

Physical Features. Watershed characteristics should include drainage area size, general topography, and land use for the existing and anticipated future conditions, soil types, vegetation and other pertinent physical features. The D/B CDA Developer shall obtain climatological data, specifically rainfall and/or intensity-duration-frequency data for analysis of hydrology and contributing drainage areas. Stream data should include geomorphic factors as outlined in FHWA's *Hydraulic Engineering Circular No. 20 – Stream Stability at Highway Structures*, including roughness characteristics, stream profile and cross sections, historic flood stages, upstream and downstream flow controls including existing and proposed structures, and soil borings from the channel and floodplain in the vicinity of the proposed improvement. The D/B CDA Developer shall obtain historic scour data from bridge inspection records for existing bridges and other crossings on the same and nearby watercourses. The D/B CDA Developer shall obtain stream flow data from USGS or other governmental agencies gauging stations for watercourses to be crossed, where available. The D/B CDA Developer shall include documentation of the obtained data, including field site survey photographs as part of the overall drainage design/analysis submittals to the CTRMA.

15.2.2 Hydrology Analyses and Design

General. The D/B CDA Developer shall perform hydrologic analyses for the design of drainage features for the Ultimate Design. The D/B CDA Developer shall select the appropriate hydrologic method based on the criteria in this Technical Provision. The type and extent of the analyses should be commensurate with the hazards associated with failure of the proposed drainage feature

and with other concerns including economic, engineering, social, and environmental factors. The D/B CDA Developer shall use unit hydrograph methods for all detention and routing analysis.

Frequency Selection. The D/B CDA Developer shall design the drainage feature capacities by frequency selection for the Ultimate Design conditions as indicated in this Technical Provision. When rainfall-runoff analyses are conducted, the D/B CDA Developer shall include determination of design rainfall distributions and abstractions. The D/B CDA Developer may assume that rainfall amounts will be uniformly distributed within individual drainage areas. Abstractions used by the D/B CDA Developer for the analysis must include infiltration, depression storage, interception, evaporation and transpiration.

Future Drainage Conditions. The design shall incorporate future land-use plans and/or potential land uses of municipalities within the Project corridor, and other applicable government entities, and expected changes to the existing watercourses and drainage systems. Future land use shall be determined from community land use planning documents or other available documents. Existing or future detention facilities shall only be considered in the computation of flow if they are located in dedicated drainage easements and have an operations and maintenance plan.

Quantities. The exact numbers of drainage basins, outfalls, and stormwater management facilities (retention/detention facilities, weirs, etc.) shall be determined by the D/B CDA Developer.

Tasks and Submittals. The objective is to maintain the existing drainage patterns and obtain approval of the stormwater treatment and attenuation design. The D/B CDA Developer shall:

- Design and generate construction plans documenting that the permitted drainage system functions as specified by Texas Pollution Discharge Elimination System (TPDES) criteria;
- Submit general permit applications for the Project with construction plans to a level of completion sufficient to document that the permitted drainage system functions as specified by TPDES;
- Acquire all permits, including the USACE Section 404 Permit and the TPDES permit.

Refer to Section 9 for more specific requirements related to Project permits.

Final Hydraulic Report(s). The D/B CDA Developer shall provide the CTRMA signed and certified Final Hydraulic Report(s), which shall be a record set of all drainage computations, both hydrologic and hydraulic. The D/B CDA Developer shall include all support data, such as soil boring logs and permeability test results. The D/B CDA Developer shall provide the CTRMA signed and sealed scour assessment and protection reports as required.

15.3 DESIGN AND CONSTRUCTION CRITERIA

15.3.1 Specific Requirements

At a minimum, the drainage system shall meet the following requirements.

General. The design and construction of all drainage structures and appurtenances shall adequately address the design improvements, functionality, durability, low life-cycle costs, ease of maintenance, maintenance access, safety, aesthetics, protection against vandalism, and environmental concerns, according to the Contract Documents, the referenced standards and guidelines and the requirements of this Technical Provision. The D/B CDA Developer shall abide by and fulfill the drainage system requirements, while at the same time meeting the requirements of other Project design elements (construction staging, etc.).

Drainage Flow. The D/B CDA Developer shall maintain historic drainage patterns through the design and construction of a drainage system within the right-of-way (including outfalls) to accommodate all stormwater that originates within or that reaches the right-of-way, from additional properties and easements from the contributing drainage areas. D/B CDA Developer shall provide adequate waterway openings to convey the flow of contributing storm sewers, ditches, rivers, and creeks crossing the Project subject to Federal Emergency Management Agency (FEMA) regulations, local floodplain administrator regulations, and USACE regulations.

USACE Flood Control. The design shall be compatible with the existing USACE Flood Control projects in the Project corridor.

Drainage Criteria. The D/B CDA Developer shall design, as specified in the TxDOT *Hydraulic Manual*, the drainage system to prevent accumulation of water upon and adjacent to mainlanes, to provide drainage for mainlanes so they remain passable during the specified design storms, and to provide drainage of the frontage roads and adjacent property that will minimize the number of lanes that will be impacted during the specified design-year storm.

Design Storm. All drainage structures and storm systems shall be evaluated for acceptability during the 100-year storm event. However, the D/B CDA Developer shall provide sufficient stormwater conveyance and/or storage for storm events, as identified in this Technical Provision, that exceed the design frequency criteria to keep roadways passable and to avoid adverse impacts on the Project.

Damage and Erosion. The D/B CDA Developer shall evaluate and determine effective protection for the roadway, subgrade, and highway structures from water damage and shall provide protection from erosion of the sideslopes, both on the Project and on adjacent property.

Approvals and Permits. The D/B CDA Developer shall fully comply with applicable laws related to drainage and shall acquire all applicable Governmental Approvals and permits; including, but not limited to, the NPDES permit and the USACE Section 404 permits.

Design Considerations. The design shall consider, but not be limited to, pipe, inlet locations, capacity, locations of culvert inlet and outlet structures, manhole structure locations, and provision of culvert openings for natural channels.

Culverts. The D/B CDA Developer shall determine the need for bridge class culverts (spans of twenty (20) feet and greater, as measured along the roadway centerline). It is the D/B CDA

Developer's responsibility to determine the location and appropriate size of all culverts needed for the Project.

Stormwater Discharge. The D/B CDA Developer shall evaluate stormwater discharge at each outfall to ensure that there is no adverse impact on upstream and downstream property. The D/B CDA Developer shall be responsible for any mitigation measures (such as retention/detention facilities) necessary to correct any adverse impacts arising from or out of stormwater discharge.

Documentation. All drainage documentation; including, but not limited to, design computations, details, and plan sheets, shall be approved and signed, sealed, and dated by a Registered Professional Engineer licensed in the State of Texas. The design storm frequency shall be indicated on all calculations. A final drainage report is required for the project to be submitted with final construction plans.

Pump Stations. No pump stations may be used.

Removals and Voids. Any inlet, catch basin, pipe, or any other drainage structure that will not become part of the final drainage system shall be removed. No element may be abandoned in place, and all voids must be filled.

15.3.2 Mainlanes, Ramps, and Direct Connector Drainage

The general design criteria associated with mainline and direct connector construction must comply with the following requirements:

- Design frequency for storm sewers, inlets, and laterals where emergency overflow is present: 10-year;
- Design frequency for storm sewers, inlets, and laterals for depressed roadway sections with no emergency overflow: 50-year;
- Allowable ponding width: the width of the shoulder;
- Design of culverts and small bridges shall meet FEMA requirements where applicable. Culverts and bridges shall be designed to convey a minimum 50-year storm without inundating the roadway pavement. Bridges shall provide two (2) feet of freeboard for the 50-year storm and one (1) foot of freeboard for the 100-year storm. The structure shall also be designed to accommodate the 500-year even without significant damage. All storm events along with event year elevations shall be indicated on the final plans;
- All features of the roadway facility will be assessed under the 100 year design storm to ensure compliance with FEMA regulations, USACE regulations, and that there must be no adverse impacts to adjacent properties in accordance with the National Flood Insurance Program regulations.

15.3.3 Frontage/Access Roads Drainage

The general design criteria associated with frontage road construction must comply with the following requirements:

- Design frequency for a storm sewer on urban roadway section or roadside ditches and small culverts on rural section: 10-year;
- Design frequency for storm sewers and inlets for a depressed roadway section with no emergency overflow: 25-year;
- Allowable ponding width: the width of one lane;
- Design of culverts and small bridges shall meet FEMA regulated requirements where applicable. Design frequency for culverts shall be for a minimum of a 10-year storm. Design frequency for small bridges shall be designed for a minimum of a 25-year storm with two (2) feet of freeboard for small bridges. The impact of a 100-year flood shall also be evaluated and indicated on the final plans; All storm events along with event year elevations shall be indicated on the final plans;
- Design frequency for major river crossings shall meet FEMA regulated requirements and shall be designed for a minimum of a 50-year storm with two (2) feet of freeboard. The impact of a 100-year flood shall also be evaluated and indicated on the final plans.
- All features of the roadway facility will be assessed under the 100 year design storm to ensure compliance with FEMA regulations, USACE regulations, and that there must be no adverse impacts to adjacent properties in accordance with the National Flood Insurance Program regulations.

15.3.4 City and County Cross-Streets Drainage (Minor Collectors)

The general design criteria associated with intersecting City and County cross-street construction must comply with the local jurisdiction's criteria. If no jurisdictional criteria exist, the general design criteria associated with intersecting City and County cross-street construction must comply with the following requirements:

- Design frequency for storm sewers for urban roadway sections: 10-year;
- Design frequency for open channel and small culverts for rural roadway section: 10-year;
- Design frequency for inlets along depressed roadways: 25-year;
- Allowable ponding width: width and depth that will allow passage of one (1) lane of traffic;
- Design frequency for culverts and small bridges shall meet FEMA regulated requirements. Design frequency for culverts shall be for a minimum of a 10-year storm. Design frequency for small bridges shall be for a minimum of a 25-year storm. The impact of a 100-year flood should also be evaluated and indicated on the final plans.

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- All features of the roadway facility will be assessed under the 100 year design storm to ensure compliance with FEMA regulations, USACE regulations, and that there must be no adverse impacts to adjacent properties in accordance with the National Flood Insurance Program regulations.

15.4 CONVEYANCE SYSTEM DESIGN

15.4.1 Design Criteria

The minimum pipe sizes shall be 18", except for underdrains for retaining walls and water quality facilities. (*Minimum Pipe Sizes*).

15.4.2 System Material

Materials. Pipes shall be any of the following materials, as qualified herein:

- Reinforced concrete
- Galvanized corrugated steel

Materials for culverts crossing the roadway centerline must be reinforced concrete pipe. Materials for culverts outside of the roadway and through approach roads must be determined based on engineering analysis. A change in pipe class type or material will be allowed only at catch basin or manhole locations. Culverts crossing beneath railroad tracks must be of a material approved by the railroad. The D/B CDA Developer will provide D-load structural loading calculations for pipes in fill over 23 feet.

15.4.3 Outlet Protection

All conveyance system outlets shall be designed to minimize downstream erosion. Velocity protection and control devices shall be designed according to the guidelines of the TxDOT Hydraulics Manual.

Safety Aprons. Culvert ends located outside of the clear zone do not need safety aprons or grates. If culvert ends are located within the clear zone, they must be treated in accordance with the current TxDOT guidelines.

15.4.4 Outfall Channel Improvements

The D/B CDA Developer shall design outfall channels carrying storm drainage from the Ultimate Design, to major cross-channels for a 50-year storm. For channels draining over 200 acres, the channel section must be capable of conveying a 100-year storm. The appropriate governmental agency must approve all improvements and/or ties to major cross-channels, ditches, or creeks in writing. The D/B CDA Developer shall use a 50-year starting water surface elevation in the outfall channels, based on the frequency, as defined by TxDOT, in the design of the storm sewer system.

15.5 BRIDGE HYDRAULICS

The D/B CDA Developer shall complete and submit to the CTRMA, as a part of the Formal Design Review, detailed bridge hydraulic computations for both existing and proposed conditions.

Consistency with Past Studies: All hydraulic computations, designs, and recommendations shall be consistent with past studies and projects in the area by the USACE, the TCEQ, and other State or Federal agency studies and projects.

Bridge Drainage: Runoff from bridge decks shall be carried off the bridge and into the adjacent roadway drainage system if within acceptable ponding limits. Bridge deck drains shall be provided when drainage design criteria require drain inlets be located between the bridge abutments. If required, the bridge deck drains shall be part of a closed drainage system and drain into the storm drainage system required for the Project. The D/B CDA Developer shall not use an open rail system on this Project. The roadway drainage design shall include bridge approach drains to intercept gutter flow at both ends of the bridge. Stormwater flowing toward the bridge shall be intercepted prior to the approach slab. The inlets and catch basins shall conform to the requirements of this of this Technical Provision.

15.6 OPEN CHANNELS AND DITCHES

Design Requirements. See Section 11.3.12 – Ditches, of these Technical Provisions for additional requirements.

Ditch Shape. Minimum ditch flow requirements are as follows:

- Minimum Grade: 0.3%
- Ditch lining shall be designed to accommodate the design flow and velocities.
- Open channels and ditches that parallel the roadway shall be designed to contain the 10 year frequency.

15.7 STORMWATER MANAGEMENT SYSTEM

15.7.1 Detention and Water Quality Design

Ponds. Ponds may be required to address water quantity and flow rate control. The design must comply with the rules of the best management practices for such facilities.

15.8 STORMWATER POLLUTION PREVENTION PLAN (SW3P)

The D/B CDA Developer shall develop, construct, and maintain a stormwater management plan that is in compliance with applicable Law and shall procure all Governmental Approvals in connection therewith. The stormwater management plans shall include provisions for control of sedimentation

and erosion, runoff, Storm Water Pollution Prevention Plan (SW3P), and water quality during Development Work construction and for the life of the Project.

NPDES Compliance. The D/B CDA Developer must prepare a Stormwater Pollution Prevention Plan (SW3P), as required by NPDES. Detailed limits of the erosion control items must be shown on the roadway plan sheets.

Submittal. The SW3P must be submitted along with the D/B CDA Developer's certification prior to beginning construction activities.

Erosion Control. This Project must meet the NPDES requirements (including preparation of and compliance with an SW3P) to control erosion and sediment. The D/B CDA Developer must submit all parts of the NPDES application to the appropriate agency and send a copy of the application to the CTRMA.

15.9 WATER RESOURCES PERMITS

D/B CDA Developer Responsibility. The D/B CDA Developer is responsible for obtaining all stormwater-related permits required for construction of the Project. Typically, this will include permits from the USACE, TCEQ, TPDES, local stormwater planning organizations, watershed districts, and watershed management organizations. All technical data and drawings necessary for permitting agency review shall be provided by the D/B CDA Developer to support the permit submittals. In the case of watershed management organizations (which have no statutory permit authority over State highway projects), the D/B CDA Developer shall coordinate with them in a customer-friendly manner.

The water resources aspects of the Project must be designed to meet the requirements of the local water planning organization, watershed district, or watershed management organization, and the State NPDES permit. This typically will require the D/B CDA Developer to:

- Develop temporary and permanent Erosion Control Plans in accordance with the current NPDES permit guidelines.
- Design any ponds or other special hydraulic features necessary to meet the NPDES requirements.
- Design and size all riprap applications on the Project.
- Design all special control structures such as (but not limited to) weirs, skimmers, and grit chambers.
- Identify and show all environmentally sensitive areas per the NPDES rules and provide this information in the plans.

Wetland Impacts and Mitigation. The D/B CDA Developer's responsibilities related to wetland impacts and mitigation shall be in accordance with Section 9.3.10. To the extent that wetland

mitigation is required, wetland mitigation areas shall be prepared and drafted in detail by the D/B CDA Developer so the information can be electronically merged into the Project's As Built Plans.

15.10 COORDINATION OF WATER RESOURCES ISSUES

D/B CDA Developer Responsibility. Projects with significant water resources impacts or wetland impacts require considerable coordination to find and develop acceptable mitigation sites. The D/B CDA Developer is responsible to ensure that adequate coordination occurs so the Project is not delayed by permitting issues.

Coordination. The D/B CDA Developer shall coordinate all water resource issues, including meetings related to water resources engineering, meeting minutes, and memoranda for the record.

Water Resources Log. The D/B CDA Developer shall maintain a log of the Project's water resources issues, including copies of all pertinent correspondence. Copies of correspondence shall be provided to all personnel as necessary to ensure good project coordination. At Final Acceptance, the D/B CDA Developer shall provide a complete copy of the log to the CTRMA.

15.11 AS BUILT DRAINAGE PLANS

Items. The D/B CDA Developer must prepare As Built Plans, notes, and details that include, but not limited to the following items:

- Drainage area map(s)
- Hydraulic plan and profiles sheets
- Hydraulic notes and tabulations
- Design of storm sewer systems
- Culvert designs and risk analysis
- Ditch and outfall plan and cross section sheet(s)
- Pond designs and details.
- Detention pond plan and cross section sheet(s)
- Designs for wetland and floodplain mitigation
- Special drainage detail sheet(s)
- Erosion Control Plan and details
- Completed permit applications
- Correspondence file

16.0 PAVEMENT MARKINGS

16.1 REFERENCED MANUALS, STANDARDS, AND GUIDELINES

Pavement Marking Specifications. For permanent striping and interim (temporary) striping, the D/B CDA Developer shall use pavement marking materials that conform to the following specifications and guidelines:

AASHTO A Policy on Geometric Design of Highways and Streets

AASHTO Roadside Design Guide

Texas Manual on Uniform Traffic Control Devices (TMUTCD)

TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges

TxDOT Roadway Design Manual

TxDOT Pavement Marking Handbook

TxDOT Signs and Markings Manual

TxDOT Standard Plans

16.2 GENERAL

These general requirements apply to both interim and permanent pavement markings.

Functional Requirements. The D/B CDA Developer shall design, furnish, and install pavement striping and traffic markings on all roadways within the Project limits that:

Provide for the orderly and predictable movement of all traffic

Provide for the safe and uniform operation of vehicles in the traffic stream

Are uniform in type, color, dimensions, location, and reflectivity with all other roadway pavement striping

Have been coordinated with the Toll System Integrator (SI)

Designs. The D/B CDA Developer shall prepare interim and permanent pavement marking designs. The designs must show center striping, edge striping, lane line striping, arrows, legends, symbols, object markers, and other markings consistent with the needs of the Project, and must conform to the TxDOT's standard requirements. The plans shall include all markings necessary to guide drivers through the Project, based on the D/B CDA Developer's project staging, as well as the removal of any existing conflicting pavement markings.

Annual Testing and Correction. Until Final Acceptance the D/B CDA Developer shall test the pavement markings within the Project limits each spring (March–April), beginning with the spring

after initial installation, and take whatever corrective actions are necessary to bring the pavement markings into compliance with the requirements herein.

Warranties. The D/B CDA Developer shall meet the warranty requirements for pavement markings as specified in Section 3.

16.3 PAVEMENT MARKING MATERIALS

16.3.1 Permanent Pavement Markings

General. Permanent pavement markings shall meet the following requirements:

All final edge line delineation shall be permanent reflectorized pavement markings as shown on TxDOT Standard Plans

All final centerline delineation, turn arrows, object markers, gore striping, and lane line delineation shall be permanent reflectorized pavement markings and raised reflective pavement markers as shown on TxDOT Standard Plans

Materials. Permanent pavement markings on asphalt surfaces shall consist of Type I marking materials. Permanent pavement markings on concrete surfaces shall consist of Type II marking followed by Type I marking materials.

Daylight. All permanent markings must be placed during daylight hours.

16.3.2 Interim Pavement Markings

General. If weather conditions delay the installation of permanent pavement markings, the D/B CDA Developer shall, after obtaining CTRMA approval, install interim pavement markings.

Rework. If the CTRMA determines that the interim striping is out of tolerance with acceptable standards, the D/B CDA Developer shall take corrective action. Removal of striping shall be performed using equipment that is not detrimental to the final surface, as determined by the CTRMA. The D/B CDA Developer shall pay all costs of removing and restriping the interim markings, including the costs of repairing any damage caused to the wearing course by pavement-marking removal.

Daylight. All interim markings must be placed during daylight hours.

16.4 PLAN SUBMITTALS

General. The D/B CDA Developer shall develop permanent striping plans that show sufficient information and details to guide field personnel during striping operations. Prior to the placement of any permanent striping, the striping plans shall go through the Formal Design Review process.

Record Drawings. Permanent striping plans are required in the Record Drawings.

Plan Requirements. At a minimum, the plans shall:

Show the entire Project or roadway segment to be striped in plan view on individual plan sheets at a scale acceptable to the CTRMA; typical sections representative of striping will not be accepted.

Include all existing pavement striping for a minimum of 300 feet past the limits of construction and provide adequate transition and tapers to maintain traffic at the design speed.

Fully show and identify existing striping by type, color, and width, and completely dimension it across the roadway.

Clearly identify striping to be removed.

Fully show and identify all new striping by type, color, and line width, and completely dimension it across the roadway, tying it to a construction centerline or monument line.

Locate by station or dimension lines all pavement arrows, legends, crosswalks, etc.

Show standard signs from the work zone signing plan on the traffic pavement-striping plan.

Include design drawings other than TxDOT standard drawings that show details of pavement markings, tapers, transitions, etc.

Include location of SI systems and relation of SI system component relative to pavement marking.

17.0 TRAFFIC SIGNALS

This work includes the design, installation, and construction of temporary and permanent traffic signals; the furnishing, installation, and construction of temporary and permanent signal equipment; and maintenance during construction of the traffic signal system for the roadway and interchanges, as necessary to meet the needs of the Project.

17.1 REFERENCED MANUALS, STANDARDS, AND GUIDELINES

The design, installation, construction, and maintenance of traffic signals shall be in accordance with this *Section 17* and all other pertinent provisions of the Contract Documents, and with the relevant requirements of the following listed standards and provisions, unless otherwise stipulated herein. It is the D/B CDA Developer's responsibility to obtain clarification of any unresolved ambiguity in standards before proceeding with design or construction.

Signals shall be designed, installed, and constructed in accordance with the standards of the agency having final jurisdiction and responsibility for the operations and maintenance of the traffic signal. The D/B CDA Developer shall make a determination, prior to final design, as to which agency will have jurisdiction and provide the CTRMA with documentation indicating agency responsibilities.

The D/B CDA Developer shall conform to the latest requirements of the following standards and guidelines in designing and constructing the traffic signals.

Texas Manual on Uniform Traffic Control Devices (TMUTCD)

TxDOT Traffic Signals Manual

TxDOT Sample Plan

TxDOT Signal Design Standards

TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*

National Fire Protection Agency (NFPA) National Electrical Code

17.2 PERMANENT AND TEMPORARY SIGNAL REQUIREMENTS

General. The D/B CDA Developer shall supply all traffic and pedestrian signal heads, as well as all other materials required for the complete installation and operation of temporary traffic signals, in accordance with TxDOT standards and Special Provisions, and the standards of the municipality having jurisdiction of signal location, and except as otherwise noted in this *Section 17*.

17.2.1 D/B CDA Developer Responsibilities

The D/B CDA Developer shall:

Design and Phasing. Design and implement any temporary traffic signal design or any phasing required for traffic management during construction.

CTRMA Review. Prepare a signal warrant analysis for each temporary and permanent signal system installation, including proposed temporary signal pole detection and head placements, and submit it to the CTRMA for review prior to final approval by the local agency having jurisdiction over the proposed signal installation.

Electrical Permit. Obtain an electrical permit for all signal system installations.

Implementation. Perform all work to implement the approved temporary changes, including relocating signal heads.

Inspection. Prior to implementing temporary phasing, provide a twenty-four (24)-hour notice to the local agency having jurisdiction over signal inspection.

Signal Timing and Detection. Provide signal timing plans and a form of detection to optimize all temporary signal system installations.

EVP Hardware. Provide the necessary emergency vehicle pre-emption (EVP) hardware for all permanent signal system installations such that a future EVP system can be installed.

Interconnection. Interconnect between existing and proposed new signal installation shall be performed when in the opinion of the CTRMA or local agency, improved traffic flow is achieved. Interconnection between existing and proposed new signal locations shall be limited to within one (1) mile of the proposed Project corridor. If the Duct Bank is used for the interconnection of traffic signals, separate ground boxes shall be provided for the interconnection circuits.

Salvage. Salvage all temporary signal system installations and deliver them to the local agency having jurisdiction over the signal installation location. Provide to the CTRMA written acknowledgment that all salvaged system elements have been delivered to a designated location as directed by the local agency.

Utilities. Locate and mark all underground utilities prior to and during any signal installation work in accordance with Technical Provision 8.

17.2.2 Obtaining Equipment

The controllers and controller cabinets for the permanent and temporary signal system installations will be provided by the D/B CDA Developer. All controllers and controller cabinets shall meet the specification and standards as directed by the local agency having jurisdiction over the proposed signal location.

17.3 DESIGN PLAN REQUIREMENTS

Certification. A Professional Engineer registered in the State of Texas must certify all final plan sheets.

Format. The signal and interconnect system design plans shall include appropriate signature lines, roadway design values, legends and symbols, a list of scales, and a plan index. The appropriate symbols to be used shall follow current TxDOT standards for the temporary and permanent signal systems.

Plan Items. The signal design plans must show the following items:

- Details
- Revised, permanent, and temporary intersection layouts
- Revised, permanent, and temporary wiring diagrams
- Overhead mast arm signing
- Interconnect layout
- Utility plan sheet
- Signal timing and phasing

17.4 SUBMITTALS

The signal design plan submittals shall include the following:

- Design plans and special provisions for the permanent signal system
- Interconnect system plans and special provisions
- Record Drawings
- A certificate of compliance with specifications and detailed shop drawings
- All manufacturers' warranties, guarantees, instruction sheets, and parts lists
- Inspection reports (such as clearance measures, loop tests sheet, voltage drops, and conduit fill calculations)

Shop Drawings and Product Data. The D/B CDA Developer shall have readily available for inspection by the CTRMA and local agency having jurisdiction over signal installation, all shop drawings, and product data for the following items:

- Poles and mast arms (by type and size)
- Service cabinet
- Luminaires and lamps
- Ballasts and photoelectric controls
- Paint (prime and finish)
- Fuse holder kits, fuses, and insulating boots
- Such inspection will not constitute a certification of materials

17.5 OTHER REQUIREMENTS

Electric Power Service Coordination. The D/B CDA Developer shall coordinate with the local power supplier to provide the electrical service connection. The D/B CDA Developer shall pay the electrical power costs of any temporary or permanent signal system until Final Acceptance after which time, the D/B CDA Developer shall transfer billings to the local agency having jurisdiction for the traffic signals.

Permits. The D/B CDA Developer shall obtain any necessary permits for the new signal system installations.

Operation. The D/B CDA Developer will operate the temporary signals up to the time when the permanent signals are turned on or the temporary signals are no longer needed. The operation of the new permanent signals will be conducted by the local agency having jurisdiction over the new signal location after Final Acceptance.

Maintenance. Maintenance consists of relamping indicators and luminaires, replacing knockdowns, and performing all other work necessary to keep the signal and interconnect systems operational. The D/B CDA Developer shall maintain the temporary signal systems (including the controllers and cabinets) until the permanent signal systems are turned on or the temporary signals are no longer needed, and shall maintain the new signal systems from the first day of construction until Final Acceptance.

Routine Maintenance. The D/B CDA Developer shall initiate routine maintenance tasks (for situations not affecting public safety) within twenty-four (24) hours of receiving notice from the CTRMA or local agency having jurisdiction over the signal location.

Emergency Maintenance. An emergency maintenance task is defined as a situation related to public safety, such as a dark or flashing intersection, improper pedestrian timing, twisted signal heads, exposed wires, and knockdowns. The D/B CDA Developer shall provide emergency maintenance of the signal systems twenty-four (24) hours a day, seven (7) days a week. When called or paged by a dispatcher (usually from the Texas Department of Public Safety), the D/B CDA Developer shall return the telephone call within fifteen (15) minutes and respond on-site to initiate emergency repairs within one (1) hour of the dispatcher's call. The D/B CDA Developer shall provide the CTRMA with contact names and twenty-four (24)-hour telephone numbers so that they can contact the D/B CDA Developer for emergency service at any time.

17.6 WARRANTY

See Technical Provision 3 for warranty requirements for traffic signals.

18.0 DUCT BANKS & INTELLIGENT TRANSPORTATION SYSTEMS

18.1 INTRODUCTION

The ITS & Duct Bank shall be in accordance with guidelines included in *Exhibit D – Item 21b – Austin District Guidelines for Developing Freeway Corridor Traffic Management System*. The Project Design shall include ITS components consistent with the overall location and quantity of ITS components provided in *Exhibit D – Item 21a – ITS Schematic*. The D/B CDA Developer shall be responsible for the design of all ITS layouts, foundations, conduits, electrical services, grounding circuits, and support structures as outlined further in this Technical Provision. The SI is responsible for the final ITS systems design and the purchase and installation of the ITS equipment. The D/B CDA Developer shall coordinate with the SI and accommodate the SI's ITS systems design in the Project Design. The D/B CDA Developer shall install the Duct Bank and various foundations, structures, and electrical services to support the ITS. The ITS components to be designed, furnished, installed and/or coordinated by D/B CDA Developer under this Agreement shall include:

18.2 DUCT BANK

The D/B CDA Developer shall install a concrete encased Duct Bank consisting of 12 2" conduits along the Project. The Duct Bank will be located between the travel lanes of the mainlanes and the frontage road and shall be placed on underside of mainlane bridges at crossstreet and creek crossings.

The Duct Bank system includes the following:

- conduit and fittings
- concrete encasement
- ground boxes
- cable racks
- conductors, cables, and wires

Large ground boxes (SC&C) should be spaced at approximately 500 feet (150 meters). Large ground boxes spacing in excess of 1,000 feet (300 meters) is prohibited. At intervals of approximately 500 feet (150 meters) the D/B CDA Developer shall install 4 – 2" conduits from the large ground boxes to the opposite side of the ROW and terminate the conduit in a Type B ground box near the ROW line. Place a large ground box (SC&C) at all terminations of the Duct Bank. Placement of these components in the paved area of a roadway is discouraged. Locations of large ground boxes may vary to accommodate access to other roadside devices or features.

Conduit shall be placed between the Duct Bank system and field devices. Install conduit in runs of multiples of two to assure spare conduit space. Place a Type D ground box at each end of the conduit run, at sharp angle turns and at pull points not to exceed 500 feet. Power conductors (ie: electrical service, LCS power, etc) shall be run in conduit separate from all other cables and wiring.

All electrical power conductors shall have a ground conductor placed with the power conductor of not less than #6 AWG copper.

Ground boxes shall be used to terminate all buried conduit runs. Assure ground boxes are not exceedingly full of conduit and that space is provided for a one-turn loop of each cable and wire.

Assure that the conduit and Duct Bank system complies with the National Electrical Code for conduit, ground box and Duct Bank requirements.

Assure that the conduit and Duct Bank system complies with TxDOT standards sheets for conduit, ground box and Duct Bank requirements.

Ensure Duct Bank and conduit design is consistent with United States Department of Agriculture (USDA) Rural Utilities Service (RUS) recommendations concerning underground plant design.

Power conduits shall be located on one side of the Duct Bank, with communication conduits on the other side. The Duct Bank shall be located outside the Ultimate Design mainlane pavement edge. Ground boxes shall not be placed on slopes steeper than 4:1. The D/B CDA Developer shall accommodate the embankment of the Ultimate Design.

The D/B CDA Developer shall be responsible for the design and construction of the conduit and Duct Bank systems. The D/B CDA Developer shall design and construct the conduit and Duct Bank system in accordance with the TXDOT Austin District Standards Plans, Details and Specification. The D/B CDA Developer shall coordinate the design and construction of the conduit and Duct Bank with the SI. ITS Duct Bank shall provide the physical plant for the toll systems communication backbone. A minimum of two, two inch conduit shall extend from the nearest large SC&C Duct Bank ground box to the toll facility equipment building and or enclosure as required for the toll system.

All proposed Duct Bank and conduit will be verified by a site visit to each proposed location prior to final plan completion. Verify, avoid or mitigate all conflicts with existing above and underground services.

The SI will be responsible for installing the fiber optic cabling required for the ITS and tolling systems.

18.3 CCTV CAMERAS

The D/B CDA Developer shall install foundations, conduits, grounding, camera poles, and electrical services for CCTV cameras at the locations specified by the SI. The SI will install the cameras, communications, and equipment enclosures.

All proposed CCTV Surveillance locations will be verified by a site visit to each proposed location prior to final plan completion. Communication cable shall not be in the same conduit with power conductors. Verify, avoid or mitigate all conflicts with existing above and underground services.

Illustrate horizontal and vertical viewing angle for each CCTV location design. Developer shall analyze vertical viewing angles on a roadway profile plot. CCTV poles shall be as tall as required to provide optimal viewing and shall be a minimum 40 feet tall.

Locate CCTV foundations outside the clear zone.

Safety and Access. The selected locations shall provide reasonable and safe parking and access by service personnel. A paved service bay (safety pullout) shall be provided at camera locations where access is not deemed adequate by the CTRMA.

Technical Requirements. The CCTV cameras shall be in accordance with TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* and the Austin District standard for CCTV.

18.4 DMS

The D/B CDA Developer shall install foundations, conduits, grounding, DMS support structures, and electrical services for DMS at the locations specified by the SI. The SI will install the DMS, communications, and equipment enclosures.

All proposed dynamic message sign locations will be verified by a site visit to each proposed location prior to final plan completion. Communication cable shall not be in the same conduit with power conductors. Verify, avoid or mitigate all conflicts with existing above and underground services.

The DMS shall be mounted on balanced tee structures.

The D/B CDA Developer shall comply with all TMUCD sign spacing requirements. Locate DMS structures and controller cabinets outside the clear zone or protected from errant vehicles. Exercise diligence in minimizing roadside obstacles within the clear zone including protective barriers. Locate the DMS controller cabinet approximately 100 feet in front of the visible message area of the sign to facilitate maintenance of the sign.

Final Locations. The final locations proposed by the SI shall be addressed in the Permanent Signing Concept Report. Adequate sign spacing must be available, or made available, to ensure locations that are suitable for DMS's. Adequate spacing will depend on roadway and ramp alignments, ramp spacing, available bridges, and required roadway guide sign spacing.

Mounting Designs. The D/B CDA Developer shall design any separate sign trusses. All sign designs must incorporate appropriate structure for reasonably convenient and safe access by maintenance personnel from off the roadway, including an access walkway with handrail. Support structures shall be aesthetically treated in accordance with Technical Provision 10.

Sign Visibility. DMS's shall be illuminated by light emitting diodes (LEDs), which are directional and provide only a relatively narrow cone of visibility for drivers. The exact sign locations and aiming are very important; each sign must be mounted to maximize the traveling public's ability to

view the DMS's message. The D/B CDA Developer shall indicate DMS locations and aiming in the final ITS plans.

D/B CDA Developer Responsibility. The D/B CDA Developer shall be responsible for design and construction of the DMS support systems, including but not limited to, location, DMS sign foundations, DMS overhead support structure, DMS controller foundation, electrical service, and conduits for power and communication routed to the DMS sign structure and Duct Bank systems. The D/B CDA Developer shall design and construct the DMS system in accordance with TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*. and the Austin District standard for DMS. The SI will install the DMS sign.

18.5 VEHICLE DETECTORS

The D/B CDA Developer shall install foundations, conduits, grounding, vehicle detector support structures, and electrical services for vehicle detectors at the locations specified by the SI. The SI will install the vehicle detectors, communications, and equipment enclosures..

All proposed locations will be verified by a site visit to each proposed location prior to final plan completion. Communication cable shall not be in the same conduit with power conductors. Verify, avoid or mitigate all conflicts with existing above and underground services.

Technical Requirements. The vehicle detectors shall be in accordance with TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* and the Austin District standard for vehicle detectors.

18.6 ELECTRICAL SERVICES

All proposed electrical service will be verified by a site visit to each proposed location prior to final plan completion. The D/B CDA Developer shall verify availability of required supply voltage and load current with the local utility and verify, avoid or mitigate all conflicts with existing above and underground services. Circuits between the electric service panel board and the field device cabinet shall be classed as feeder circuits. Individual electric power circuits inside the field device cabinets and enclosure shall be classed as branch circuits. Calculate all individual circuit load currents base upon information provided and National Electrical Code Requirement. Branch circuit voltage drop is usually minimal and ampacity calculations should dominate wire size and selection. Feeder Circuits voltage drop should dominate wire size and selection. Feeder Circuits voltage drop shall be less than 5 percent of the nominal line voltage. Conductor ampacity requirements shall be in accordance with NEC requirements.

The D/B CDA Developer shall provide adequate conductor length inclusive of the following:

Horizontal distance of each conduit and Duct Bank run in the conductor physical path.

25 feet for each conductor or cable in Type SC&C ground box.

6 feet for each conductor or cable in Type D ground box.

5 feet vertical rise at service pole, IA cabinet, DMS controller, CCTV, etc.

15 Feet vertical rise at Hub Enclosure

Scale factor (Nominally 5%) for non-linear distance and vertical curves in conduit and Duct Bank system

18.7 COMMUNICATION HUB ENCLOSURES

All proposed hub enclosure will be verified by a site visit to each proposed location prior to final plan completion. Communication cable shall not be in the same conduit with power conductors. Verify, avoid or mitigate all conflicts with existing above and underground services.

Up to four DMS and CCTV cameras can be located in an enclosure. It is desirable to locate these enclosures in a shaded and protected portion of the corridor along the Duct Bank to minimize communication equipment environmental impacts.

The SI will design and construct the HUB enclosures. The D/B CDA Developer shall design and construct the HUB enclosure support slab in accordance with the TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* and the Austin District standard for HUB enclosures.

18.8 COMMUNICATION WITH TMC

The D/B CDA Developer shall accommodate communication with the Austin District TMC into the Duct Bank design.

18.9 ITS DETAILED REQUIREMENTS

The CTRMA expects that the D/B CDA Developer will design and construct the roadway corridor in phases. However, the ITS must be designed as a whole, before installation of any individual field component or fiber segment. This necessitates the early completion of a complete ITS Plan, for submittal to the CTRMA for review.

ITS Plan. The ITS Plan shall include a legend of symbols, 100-scale construction plan sheets showing the location of all ITS components by station and offset, and plan details. For each ITS installation include a cross section, offsets, and mounting height.

Plan and Detail Sheets. The construction plan sheets shall show the route of the fiber optic trunk cable, the route of fiber optic pigtails, the proposed approximate locations of all ITS devices (CCTV camera assemblies, DMSs, vehicle detectors, control cabinets, cabinet wiring diagrams, sources of power, Hub enclosures, fiber conduit locations, handholes, electric service components, etc.).

Component Specifications, Inspection, and Documentation. All ITS materials and components shall conform to pertinent local codes and ordinances; the National Electrical Manufacturers Association (NEMA) standards; the Electronics Industries Association (EIA) standards; the

Telecommunications Industries Association (TIA) standards; and the TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*.

Mounting Hardware. Use stainless steel mounting hardware (bolts, nuts, washers, external hinges, etc.) on vaults, cabinets, shelters, handholes, and other outdoor ITS devices.

F&I Components. The D/B CDA Developer shall round and smooth sharp corners and edges of all ITS components that are furnished and installed.

Above Ground and Exposed Field Devices. All proposed above ground and exposed field devices will be verified by a site visit to each proposed location prior to final plan completion. Verify, avoid or mitigate all conflicts with existing above and underground services.

This section describes the requirements to ensure electrical safety in the vicinity of overhead power distribution and transmission lines. Items included in this section are, but not limited to, all above ground field devices including DMS installations, IA cabinets, CCTV installations, and hub enclosures. Exposed items are those devices, enclosures, ground boxes, cabinets, poles that are in the transmission line right-of-way clear zone and maybe exposed to significant voltages and pose an electrocution hazard to pedestrian or other personnel.

Where overhead transmission voltages exceed 34.5 KV, all items shall be located horizontally such that they are clear of the transmission line right-of-way zone recommendations contained in the USDA Rural Electrification Administration Bulletin 1724E-200, Chapter 5, Horizontal Clearance from Line Conductors to Objects and Right-of-Way Width.

Where overhead distribution voltages are less than 34.5KV all items shall be located horizontally such that they are clear of the transmission line right-of-way clear zone recommendations contained in the USDA Rural Electrification Administration Bulletin 1724E-200, Chapter 5, Horizontal Clearance from Line Conductors to Objects and Right-of-Way. Where it is not feasible to maintain horizontal clearance from the right-of-way zone, the vertical clear zone for voltages greater than 34.5 KV, with pedestrian access shall be used. Distances shall be calculated from the nearest phase conductor to the highest and/or nearest point on the field device in accordance with Chapter 4

References

1. Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals – AASHTO.
2. RUS Bulletin 1751F-643, Underground Plant Design – United States Department of Agriculture Rural Utilities Service.
3. RUS Bulletin 1751F-644, Underground Plant Construction – United States Department of Agriculture Rural Utilities Service
4. RUS Bulletin 1724E-200, Design Manual for High Voltage Transmission Lines.
5. National Electrical Safety Code.

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6. National Electric Code
 7. Code of Federal Regulations, Title 7 - "Agriculture", Parts 1751, 1753, 1755 - Federal Register.

19.0 LIGHTING

The Developer shall design and construct a complete Project lighting system in accordance with the requirements of this Technical Provision.

19.1 REFERENCED MANUALS, STANDARDS, AND GUIDELINES

The D/B CDA Developer shall conform to the latest requirements of the following standards and guidelines in designing and constructing the lighting system.

AASHTO An Information Guide for Roadway Lighting

AASHTO *A Policy on Geometric Design of Highways and Streets*

AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*

Illuminating Engineering Society of North America, *American National Standard Practice for Roadway Lighting* (ANSI/IES RP-8)

TxDOT *Traffic Operations Manual, Highway Illumination Manual* (HIM)

TxDOT *Manual on Uniform Traffic Control Devices* (MUTCD)

TxDOT *Roadway Design Manual*

TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, adopted June 1, 2004

National Fire Protection Agency 70, (NFPA 70) *National Electrical Code* (NEC)

19.2 LIGHTING REQUIREMENTS

Design Requirements. The D/B CDA Developer shall determine the required lighting types in accordance with the requirements of this Technical Provision, and apply the appropriate IENSA, TxDOT, AASHTO, and NEC design standards. Lighting fixtures shall be in accordance with Technical Provision 10 (*Landscape & Aesthetics*).

Developer shall be responsible for conducting of all necessary activities and the preparation of a Master Lighting Plan for the project as described in the TxDOT High Illumination Manual (TxDOT-HIM) except that no illumination warrant analysis will be required for the Project.

Developer shall be responsible for conducting a complete lighting study as described in the TxDOT-HIM except that no illumination warrant analysis will be required for the Project.

19.2.1 Permanent Lighting

Illumination Requirement. When required, the CTRMA's goal is to provide an illumination level of between 0.6 and 0.8 foot-candles on the roadway pavement. Illumination uniformity shall comply with the TxDOT HIM requirements.

D/B CDA Developer Responsibilities. The D/B CDA Developer shall design and install continuous roadway lighting and safety lighting on the interchanges and ramp terminals of the Project, and provide all other labor and materials required to construct and operate a new roadway lighting system. The specific work shall include:

- Developing lighting design plans for and constructing new roadway lighting, complete with concrete foundations, luminaires, lamps, conduits, wiring, power service
- Provision of intersection lighting as part of any new required signal system installations
- Furnishing and installing new continuous lighting on mainline segments of the Project and safety lighting on the interchanges and ramp terminals of the Project.

Lighting Under Structures. Underpass lighting fixtures, currently listed on the TxDOT Approved Material Producer List shall be used underneath all cross-over bridges. Mid-span mounting of conventional cobra-head fixtures to the bridge beam or deck shall not be permitted where design considerations require a mid span mounted fixture.

Spillover Light. The D/B CDA Developer shall install cut-off fixtures to eliminate spillover lighting outside the Project ROW. Light spill over levels shall be less than 1% of the average illumination level at the edge of the ROW line.

Required Equipment. The following equipment shall be used for permanent lighting, except in locations where tower lighting is required or where the overhead lighting is provided as part of the signal system:

- Light Base Design
- Lighting Unit Type
- Medium-cutoff distribution
- Nonmetallic conduit under roadways
- Service Cabinet
- Equipment Pad
- Underpass Lighting Units
- At locations where the overhead lighting is installed as part of a new signal system installation, pole and luminaire materials that are similar to and approved for the other new roadway lighting

Specific Requirements: The following are required in designing the permanent lighting:

- All in-place systems should be 240-480-volt
- Consider the locations of nearby guardrail, noise walls, retaining walls, utilities, and overhead power lines when placing light poles
- All lighting units must be breakaway or crash-protected

Power Service Costs. During the Project, the D/B CDA Developer shall pay all costs charged by the electric power companies for providing power connections. The D/B CDA Developer shall pay the monthly electrical bills and provide maintenance for special and/or temporary lighting installed under the Contract. The D/B CDA Developer shall also maintain the permanent lighting installations, both existing and new, until Final Acceptance (FA) of the Project. After Final Acceptance (FA), the D/B CDA Developer shall transfer billings for all permanent lighting to the CTRMA.

High Mast Lighting: There is existing high mast lighting at the US 183 and SH 130 interchanges. The D/B CDA Developer shall continue operating this high mast lighting for the duration of the Project.

Frontage Roads: Local municipalities may required frontage road lighting. When required by a local municipality, the D/B CDA Developer shall coordinate the system's design and construction with the municipality providing and installing the frontage road permanent overhead lighting system.

Salvage and Removals. The Developer shall salvage all lighting units and stockpile them at a location in the Project area as determined by the CTRMA. The Developer shall also remove and dispose of light standard bases as part of the Work.

19.2.2 Temporary Lighting

Developer Responsibilities. The Developer is required to:

- Maintain current levels of roadway illumination on any ramp or interchange areas for the duration of the Project
- Design temporary lighting plans, as needed
- Furnish and install temporary lighting equipment for the roadway and interchanges as necessary
- Provide all materials and equipment for temporary lighting installations
- In the clear zone, provide only lighting units that are breakaway or protected from crash potential

Salvage and Removals: The Developer shall salvage all lighting units and stockpile them at a location in the Project area as determined by the CTRMA.

19.3 LIGHTING STUDY

The D/B CDA Developer shall prepare a lighting study for the Project as described in the TxDOT HIM that includes:

- For the mainline alignment and interchange locations, considers:
 - The existing levels of illumination in the Project corridor
 - The existing amount of spillover lighting outside the ROW
 - The levels of illumination required for the Project, based on current TxDOT standards
- Shows all proposed permanent lighting locations and designs
- Conforms to any requirements set forth in the Environmental Document.

Submittal. The lighting study shall be submitted to the CTRMA as a part of the Formal Design Review. Prior to beginning any permanent lighting design work, the D/B CDA Developer shall resolve all comments on the lighting study to the satisfaction of the CTRMA. The lighting study shall include a computer model of the lighting levels which includes all calculations of lighting levels, maximum, minimum, average, and average to minimum ratio over the areas of interest, including light spill over.

19.4 LIGHTING PLANS

Submittal. The D/B CDA Developer shall submit the permanent lighting plans to the CTRMA as a part of the Intermediate Submittal (65%) Design submittal.

Plan Certification. All temporary lighting and permanent lighting final plan sheets must be signed and certified by a Registered Professional Engineer in the State of Texas.

Plan Format. The lighting plans shall include appropriate signature lines, roadway design values, legends and symbols, a list of scales, and a plan index.

Plan Items. The lighting plans, at a minimum, must show the following:

- General Notes requiring the use of TxDOT Approved lighting fixtures and lamps
- General Notes requiring the use of TxDOT Approved Lighting poles as specified, including foundation bases and anchorages
- General Notes requiring the use of TxDOT & UL Approved Service Cabinet, including photocells
- General Notes requiring the use of TxDOT & UL Approved All wire, cable, and terminations that are needed for the complete operation of the lighting system

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- Special Provision for Licensed Electrician requiring compliance with TxDOT Item 7.15.A.4 The special provision shall require a Licensed Electrician to Directly Supervise all electrical work.
 - General Notes requiring the use of TxDOT & UL Approved Conduit, handholes, and junction boxes required for the installation
 - General Notes requiring the use of TxDOT & UL Approved Streetlight grounding

Plan Contents. The lighting plans must include:

- Provisions for conduit, handholes, and junction boxes
- Detail sheets showing pole details for each type of pole used in the Project, details for mounting the service panels and photo-electric controls, and any special anchorage details
- Layout sheets showing the location of the roadway (including the clear zone) relative to the locations of light standards, cable, service panels, conduit, junction boxes, and pull boxes
- Proper labeling and identification of all of the above items, and tabulations listing the stations, locations, and types of lighting units
- Wiring diagrams to detail the wiring of the lighting circuits and to show wire sizes
- Applicable TxDOT standard details
- Final lighting photometric and footprints, including all calculations of lighting levels, maximum, minimum, average lighting levels, and average to minimum ratio over the areas of interest, including light spill over.
- Electrical circuit calculations including all: service loads for service conductors, main circuit breaker, contactor, control circuits: feeder circuit conductors, circuit breakers, conduit fill and ampacity reduction factors, ampacity and voltage drop calculations, and branch circuit calculations.
- Electrical service summary sheet as required by TxDOT for illumination plans

19.5 SUBMITTALS AND PROJECT RECORDS

Project Records. The D/B CDA Developer shall retain the following information and submit it to the CTRMA at Final Acceptance (FA):

- Lighting design plans
- Record Drawings
- Permits
- Inspection reports, including an electrical inspection by competent and qualified inspection authority reviewed by competent engineering authority.
- A certificate of compliance with specifications and detailed shop drawings

Shop Drawings and Product Data. The D/B CDA Developer shall have readily available for CTRMA inspection all shop drawings and product data for the following items:

- Poles, bases, anchor bolts, and mast arms, for each type and size including mill certifications and certification of AASHTO compliance for breakaway poles.
- Manufactures photometric performance, part number, special instructions for Luminaires and lamps.

19.6 WARRANTY

See Technical Provision 3 (*Warranties*) for warranty requirements for lighting on this Project.

20.0 PAVEMENT

20.1 GENERAL REQUIREMENTS

Engineer Requirements. The minimum pavement designs are provided by the CTRMA.

20.2 PAVEMENT TESTING

After completion of the curing period and prior to the opening of the roadway to traffic, the D/B CDA Developer shall test the pavement surface for surface smoothness and ride quality.

Testing Specification. Final pavement testing for smoothness and ride quality shall be based on the latest TxDOT specifications and standards governing the testing procedures. The D/B CDA Developer shall measure and evaluate the ride quality of all mainlane and frontage road pavements using a high-speed or lightweight inertial profiler, certified at the Texas Transportation Institute in accordance with Item 585 in the *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*.

For the mainlane and frontage road pavements, the D/B CDA Developer shall measure the IRI for each traffic lane in 0.10-mile sections. Two (2) IRIs shall be made for each lane, one (1) in each wheel track. The reported IRIs shall be (i) the average of the two (2) IRIs and (ii) the wheel track with the highest IRI. The following values represent the maximum acceptable IRI for pavements after placement and prior to opening the section to traffic.

CRCP (Mainlanes and Ramps):

Average of two wheel tracks:	60
Highest Recorded wheel track:	75

Flexible Pavements (Frontage roads and Cross streets)

Average of two wheel tracks:	60
Highest recorded wheel track:	75

IRI results above the values given above will require corrective action to repair pavement by the D/B CDA Developer and such action shall be (i) based on FHWA, AASHTO, TxDOT and/or US Army Construction Engineering Research Laboratory methods, and (ii) subject to CTRMA's review and written acceptance. Any variations to the criteria must be approved in writing by CTRMA.

Each exit ramp, entrance ramp, and bridge, including the approach slab and one-hundred fifty (150) foot portion of the roadway on both ends shall be treated as a separate section. For all exit ramps, entrance ramps, cross streets less than 2500 feet in length, and bridges, the ride quality shall be measured and corrected in accordance with TxDOT specification item 585 surface test A.

TxDOT Specifications Item 585 Pay Adjustments will not be used.

Testing Reporting. Final results of pavement testing shall be submitted to the CTRMA within three Business Days for review and acceptance.

Independent Testing. The CTRMA may test the entire Project length by an independent source. If the CTRMA determines that the Developer's certified test results are inaccurate, the Developer is responsible for reimbursing the CTRMA for all associated costs with the independent testing.

20.3 PAVEMENT TEXTURE

Carpet drag and metal tine textures shall be applied to all concrete pavement surfaces.

The texture shall be tested by the D/B CDA Developer in accordance with ASTM E 965-87, "*Test Method for Measuring Surface Macrotexure Depth Using a Sand Volumetric Technique*", to ensure the texture is adequate for skid resistance. The test location shall be determined by the agency and at a point located transversely to fall in the outside wheel path. The results of ASTM E 965-87 shall show an average texture depth of any lot, as defined below, shall have a minimum value of 1.00 mm. Any lot showing an average of less than 1.00 mm but equal to or greater than 0.80 mm will be accepted as substantial compliance but the D/B CDA Developer shall amend their operation to achieve the required 1.00 mm minimum depth. (It is not the intention of this tolerance to allow the D/B CDA Developer to continuously pave with an average texture depth of less than 1.00 mm). Any lot showing an average texture depth of less than 0.80 mm shall require diamond grinding of the pavement represented by this lot to attain the necessary texture. Any individual test showing a texture depth of less than 0.70 mm shall require diamond grinding of the pavement represented by this test to attain the necessary texture of 1.00 mm. Limits of any failing individual test shall be determined by running additional tests at thirty (30) m (100 foot) intervals before and after the failing test location. All testing of the surface texture shall be completed no later than the day following pavement placement.

A lot shall represent one (1) days paving per driving lane. Lots shall be broken down into sub-lots representing 300 m (1,000 lineal feet) of pavement. Each lot shall have a minimum of three (3) sub-lots. If production results in less than three (3) sub-lots per day, the quantities shall be included in the next day of concrete production. All adjoining driving lanes shall be tested at the same location but shall be considered individual lots.

The test locations shall be randomly chosen by the CTRMA and given to the D/B CDA Developer. The location of the test shall be determined using a random number chart (or other approved method) and multiplying the random number by the 300 m (1000 lineal foot) sub-lot size (Example: Random number (0.65) x 300 m (1,000 lineal foot) results in taking a sample from the load representing the 195 m (650 lineal feet) from the previous sub-lot extents).

20.4 PAVEMENT MATERIALS AND CONSTRUCTION REQUIREMENTS

The D/B CDA Developer shall incorporate the following requirements into the plans, quality control program and the field construction procedures.

General. Pavement for the shoulders of all roadways shall be the same section (materials and depths) as the adjacent roadway pavement.

Mainline Pavement. Only Continuous Reinforced Concrete Pavement (CRCP) pavement is acceptable for the mainline pavement except as specified at Toll Gantries.

Mainline and Ramp Toll Gantry. Pavement at the Mainline Toll Gantry shall be Jointed Concrete Pavement using Glass Fiber Reinforced Polymer Bars (JCPGFRPB) and the entrance/exit transition areas shall be Continuous Reinforced Concrete Pavement (CRCP). No steel will be allowed in the pavement section. The D/B CDA Developer shall coordinate with the System Integrator (SI) to assure Automatic Vehicle Identification (AVI) equipment operates and function properly.

Ramp Pavement. Ramp pavements shall be constructed with the same section (materials and depths) as the adjacent mainline pavement.

Frontage Road and Cross Street Pavements. Frontage Road and Cross Street Pavements shall be flexible pavement.

Toll Gantry Parking. Toll Gantry parking areas shall be Jointed Reinforced Concrete Pavement (JRCP) with a minimum concrete thickness of six (6) inches.

Joint Layout. The joint layout for all Continuous Reinforced Concrete Pavement (CRCP) and Jointed Reinforced Concrete Pavement (JRCP) shall be subject to the Formal Design Review process.

Site Preparation To prepare for construction of proposed facility, all topsoil, vegetation, roots, and any soft soils in the pavement area shall be stripped from the site and either properly disposed of or stockpiled for later use in landscaping.

Random Sample for Resilient Modulus Testing For Embankment Item 132 (TY C1), The D/B CDA Developer shall randomly select a minimum of one (1) location per 2,000 linear feet of each roadbed (east bound frontage road, east bound mainlane, west bound mainlane, and west bound frontage road) on alternating sides of the width of the road bed, where the D/B CDA Developer shall sample the subgrade materials to a depth of two (2) feet below top of finished subgrade. The D/B CDA Developer shall test the sample in accordance with AASHTO-T307. As an alternative to AASHTO-T307, falling weight deflectometer testing in accordance with ASTM D4694 may be used and the subgrade modulus back-calculated for every measurement point, with a minimum of one measurement point per station for each roadbed (east bound frontage road, east bound mainlane, west bound mainlane, and west bound frontage road). The D/B CDA Developer shall propose a back-calculation procedure for the CTRMA's approval. The results shall be compared to the requirements for the Embankment Item 132 (TY C1). If the materials fail to meet the criteria for Embankment Item 132 (TY C1), the D/B CDA Developer shall be responsible to take corrective action that is acceptable to the CTRMA.

Random Sample for Material Properties The D/B CDA Developer shall randomly select a minimum of one (1) location per 1,000 linear feet of each roadbed (east bound frontage road, east

bound mainlane, west bound mainlane, and west bound frontage road) on alternating sides of the width of the road bed and when a recognizable change in the subgrade material is encountered during grading operations where the D/B CDA Developer shall sample the subgrade materials at (1) foot intervals to a depth of five (5) feet below top of finished pavement. Samples may be taken at the borrow source with frequency equivalent to the insitu testing. Sample frequency for borrow source must be approved by the CTRMA prior to incorporation of the material into the Work. The materials shall be tested by the D/B CDA Developer to obtain gradation, Liquid Limit, Plastic Limit and Plasticity Index in accordance with Tex-104-E, Tex-105-E, and Tex-106-E. The results shall be compared to the requirements for the applicable embankment item. If the materials fail to meet the criteria for the applicable embankment item, the D/B CDA Developer shall be responsible to take corrective action that is acceptable to the CTRMA.

Sulfates The D/B CDA Developer shall develop a sulfate protocol for CTRMA's review and comment. The D/B CDA Developer shall resolve all comments to CTRMA's satisfaction prior to starting subgrade preparation. At a minimum the protocol shall include the following:

The D/B CDA Developer shall analyze subgrade material composition and perform necessary construction procedures to preclude soluble sulfate induced heave. D/B CDA Developer shall take soil samples for sulfate testing every 500' of each roadbed (east bound frontage road, east bound mainlane, west bound mainlane, and west bound frontage road) on alternating sides of the road bed taken at one (1) foot intervals to a depth of at least five (5) feet below the top of finished pavement. If material is taken from a borrow source, samples may be taken at the borrow source with frequency equivalent to the insitu testing. Testing frequency for borrow source must be approved by the CTRMA prior to incorporation of the material into the Work. If soluble sulfate content is greater than three-thousand (3000) parts per million, D/B CDA Developer shall implement a procedure to mitigate the high sulfate subgrade. Insitu materials which meet PI requirements but have high sulfates (>3,000 ppm) may be used in embankments at locations greater than 48" from top of pavement and have no available source of free lime or portland cement. D/B CDA Developer shall be solely responsible for all activities and analysis to preclude sulfate reactivity on the Project.

Proof Roll Verification. After stripping and undercutting as required by the grading plan, prior to beginning embankment operations, and over excavation as required herein, the pavement area shall be proof rolled with a heavy, loaded pneumatic-tired vehicle such as a 20 to 25 ton roller with pneumatic tires. All areas beneath the roadway shall be proof rolled to identify loose or soft soils. All proof rolling and undercutting activities shall be witnessed by the CTRMA and shall be performed during a period of dry weather. Any weak areas which yield under proof roll, or any areas with a tendency to pump, shall be mitigated. Such mitigation may include:

- Over excavation and backfilling,
- Reprocessing to remove moisture,
- Chemical modification with lime or cementitious admixtures, or
- Installation of geosynthetics
- Use of underdrains

In the event such mitigation is required, the Senior Geotechnical Engineer shall be contacted to design an appropriate mitigation procedure. The mitigation procedure shall be submitted for CTRMA's review and comment. The D/B CDA Developer shall resolve all comments to the CTRMA's satisfaction prior to implementing the mitigation procedure. For certain mitigation procedures, a proof roll and moisture-density control shall be utilized to ensure subgrade stability.

Scarification. After stripping, excavating where required, and proof rolling but prior to placing fill, the exposed soils shall be scarified and then processed to a moisture content between two percentage points above (+2%) and five percentage points above (+5%) the optimum moisture content. The subgrade soils shall be recompacted to a dry density of at least 95% of the maximum dry density based on Tex-114-E for a depth of at least eight (8) inches below the surface.

Embankment Item 132(TY C1), (TY C2), and (TY C3). Materials directly beneath the pavement section to depths specified in the applicable Pavement Section shall meet the requirements as described in this section. Existing Insitu material may be used as Embankment Item 132(TY C1), (TY C2), and (TY C3) if insitu material meet the requirements of this section and the requirements found in Exhibit D - Item 20a - Pavement Design Report. Embankment Item 132(TY C1), (TY C2), and (TY C3) shall only be placed after the underlying subgrade has been prepared and inspected. Embankment Item 132(TY C1), (TY C2), and (TY C3) shall have the following characteristics:

- Materials in accordance with Exhibit D - Item 20a - Pavement Design Report,
- Free of organic or other deleterious materials,
- Consist of silty-clayey sands (SC-SM), low plasticity sandy clays (CL), or clayey sands (SC) as defined by the Unified Soil Classification System except for recycled materials incorporated into the embankment, and
- Embankment Item 132 (TY C1) shall have a minimum resilient modulus of 8000psi.

If a fine-grained material is used for Select Fill, very close moisture content control will be required to achieve the recommended degree of compaction.

Compaction. Embankment Item 132 (TY C1) and (TY C2) shall be placed in maximum lifts of eight (8) inches of loose materials and shall be compacted within the range of two percentage points above (+2%) to five percentage points above (+5%) the optimum moisture content value and a minimum of 95% of the maximum dry density as determined by the Moisture-Density Relationship of Soils (Tex-114-E) test. If water must be added, it shall be uniformly applied and thoroughly mixed into the soil by disking or scarifying. Embankment Item 132 (TY C3) shall be placed in maximum lifts of ten (10) inches of loose materials and shall be compacted within the range of two percentage points above (+2%) to five percentage points above (+5%) the optimum moisture content value and a minimum of 95% of the maximum dry density as determined by the Moisture-Density Relationship of Soils (Tex-114-E) test. If water must be added, it shall be uniformly applied and thoroughly mixed into the soil by disking or scarifying.

Lime Stabilized Subgrades. The use of lime stabilized subgrades to mitigate yielding subgrade shall require CTRMA's prior approval. If approved, the following procedures shall be used:

The amount of lime to be incorporated shall be based on the lime stabilization limit as determined by TEX-121E with one (1%) percent additional lime by weight for soils with PI less than thirty-five (35) and two (2%) percent additional lime by weight for soils with PI equal to or greater than thirty-five (35)

In addition to gradation requirements outlined in TxDOT Item 260, the lime stabilized clay shall also have a minimum of 85 percent (85%), on a dry weight basis, of the stabilized soil passing a $\frac{3}{4}$ inch sieve at a moisture content at, or above, optimum. The lime stabilized clay soil shall have a plasticity index equal to 15 or less based on a dry method of sample preparation per ASTM D 421.

The lime-stabilized clay shall be placed in maximum six (6) inch loose lifts and compacted at a moisture content not less than optimum, nor more than four percent (4%) above the optimum as defined by ASTM D 698 (Standard Proctor). Compaction shall be at least 95 percent (95%) of the maximum dry density defined by this standard. The required moisture content and density of the compacted material shall be maintained until construction is complete.

Other stabilization methods such as lime injection, potassium chloride, etc. are not acceptable

Prime Coats. A prime coat shall be constructed with AE-P or equivalent. A minimum curing time of 10 days is required before application of Seal Coats unless otherwise authorized or directed in writing by the CTRMA.

21.0 TOLL SYSTEMS

21.1 DEVELOPER RESPONSIBILITIES

D/B CDA Developer's responsibilities, relating to the toll systems, fall into four general areas site, subgrade, at grade, and above grade. All construction materials shall be in accordance with these Technical Provisions. The D/B CDA Developer shall not use any experimental or previously unapproved materials for incorporation into the Project.

Site: Working with the CTRMA's Systems Integrator (SI), the D/B CDA Developer must design, procure, and/or construct various site infrastructure elements, including site work, driveways, and power and communication services to support the installation of the toll collection system. D/B CDA Developer shall design and construct primary electrical service and design and construct the site improvements required to support the emergency generator backup electrical service systems.

Subgrade: Working with the SI, the D/B CDA Developer shall design and construct conduits and Duct Bank systems for communication and power distribution systems. D/B CDA Developer is responsible for all electrical power service, feeder and branch circuit conductors. The SI is responsible for all communication fiber and conductor wire for service, feeder and branch circuits. Subgrade items including, but not limited to, utilities, gantry foundations and drainage systems shall be coordinated with and accommodate the SI's toll collection systems. Unless otherwise specified herein, the Work shall be governed by TxDOT standards and specifications. The D/B CDA Developer is responsible to coordinate with the SI and include the toll collection systems subgrade requirements into the Project Design. All Subgrade infrastructure design shall accommodate the Ultimate Design.

At Grade: Working alongside the SI, the D/B CDA Developer shall design and construct various at grade elements including, but not limited to, Pavement Sections, site work, driveways, power services to support the installation of the toll collection system, and all junction boxes and conduit. D/B CDA Developer shall construct, as part of the Work, all paving and roadway work, and special Pavement Sections at the toll gantry areas. D/B CDA Developer shall design and construct primary power service and the facilities required to support the emergency generator backup electrical service systems as per the SI requirements. D/B CDA Developer shall provide electrical service at a meter/service panel, located in the proposed ILP buildings at each toll collection location. D/B CDA Developer shall provide the meter/service panel as part of the Work. D/B CDA Developer is responsible for all electrical power service, feeder and branch circuit conductors, lightning protection, and technical grounding systems. Working with the SI, the D/B CDA Developer shall design and construct the concrete slab to support the HVAC climate controlled ILP buildings that house and support the physical components of the toll collection system. All at grade infrastructure design shall accommodate the Ultimate design.

Above Grade: Working with the SI, the D/B CDA Developer shall design and construct various above grade elements, including but not limited to gantry columns, gantry truss to support the installation of the toll collection system, equipment support framing on gantry truss, fencing,

guardrails, construction of the roadway, and other miscellaneous civil works. D/B CDA Developer shall design and install all signage located on the main lane and ramp toll locations. D/B CDA Developer shall design and construct gantries and toll equipment supports as per the SI requirements. All guide, warning, regulatory, and special toll signs pertaining to the Work shall be in accordance with TxDOT standards and the TMUTCD. All above grade infrastructure design shall accommodate the Ultimate design

Special Considerations: Working with the SI, the D/B CDA Developer must design and construct facilities that will accommodate the installation and operation of the electronic toll collection system. It is the responsibility of the D/B CDA Developer to fully integrate the SI's plans and schedule, provide qualified and experienced designers and be aware of various constraints and considerations within the toll collection zones.

21.2 TOLLING FACILITIES

The tolling system will not include collection of cash. The toll system shall be designed to support all electronic toll collection. Structures are required to support electronic tolling.

The Project Design of the toll system and facilities must be expandable to the Ultimate Design as set forth in Exhibit D – Item4 – Ultimate Design.

To support the toll system components and communication between the tolling points and CTRMA's back-office operations, the D/B CDA Developer shall provide:

- Conduit – At the tolling point, significant below and above grade conduit is required to support power delivery and communication between toll system components.
- Duct Bank – A Duct Bank, in accordance with Technical Provision 18, is required along the entire length of the Project. Lateral conduits are required to reach the tolling points, to support connectivity with adjacent facilities and to support various tolling components along the road.
- Mounting Brackets – Working closely with the SI, the D/B CDA Developer must design, procure and install proper mountings for the toll system equipment.

The SI shall be responsible for the installation and termination of the fiber optic cables in the Duct Bank required for the toll , fiber optic cable laterals, and all fiber and communications required at the tolling point.

21.2.1 Subgrade Infrastructure

Design and construction of all conduit and the Duct Bank shall be in accordance with:

- NESC
- NEC (NFPA 70) National Electrical Code
- TxDOT Electrical Design Standards and Details

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- SI requirements

D/B CDA Developer is responsible for all below grade electrical facility grounding circuit and lightning protection system conductors. The electrical facility grounding design shall comply with:

- NFPA 780 Standard For Installation of Lightning Protection Systems
- NEC (NFPA 70) National Electrical Code
- NESC C2 National Electrical Safety Code
- USDA RUS Bulletin 1751F802 Electrical Protection Grounding Fundamentals
- TXDOT Electrical Design Standards and Details

Design and construction of all electrical service, feeder and branch circuits shall be in accordance with:

- NEC (NFPA 70) National Electrical Code
- TXDOT Electrical Design Standards and Details
- SI requirements

Design and construction of communication services shall be in accordance with:

- USDA RUS Bulletin 1751F-640 Design of buried plant, physical considerations
- NEC (NFPA 70) National Electrical Code
- TXDOT Electrical Design Standards and Details
- SI requirements

21.2.2 At-Grade Infrastructure

Horizontal Alignment. The main lane toll approach and departure areas should be located in a straight segment of roadway enabling adequate sight distance for identification on approach. The toll collection area must be on a straight alignment. If main lane approach/departure area or toll collection area requires a curve, the minimum radius shall be 12,000 feet.

Cross Slope. Through the toll collection area the lanes shall have a 2% minimum cross slope. Adequate care should be taken to ensure the roadway drains properly with no ponding or sheet flow.

Pavement. Pavement shall be in accordance with Technical Provision 20. Concrete pavement requires reinforcement with non-steel components.

Parking Lot and Driveway. D/B CDA Developer shall be responsible for design and construct various parking lot and driveway components to support the installation of the toll collection system. Parking lot and driveway are included to support the installation maintenance access of the

toll collection system. Parking and driveways shall be designed to comply with the TxDOT Roadway Design Manual: Appendix C Driveway Design Guidelines.

Bonding and Grounding. D/B CDA Developer is responsible for all electrical facility grounding circuits and lightning protection systems and conductors. All conductors entering the toll facility shall be protected, bonded and grounded to route lightning stroke currents away from all electrical and electronic toll systems. D/B CDA Developer shall design and construct the electrical facility grounding system in accordance with:

- NFPA 780 Standard For Installation of Lightning Protection Systems
- IEEE 142 Recommended Practices for Grounding of Industrial and Commercial Power Systems
- NEC (NFPA 70) National Electrical Code
- NESC C2 National Electrical Safety Code
- USDA RUS Bulletin 1751F802 Electrical Protection Grounding Fundamentals
- TXDOT Electrical Design Standards and Details

Electrical Service. D/B CDA Developer is responsible for all electrical power services, feeder and branch circuit component, apparatus, and conductors. D/B CDA Developer shall design and construct primary service systems as per the SI requirements. D/B CDA Developer shall design and construct all electrical service, feeder and branch circuits as per:

- NEC (NFPA 70) National Electrical Code
- NFPA 37 Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines
- IEEE C62.41 IEEE Guide on the Surge Environment in Low-Voltage (1,000 V and Less) AC Power Circuits
- USDA RUS Bulletin 1751E-320 Emergency generating and charging equipment
- TxDOT Electrical Design Standards and Details
- NFPA 99 for generators in healthcare facilities
- Emergency Power Supply System: NFPA 110, Level 2
- SI requirements

Communications. D/B CDA Developer shall design and construct conduits and the Duct Bank for communication services to support the installation of the toll collection system in accordance with:

- USDA RUS Bulletin 1751F-640
- IEEE 62.64 Standard Specifications for Surge Protectors Used in Low-Voltage Data, Communications, and Signaling

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- NEC (NFPA 70) National Electrical Code
 - TXDOT Electrical Design Standards and Details
 - SI requirements

21.2.3 Above Grade Structures for Electronic Toll Collection (ETC) System

The D/B CDA Developer shall design and construct the required structures to support the installation and operation of the toll system. The D/B CDA Developer's toll system structures shall be in accordance with Exhibit D – Item 9a – Toll Facility Guidelines and Exhibit D – Item 16a – US 183 Interchange Project Design Plans.

ILP Building. Small environmentally controlled building and enclosures are required to house certain toll system components. Working with the SI, the D/B CDA Developer shall establish the precise locations for building and/or enclosure. The building and /or enclosure shall comply with:

- Uniform Building Code
- Uniform Mechanical Code
- Uniform Plumbing Code
- NEC
- ACI 318-05

Building shall include the following accessory systems as a minimum requirement:

Design Loads: Roof Load 65PSF, Floor Live Load 250, Thermal Load -10C to 70C, Wind Load: 110MPH, Exposure C Zone 4

Electrical Design: Main Disconnect NEMA KS 1, Type HD. (200A or 125A as required), Automatic Transfer Switch (200A or 125A as required) NEMA ICS 1, NFPA 70, UL 1008, and NFPA 99 NFPA 110 Level II. Surge and Lighting Protection, 2-Panel Boards (120/240V 1P (200A or 125A as required), NEMA PB 1 24 Circuit), Generator Connector. Panel Board 1 shall be supplied by the Automatic Transfer Switch. Panel Board 1 shall supply the UPS. Uninterruptible Power Supply's (UPS) shall supply Panel Board 2. Lighting: 2-2 Tube Florescent Lighting Fixtures, 4-Utility Receptacles, Block outs for cable entry. NEMA ICS 1, NFPA 70, UL 1008, and NFPA 99 NFPA 110.

HVAC two-ton wall mounted package unit with alternator. HVAC shall comply with ASHRAE 15. Performance shall comply with ASHRAE 90.1.

Door: 36-inch, Steel Door, with lock and door closer, ANSI/SDI-100, Recommended Specifications for Standard Steel Doors and Frames. (SDI A250.8.2003) ANSI/SDI-100, Grade III, extra-heavy-duty, minimum 16 gage (.0598 inch) galvanized sheet steel, 1-3/4 inches thick.

Door Frame: (SDI A250.8.2003) Welded type, 16 gage (.0598 inch) galvanized sheet steel, mitered or coped corners.

Other items as required for electronic tolling system, environmental, electrical, mechanical, operations and security.

Remote equipment enclosures may be required for some sites. SI requirements for equipment enclosure and site conditions will determine the need for equipment enclosures. Remote equipment enclosures shall provide the SI mechanical, electrical, environmental and security requirements.

Gantries. Both mainline and ramp locations require gantries to mount antennas, cameras, vehicle separation equipment and other toll system components. Working with the SI, the D/B CDA Developer will establish the precise locations for each of the gantry structures. Foundation, Tower and Truss design shall be in accordance with TxDOT OSBS requirements.

Signage. D/B CDA Developer shall be responsible for the design and construction of the toll facility signage.

21.3 TOLL SYSTEMS

The SI will have the responsibility for the design, procurement, and installation of the toll system and required communications.

21.4 FACILITIES SECURITY SYSTEM

The SI will have the responsibility for the design, procurement, and installation of the security system for the toll system.

21.5 D/B CDA DEVELOPER'S COORDINATION RESPONSIBILITIES

The D/B CDA Developer shall coordinate the design and construction with the SI to accommodate the design and systems operating software, and ensure the Project schedule incorporates the time required to design, construct, procure, integrate and test all equipment to be used by the CTRMA during tolling operations and maintenance of the Project.

D/B CDA Developer's facilities responsibilities include, but are not limited to, the following:

Coordinating closely with the SI to assure the D/B CDA Developers design corresponds with the SI's requirements

Provide a monthly schedule clearly incorporating the SI's work and testing.

Prior to Substantial Completion, the CTRMA will perform a controlled test of all system elements as they relate to the tolling operations. D/B CDA Developer shall be responsible for incorporating a period of time, for controlled testing of all system elements related to toll operations.

Final tolling operations for the Project, after Final Acceptance, will solely be the responsibility of the CTRMA or a third party vendor assigned to the CTRMA. The D/B CDA Developer responsibility

for coordination of tolling operations will cease upon completion of a successful test and CTRMA acceptance of all system components.

22.0 MAINTENANCE OF TRAFFIC

22.1 GENERAL REQUIREMENTS

General. The D/B CDA Developer shall be responsible for the safe and orderly movement of traffic through and around the Project, from issuance of NTP to FCA. Traffic must be given clear direction at all times as to which pathway to follow. The D/B CDA Developer shall manage all maintenance of traffic (MOT) work in strict compliance with the requirements of this Technical Provision 22, TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, TxDOT *Manual of Traffic Control Devices (MUTCD)* and all other Contract Documents.

22.1.1 MOT Functions

The D/B CDA Developer shall, at a minimum, be responsible for the following MOT functions:

- Develop a detailed MOT Plan, obtain CTRMA, TxDOT, and/or Local Government Approval, then implement and (as necessary) revise the plan
- Furnish, install, inspect, maintain, and remove all traffic control devices required to provide safe movement of vehicular traffic, including the immediate repair or replacement of all traffic control devices that are damaged, moved, or destroyed, and of all barricade weights that are damaged, destroyed, or otherwise fail to stabilize the barricades, through the Project from NTP to FCA
- Cover or remove all traffic control devices that may be inconsistent with traffic patterns during all traffic switches
- Communicate with and update the CTRMA, the municipalities within the Project corridor, contractors on adjacent/nearby construction projects, and other pertinent agencies regarding MOT
- Provide law enforcement for all lane closures and intersection closures
- Attend all MOT meetings
- Supervise all MOT personnel

22.1.2 MOT Plan Implementation

The D/B CDA Developer shall implement all elements of the RFC MOT Plan and MOT Details, including the construction and maintenance of all traffic control signing and traffic control devices. The D/B CDA Developer may be required to alter traffic control signing, markings, devices, traffic signals, or other improvements outside the limits of the Project. Any such alteration shall be subject to review and approval by the governing agency having jurisdiction over the area in consideration. When such changes are no longer required to maintain traffic, the D/B CDA Developer shall return all such altered items to their original state within five (5) Business Days, unless directed otherwise by the CTRMA.

22.2 REFERENCED STANDARDS AND GUIDELINES

The geometric design of all portions of the MOT Plan (including, but not limited to, detours and temporary roadway construction) shall conform to the latest edition of the following standards and guidelines:

- AASHTO A Policy on Geometric Design of Highways and Streets
- AASHTO *Roadside Design Guide*
- TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, adopted June 1, 2004
- TxDOT *Manual on Uniform Traffic Control Devices (MUTCD)*
- National Cooperative Highway Research Project (NCHRP) Report 350, *Guidelines for Work Zone Traffic Control Devices* (including crash testing of work zone Category II devices that went into effect on October 1, 2000)

22.2.1 Development of MOT Plan

General. The D/B CDA Developer shall develop a detailed MOT Plan that plans for all construction stages and phases, and identifies opportunities to expedite construction throughout the course of the Project. The MOT Plan shall be prepared by the Traffic Control Engineer ([Section 22.4.1](#)). The MOT Plan shall:

- Advise, warn, and alert the traveling public of construction in advance of the Project termini and on all roads, streets, and public trails approaching or crossing the Project
- Control and guide traffic through the Project
- Provide for the safe passage of pedestrian traffic
- Protect, warn, and exclude traffic and to protect workers at all work sites
- Provide for necessary flag persons
- Provide Safety precautions to protect workers and the traveling public
- Be subject to the Formal Design Review Process

Responsive Revisions. As construction progresses, and if unforeseen conditions are encountered, the D/B CDA Developer shall respond to the current Project circumstances by proposing revisions of its MOT Plan that ensure both maintaining the Project schedule and meeting the traffic management objectives of the Project.

General Contents. The D/B CDA Developer's MOT Plan shall provide:

- Complete MOT plans and details for all stages of construction
- Complete traffic control details

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- The appropriate design and details when temporary construction of any of the following is required to maintain traffic: traffic signals, detour roadways, bridges, retaining structures, drainage, and other miscellaneous construction

Revisions. The D/B CDA Developer shall submit proposed MOT plan revisions to the CTRMA for review and comment at least ten (10) Business Days prior to implementation of the revised MOT Plan. The D/B CDA Developer shall resolve all comments on the revised MOT plan to the satisfaction of the CTRMA prior to implementation of the revised MOT Plan.

Requested Modifications. The D/B CDA Developer shall modify the proposed MOT plan if requested by and as deemed necessary by the CTRMA.

Traffic Control Stages. At least five (5) Business Days before switching traffic from one (1) control stage to another, the D/B CDA Developer shall submit a switching plan to the CTRMA for review and comment. The D/B CDA Developer shall resolve all comments on switching plan to the satisfaction of the CTRMA prior to the traffic switch. The plan shall consist of the procedures and signing necessary to complete the switch, and the number and duties of traffic personnel assigned to perform the switch.

22.2.2 Items in MOT Plan

The MOT Plan shall include (but not be limited to) the following items:

- Scaled roadway plans showing all existing traffic control devices that need to be retained, relocated, or removed, and all temporary traffic control devices that need to be installed, retained, relocated, or removed
- Scaled drawings showing dimensions and material used for signs that are not detailed in the TxDOT *MUTCD*, with background color and the legend
- The size and color of all standard traffic control devices
- Scaled roadway plans showing the location of each sign so it can be easily read in relation to the roadway and other traffic control devices. The use of numbers or letters as a reference for sign placement will not be permitted.
- Uniform standards, as required by the TxDOT *MUTCD*
- Type and location of all temporary pavement markings to be installed, removed, or renewed for each stage, and placement location of the permanent pavement markings
- Methods to be used for covering signs in order to be consistent with traffic operations.
- Permanent pavement markings that meet all the requirements and standards called for in the TxDOT *MUTCD*
- Route and details of pedestrian temporary walkways

22.2.3 Requirements of MOT Plan

22.2.3.1 Lane Closures

Seven (7) Days prior to any lane closing, install information signs on the affected road giving the dates of closure and reopening. Install one (1) flashing arrow board for each lane closure. Temporary lane closures exceeding one thousand (1,000) feet shall have a minimum of Type III barricade placed in the closed lane for every one thousand (1,000) feet of extension. The D/B CDA Developer shall at a minimum comply with the following requirements:

- All temporary lane closures used at night or during hours of darkness shall have plastic drum-like channelizing devices (or Type I barricades with steady burn lights) in the lane closure taper and also in any shifts in traffic alignment
- Temporary lane closures will not be permitted during inclement weather, nor any other time when, in the opinion of the CTRMA, the lane closure is undesirable to traffic flow
- Qualified flaggers shall be provided in sufficient numbers and locations as necessary for control and protection of vehicular and pedestrian traffic. Qualified flaggers shall conform to the requirements set forth in the TxDOT *MUTCD*
- Provide a law enforcement officer with official law enforcement vehicle for each lane closed and an additional officer for each intersection closed. This requirement is cumulative and if *multiple* lanes and/or intersections are closed, the D/B CDA Developer will be required to provide multiple officers.

22.2.3.2 Signage

Sign Relocation. All permanent signs and delineators affected by construction shall be relocated outside the work area until no longer needed.

Identification Signage. Street identification signage shall be maintained at all times. Where the only existing signs are small city or county signs located at the intersection, they shall be maintained by temporary installations as required by the CTRMA. This is, among other reasons, necessary to maintain the integrity of the 911 emergency system.

Covering. All signs installed on roads open to traffic that are not consistent with traffic operations shall be covered as directed by the CTRMA. If a cover is to remain in place for more than thirty (30) Days, it shall be a plate of solid opaque material covering the entire legend or all of that part of the legend that is inappropriate.

The D/B CDA Developer shall furnish, install, and maintain all temporary traffic control signs (e.g. “Road Work Ahead”) at the proper location as required in the TxDOT *MUTCD*.

Post-Mounting. When temporary signs will remain in the same location for more than ten (10) consecutive Business Days, the signs must be post-mounted. (*This requirement does not apply to portable signs that are set up and taken down at the beginning and end of each work shift.*) The signs

must be mounted on posts driven into the ground at the proper height and lateral offset, as detailed in the TxDOT MUTCD.

22.2.3.3 Permits

The D/B CDA Developer must obtain all permits required by local government agencies prior to implementation of any MOT details.

22.2.3.4 Pavement Markings During Construction

In work zones, additional emphasis must be placed on the application of pavement markings, which are an important method of guiding traffic. Traffic must be given a clear direction as to which pathway to follow. The D/B CDA Developer shall at a minimum comply with the following requirements:

- Refer to Table 22.5 of this Technical Provision for the upkeep of traffic control devices.
- Temporary Raised Pavement Markings (TRPM) will be permitted where they are required to supplement a line. The D/B CDA Developer must inspect and replace all damaged or missing TRPMs on a biweekly basis.
- The TRPMs shall be removed by a method that does not materially damage the surface or texture of the pavement
- Non-removable temporary lane markings will be permitted on pavements that will not be incorporated into the final pavement surface. Removable pavement markings are required at all other locations. Only upon the approval of the CTRMA, paint may be permitted if the manufacturer's specifications for removable pavement marking cannot be met because of temperature conditions. If paint is used as an interim pavement marking until the fixed epoxy pavement markings are placed, an application of water-based traffic marking paint may be used
- All applicable existing pavement markings shall be renewed, as determined by the CTRMA, and maintained throughout the duration of the Project
- All conflicting pavement markings shall be properly removed, including lane lines in transition areas and improper colors
- Lane lines and pavement edges through transition and alignment change areas shall be marked with solid lines and shall be supplemented with TRPMs. Transition and alignment change areas include lane closure tapers, sharp curves, and shifts onto temporary roadways

22.2.3.5 Fence

Where present, the D/B CDA Developer shall keep the right-of-way fence closed up, except during work hours, by means of in-place fence, newly constructed fence, temporary fence (at the D/B CDA Developer's expense), or a combination thereof.

22.2.3.6 Lighting

The D/B CDA Developer shall maintain street lighting by means of in-place lights, newly constructed lights, or a combination thereof, except as otherwise authorized by the CTRMA. Areas not currently illuminated may require temporary illumination due to traffic control detouring.

22.3 MOT TASK FORCE

Membership. The D/B CDA Developer shall establish an MOT Task Force, comprising representatives of the D/B CDA Developer, the CTRMA, TxDOT, municipal and county representatives having jurisdiction over the Project, law enforcement agencies, emergency response providers, all affected stakeholders, and other agencies whose operations affect or are affected by the Project MOT Plan no later than two (2) weeks after NTP. Membership in the MOT Task Force shall be approved by the CTRMA.

Meetings. The D/B CDA Developer shall schedule and attend weekly MOT Task Force meetings throughout the duration of the Project. The purpose of these meetings is to:

- Further refine and develop the MOT Plan
- Review the D/B CDA Developer's MOT details
- Disseminate Project MOT information to Task Force meeting attendees
- Obtain MOT input from Task Force meeting attendees
- Make MOT recommendations to the CTRMA
- Coordinate and hold stakeholder meetings to present the TCP staging plans

Minutes and Follow-up. The D/B CDA Developer shall take meeting minutes and distribute them to the CTRMA within five (5) Business Days of the meeting. Meeting follow-up items shall be the responsibility of the D/B CDA Developer.

22.4 MOT STAFF

22.4.1 Traffic Control Engineer

General. The D/B CDA Developer shall provide at least one (1) Traffic Control Engineer (TCE) to implement and manage the MOT on the Project. The Traffic Control Engineer shall be retained by the D/B CDA Developer for the duration of the Project, and shall be available at the request of the D/B CDA Developer's Construction Manager, Design Manager and the CTRMA when necessary to change the staging and/or traffic control plans. Such changes include, but are not limited to, those affecting sequencing of traffic, scheduling of work activities, access roads to work areas, trucks hauling to and from the Project, additional signing, and any unforeseen situations. The CTRMA shall have the authority to approve the nominated TCE.

Qualifications. The TCE shall have the following minimum qualifications:

- A registered Professional Engineer’s license in the State of Texas, or such registration within six (6) months of initial receipt of the RFDP
- Ten (10) years of experience in traffic and highway engineering with a contractor, a consultant, or a city, county, or state transportation agency,
- Working knowledge of the TxDOT *MUTCD*, work zone safety, geometric design of highways and streets, traffic signal timing, traffic studies, and traffic simulation models
- The ability to demonstrate familiarity with MOT plans for similar projects
- Understanding of the local jurisdictional and public concerns about the MOT Plan, including the off-site effects of the Project

TCE Duties. The responsibility of the TCE shall be to manage the approved MOT Plan and its implementation. Other duties assigned to the TCE must have prior written approval from the CTRMA. The TCE’s primary duties shall be to:

- Personally manage and supervise services at the Project site, and be the D/B CDA Developer’s contact for all MOT coordination with the CTRMA.
- Diligently work to develop an MOT Plan that meets both the D/B CDA Developer’s construction schedule and the CTRMA’s requirements for public mobility during construction.
- Manage the ongoing revisions to the MOT Plan, including coordination between the D/B CDA Developer’s construction schedule and the MOT Plan.
- Attend all MOT Task Force meetings.
- Develop all MOT Details; seal the MOT Plan and MOT Details in accordance with the plan submittal requirements.
- Supervise the implementation, maintenance, and inspection of all MOT Details, either directly or through a certified and approved Traffic Control Supervisor (TCS).
- Coordinate all MOT Details affecting City streets, pedestrian ways, and County roads to the proper jurisdiction before implementing traffic control on City streets and/or County roads.

22.4.2 Traffic Control Supervisor

General. All MOT implementation, inspection, and maintenance shall be performed under the direction of the TCE and shall be directly supervised by a Traffic Control Supervisor (TCS). The D/B CDA Developer may assign one (1) or more TCSs to work under the direction of the TCE and to act for the TCE in emergencies. At least one (1) TCS shall be on duty at all times.

Qualifications. Unless otherwise approved by the CTRMA, each TCS shall have the following minimum qualifications:

- Certification as a Traffic Control Supervisor by the American Traffic Safety Services Association (ATSSA)

-
- Successful completion (including passing a written examination) of a work zone traffic control course approved by the CTRMA
 - Five (5) years of work zone experience in a supervisory capacity within the past ten (10) years

Before beginning work requiring traffic control management, the D/B CDA Developer shall submit to the CTRMA a copy of the ATSSA Traffic Control Supervisor certificate (wallet-size card), or a certification from another agency or firm as approved by the CTRMA.

TCS Duties. The primary duties of a TCS are to:

- Under the direction of the TCE, correct all deficiencies in the MOT implementation
- Coordinate all traffic control operations of Subcontractors, utility companies, and suppliers to ensure that their operations are included in the approved MOT Plan and that they do not result in conflicting traffic control situations
- Ensure that all traffic control operations of Subcontractors and suppliers meet all Project MOT requirements
- Maintain a Project MOT Diary documenting MOT activities
- Notify the CTRMA of any fatal traffic accident on the Project within two (2) hours, while for any other non fatal traffic accident, the reporting timeframe should be within twenty-four (24) hours; record the accident and the time and date of notification in the MOT Diary and submit it to the CTRMA
- Have readily available at all times the most current copies of the following:
 - The approved MOT Plan
 - All approved MOT Details
 - TxDOT *MUTCD*
- Obtain the vehicle accident report from the local law enforcement agency for each accident reported within the Project and provide a copy to the CTRMA
- Obtain general data for accidents on- and off-site for comparison with Project accidents

22.4.2.1 Availability and Notification

An approved TCS shall be available twenty-four (24) hours per day throughout the duration of the Project, including times of Project suspension. If the D/B CDA Developer assigns more than one (1) TCS to manage MOT, the D/B CDA Developer shall submit a weekly schedule identifying who will manage MOT each day to the CTRMA or his designee.

At times when a TCS is not on-site, a TCS shall be on call and able to respond to the site within thirty (30) minutes. The D/B CDA Developer shall provide the CTRMA a telephone number to contact the on-call TCS.

22.4.2.2 MOT Diary

The TCS shall maintain a Project MOT Diary in a format acceptable to the CTRMA. The TCS shall keep the Project MOT Diary current on a daily basis, and shall sign each daily entry. Photographs may be used to supplement the written text.

The Project MOT Diary shall at all times be available for inspection by the CTRMA. A copy of the Project MOT Diary shall be submitted to the CTRMA on a regular basis, as directed by the CTRMA. The Project MOT Diary shall become the property of the CTRMA at the completion of the Project. Failure to submit the Project MOT Diary shall result in the withholding of final payment.

22.4.3 Traffic Monitors

Not used for this Project.

22.5 TRAFFIC CONTROL DEVICES

Definition. Traffic control devices include (but are not limited to) barricades, barricade weights, warning signs, trailers, flashers, cones, drums, and pavement markings, as well as flaggers and off-duty police officers as required to properly maintain traffic.

Requested Modifications. The D/B CDA Developer must modify its traffic control devices if requested by and as deemed necessary by the CTRMA.

Inspection of Devices. The TCE or designated TCS shall inspect traffic control devices, as a minimum, according to Table 22.5 (*Traffic Control Device Inspection Schedule*). These inspection frequencies include periods of work suspension. At least two (2) Business Days before placement, all traffic control devices must be available on the Project for inspection by the CTRMA.

TABLE 22.5
Traffic Control Device Inspection Schedule

<i>Traffic Control Device</i>	<i>Inspection Frequency</i>
Drums, Cones, and Portable Delineators	Twice Daily (at start and end of work day)
Signage on Portable Supports	Daily
Barricades	Daily
Temporary Traffic Signals	Daily
Detours an/or Alternate Routes	Daily
Dynamic Message Signs	Daily
Temporary Roadway Lighting	Nightly
Pavement Markings	Weekly
Fixed Signage	Weekly

Repair and Replacement. The TCE or designated TCS shall provide for the immediate repair or replacement of any traffic control device not functioning as required to ensure the safety of traveling public and construction personnel. The D/B CDA Developer must respond within one (1) hour to any call from the CTRMA or its designated representative concerning any request for replacing, improving or correcting improper or non-functioning traffic control devices. All required repairs must be substantially completed within twenty-four (24) hours of notification.

Traffic Control Staff. The D/B CDA Developer must furnish the names, addresses, and telephone numbers of at least three (3) local persons responsible for the placement and maintenance of traffic control devices. These persons must work for either the TCE or TCS. These persons must reside in the immediate proximity of the Project for the duration of the Project, and be on call twenty-four (24) hours per day, seven (7) days per week, during the times that any traffic control devices furnished and/or installed by the D/B CDA Developer are in-place. The required information must be submitted to the CTRMA at the preconstruction conference.

Temporary Devices. The D/B CDA Developer must conform to all requirements of Report 350 of the National Cooperative Highway Research Project (NCHRP) for temporary traffic control devices.

22.6 MOT COMPLIANCE, SUSPENSION, AND LIQUIDATED DAMAGES

Failure To Comply. The CTRMA may suspend all or part of the D/B CDA Developer's operations for failure to comply with the RFC MOT Plan and MOT Details, or failure to correct unsafe traffic conditions within twenty-four (24)-hours after such notification is given to the D/B CDA Developer. If the D/B CDA Developer does not take appropriate action to bring the deficient MOT into compliance or to correct the unsafe traffic conditions, the CTRMA may proceed with the corrective action using its own forces, and deduct such costs from the moneys owed the D/B CDA Developer. If the D/B CDA Developer's operations are suspended, the normal assessment of Contract Document

time will not cease for the period required for correction of these unsafe conditions and MOT deficiencies.

Suspension and Liquidated Damages. The D/B CDA Developer shall not be relieved of the responsibility to provide MOT safety to the traveling public while the Project is under full or partial suspension. If such suspension is due to the D/B CDA Developer's failure to comply with this Technical Provision 22 or while the Contract Documents is under liquidated damages, the D/B CDA Developer shall continue to manage and implement the MOT Plan.

22.7 MOT DESIGN CRITERIA

22.7.1 Roadway Guidelines

Restricted Hours. No temporary lane closures which restrict or interfere with traffic will be allowed on holiday weekends. In addition, no work that restricts or interferes with traffic shall be allowed from 12 noon on the day preceding and 9 a.m. on the day following a legal holiday. The CTRMA shall have the right to lengthen, shorten, or otherwise modify these restrictions as actual traffic conditions may warrant.

Restricted Shoulder Use. The use of the US 290 shoulders for temporary handling of traffic shall not be allowed. If the D/B CDA Developer wishes to use segments of the US 290 shoulders for temporary traffic lanes, the D/B CDA Developer shall obtain approval from the CTRMA and TxDOT, and shall be responsible for any additional pavement structure required to obtain such approval.

Requirements To Open. As each road is completed, the D/B CDA Developer shall install the final signing and pavement markings required to safely open that road to traffic. This work shall be completed on or before the date of opening as approved by the CTRMA.

22.7.1.1 Design Parameters

Design Vehicle. The MOT Plan shall accommodate the WB-50 design vehicle.

Design Speed. The facility designated roadway classification, design speed and other roadway segment design criteria can be found in *Exhibit B – Scope of Work* for this Project.

Number of Lanes. Two(2) lanes shall be provided in each direction of travel at all times, except as specified below in *Section 22.7.1.2 – Allowable Closures.*

Lane Widths. Each lane shall be eleven (11) feet wide.

22.7.1.2 Allowable Closures

Highways. Lane closures, detours or temporary re-routing of traffic on US 183 will require the written approval prior to construction by the CTRMA and TxDOT.

Cross Roads. County roads may be closed during construction operations. More than one (1) County Road crossing may be closed for construction operations, with CTRMA approval, as long as detours for these closures do not overlap or impact one another.

Lane Closures. The D/B CDA Developer shall provide written notification to the CTRMA at least five (5) Business Days prior to implementing lane closures. The D/B CDA Developer will not be permitted to implement lane closures prior to acceptance of the MOT plans and details by the CTRMA.

Changeable Message Sign (CMS). Each lane closure shall have a CMS as part of the traffic control layout. Any CMS lane closure operations shall be installed with the lane closure information ten (10) Business Days prior to the actual closing.

Work Zone Speed Limit. A work zone speed limit will be required at all times when lane closures are in use and workers are present. Work zone speed limits must be provided in accordance with prevailing TxDOT guidelines and standards.

Sequential Arrow Displays. Each vehicle used to place, maintain, or remove components of a traffic control system on multilane highways shall be equipped with a sequential arrow display that shall be in operation when the vehicle is being used for placing, maintaining, or removing the components. Vehicles equipped with sequential arrow displays not involved in placing, maintaining, or removing the components when operated within a stationary type lane closure shall display only the caution mode. The sign shall be controllable by the operator of the vehicle while the vehicle is in motion. Sequential arrow displays used in moving lane closures shall be truck-mounted.

Moving Lane Closures. Truck-mounted crash cushions shall be used for moving lane closures.

Full Roadway Closure. The D/B CDA Developer may close main lanes for short-term durations only upon acceptance of the MOT plans and details by the CTRMA. The CTRMA and/or entities with roadway jurisdiction will have the right to lengthen, shorten, or otherwise modify the foregoing restrictions as actual traffic conditions may warrant.

Local Approvals. The D/B CDA Developer shall communicate any roadway closure and staging analysis with the road authorities having jurisdiction over the Project corridor. When roadway movements are diverted or detoured along existing roads, the D/B CDA Developer shall be responsible for any and all user cost which may be assessed for the use of these existing roads. This may include traffic operational analysis, temporary traffic control devices, and road user costs, all payable to the local road authority. The D/B CDA Developer shall be responsible for obtaining the necessary approvals from the CTRMA, the local, county, and state agencies having jurisdiction over routes used. In addition, the D/B CDA Developer will be responsible for notifying 911 agencies and emergency responders including but not limited to: police, volunteer fire departments, and regional ambulance of any proposed lane or roadway closures (see [Section 22.7.6](#)).

Contingency Plan. The D/B CDA Developer shall provide the CTRMA a contingency plan for reopening closed ramps to public traffic in the event of an equipment breakdown, shortage of materials, lack of production of materials, or other production failure, or when it becomes necessary to reopen the ramp closure for use by public traffic. The D/B CDA Developer shall, when requested by the CTRMA, submit the contingency plan within one (1) Working Day.

22.7.2 Maintenance of Right-of-Way

Throughout all phases of construction, including suspension of the Project, and until Final Acceptance of the Project, the D/B CDA Developer shall keep the Right-of-Way and work site clean and free from rubbish and debris.

22.7.3 Detour Usage

Detour Routes. The D/B CDA Developer shall use State routes for detour routes, wherever applicable. If State routes are unavailable, the D/B CDA Developer shall use City and County roads, provided that the D/B CDA Developer has obtained all necessary permits and concurrence from the owner of the facility. The D/B CDA Developer shall document the existing condition of the proposed detour route, by video and/or photos, prior to diverting traffic onto the detour. All detours must be approved by the CTRMA prior to implementation.

Motorist Guidance. The D/B CDA Developer shall provide motorists with proper signage and guidance on diverting around the construction, detouring around specific construction sites, and traveling through the construction areas. If substantial detours are used, regional/local traffic signs shall be provided and/or maintained to ensure that the traveling public can stay on a marked route through the construction area.

22.7.4 Temporary Guardrail, CTB and Attenuators

Vehicle Protection. The D/B CDA Developer shall be responsible for using temporary guardrail, concrete traffic barriers (CTBs) and/or attenuators to protect the traveling public. Low profile barriers shall only be permitted at locations with posted speed of 45 mph or less. Protection shall be provided for the following:

- Hitting fixed objects within the clear zone
- Driving off drop-offs areas that exceed the recommendation established by TxDOT for longitudinal joints and edge drop-off guidelines
- Driving off slopes steeper than 3:1

Specifications. All guardrail installations must conform to TxDOT standards.

22.7.5 Pedestrian Access & Recreational Trails

The D/B CDA Developer shall maintain pedestrian access on all designated pedestrian crossings and/or recreational trails where applicable. Closure of pedestrian crossings and trails (if any) will require prior approval of the CTRMA.

22.7.6 Emergency Response

Prevention, Mitigation, and Notice. If an emergency occurs that affects the safety or protection of persons, the Project, or the property at the site or adjacent thereto, the D/B CDA Developer shall immediately act to prevent and mitigate the threatened damage, injury, or loss. If the D/B CDA Developer believes that such an emergency or damage has caused any significant change in the Project or variation from the Contract Documents, the D/B CDA Developer shall give the CTRMA written notice within five (5) Business Days of such occurrence.

Response Assistance. The D/B CDA Developer shall cooperate with law enforcement and emergency response agencies in their response to emergencies in and around the Project, including those on the roadways and detours open to public traffic and those within the construction work area. The D/B CDA Developer shall help implement these agencies' preapproved response plan for accidents, fires, hazardous substance spills, or other emergency events along the Project. In an emergency, the D/B CDA Developer shall make personnel and equipment available at the direction of law enforcement or emergency response personnel in response to reasonable requests to protect public safety. The D/B CDA Developer shall cooperate with law enforcement personnel in all investigations of traffic accidents and incidents associated with the Project.

Access Routes. The D/B CDA Developer shall work with emergency service providers to address concerns about emergency access to the highway corridor. The D/B CDA Developer shall identify for law enforcement and emergency response agencies specific routes for emergency access as agreed to by the law enforcement and emergency response agencies, the CTRMA, and the D/B CDA Developer. These may include, but are not limited to, openings in barriers, median openings, gates, emergency use of D/B CDA Developer's haul routes, and temporary graded roadways. The D/B CDA Developer shall identify the locations of these emergency access points and routes in the MOT Plan.

Weekly Access Notifications. Except during periods of authorized work suspensions, the D/B CDA Developer shall notify the CTRMA, the Texas Department of Public Safety, local and county agencies of the access routes to and through the construction corridor. The D/B CDA Developer shall notify emergency service providers of routes that can be used by vehicles responding to emergencies on the construction site and on the traffic lanes open to the public, as well as any major changes to the maintenance of traffic plans and construction sequencing. These written notifications shall be provided to the contact persons identified in the Public Information Program (PIP) no later than noon on Friday of each week, for the following week's activities.

Weekly Meetings. The D/B CDA Developer shall meet weekly with representatives of the Texas Department of Public Safety, the local Police and Fire Departments, all Emergency Management

Services (EMS), County Sheriff's Office and the CTRMA to coordinate emergency service response and access.

Contact Notifications. Within twenty (20) Business Days of NTP, the D/B CDA Developer shall notify the CTRMA of the names, pager numbers, and all telephone numbers (business, residential, and cellular) of its personnel to contact in case of an emergency along the Project. This contact list shall be updated if there is any change in the contact information.

Emergency Response Plan. An Emergency Response Plan, complete with affected agencies (along with contact persons and telephone numbers) shall be included in the PIP.

22.7.7 Worker Procedures and Precautions

Excavations and Other Hazards. Open unprotected excavation adjacent to the existing pavement will not be permitted. The D/B CDA Developer must provide protective devices necessary to protect traffic from excavations, drop-offs, falling objects, splatter, or other hazards that may exist during construction.

Vehicle Access. Access to or from any public road or at-grade crossing of any public road will not be permitted for the D/B CDA Developer's equipment, material deliveries, the hauling of excavated materials of any kind, or employees' private vehicles, except at in-place public road intersections or at locations approved by the CTRMA.

Parking. The D/B CDA Developer, its Subcontractors, and its suppliers must not park vehicles or construction equipment so as to obstruct any traffic control device. Workers may park their private vehicles within the Project limits only at designated sites, indicated by the D/B CDA Developer and approved by the CTRMA.

Storage. The D/B CDA Developer must not store materials or equipment within 30 feet of through traffic unless approved by the CTRMA. If such storage is so approved, the D/B CDA Developer must provide barricades or barriers, as directed by the CTRMA, to warn drivers and protect traffic.

Nighttime Work. When work activities are performed by the D/B CDA Developer between the official hours of sunset and sunrise, all appropriate practices for night work shall apply.

Light and Noise. The D/B CDA Developer must provide sufficient numbers of light plants to adequately illuminate the work area during nighttime work activities. Noise and lighting for nighttime operations shall consider adjacent commercial and residential properties with a plan established to minimize impacts adjacent to the ROW.

Vehicle Warning Lights. All mobile equipment of the D/B CDA Developer, Subcontractors, and suppliers operating on the Project shall be equipped with operable warning lights that meet the appropriate requirements of the specifications of the Society of Automotive Engineers (SAE). The SAE requirements are:

360 degree rotating lights:

SAE Specification J845

Central Texas Regional Mobility Authority
290 East Toll Project
Addendum #2

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Flashing lights:	SAE Specification J595
Flashing strobe lights:	SAE Specification J1318

22.8 HAULING OPERATIONS

General. All hauling operations of the D/B CDA Developer (whether to bring materials to the Project site or to haul material off-site) shall comply with the MOT Plan and this Technical Provision 22.

CTRMA Approval. The D/B CDA Developer may not start hauling operations until it has received written approval from the CTRMA. At least twenty (20) Business Days before the start of any construction operation that would require a haul road, the D/B CDA Developer shall submit to the CTRMA a written request for its approval. The request shall include:

Identification of the requested haul roads

The materials anticipated to be hauled (including quantities)

The duration of the need for the haul road

Written approval to use the road from the appropriate authorities

A map identifying the limits of the hauling operations

Failure on the part of the D/B CDA Developer to fulfill these approval requirements will delay the commencement of the hauling operations, and will require the D/B CDA Developer to pay the costs of restoring the road to the satisfaction of the local road authority.

Road Restoration. Upon completion of the hauling operation, the D/B CDA Developer shall restore each designated haul road to a condition that is at least as good as the condition before the hauling operations. Within four (4) weeks of completion of the use of each haul road, the D/B CDA Developer shall submit to the CTRMA a letter from the local road authority documenting the authority's agreement that the haul road has been satisfactorily restored.

Costs. The D/B CDA Developer shall be responsible for all costs associated with designation, usage, and restoration of haul roads.

23.0 CONSTRUCTION

23.1 GENERAL REQUIREMENTS

D/B CDA Developer Responsibility. The D/B CDA Developer shall be responsible for the quality of the construction work effort on the Project. Project quality will be enhanced through the daily efforts of all the workers involved with the construction effort, supported by the CQMP described in Section 2.

23.2 CONSTRUCTION SPECIFICATIONS

Unless otherwise specified in the Contract Documents, Project construction specifications shall be governed by the TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*. Generally, the construction shall comply with the policies, standards, guidelines, and technical provisions established by the CTRMA, TxDOT, and AASHTO.

23.2.1 Specific Specification Modifications

The following section provides specific modifications to the TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* to be used on this Project.

23.2.1.1 Mobilization

See Section 13.3.13 of the Agreement.

23.2.1.2 Clearing and Grubbing

The D/B CDA Developer shall remove only those trees necessary to be removed to construct this Project. All other trees shall be marked and protected from damage during construction. The D/B CDA Developer's scope does not include the removal of all trees required for the construction of the Ultimate Design.

The D/B CDA Developer shall take special care to preserve existing trees and shrubs wherever possible. This may include careful grading operations, slight adjustments of slopes, and placing protective fence at tree drip lines.

23.2.1.3 Building Removal

See Technical Provision 7.

23.2.1.4 Pavement Removal

All pavement removals, that are not incorporated into the work, shall be disposed of by the D/B CDA Developer outside the Final ROW in accordance with the TxDOT specifications.

23.2.1.5 Excavation and Embankment

General. The D/B CDA Developer shall use disks, plows, graders or other equipment to blend and mix suitable grading soils to produce uniformity in soil texture, moisture content and density. Rollers shall be used to compact the embankment materials in totality (area, layers, etc.). The type of rollers(s) used for compaction shall be sufficient to meet the density requirements, as specified. The use of truck, carryall, scrapers, tractors, tractor wagons, or other haulage equipment shall not be considered in lieu of the specified compaction equipment. Construction traffic from such hauling equipment shall be distributed uniformly over the entire embankment to the maximum extent possible.

Excess Materials. Excess soils and rock not used on the Project shall become the property of the D/B CDA Developer and shall be disposed of outside of the final Project ROW unless approved in writing by the CTRMA. No disposal shall occur in those areas defined below as "environmentally sensitive" unless the D/B CDA Developer can document that the material can be used to benefit an "environmentally sensitive" area.

All necessary permits for the disposal operations shall be obtained by the D/B CDA Developer and approval from the appropriate state and federal agencies shall be included in the D/B CDA Developer's Disposal Plan.

Disposal Plan. Prior to the disposal of any excess grading materials, concrete rubble, bituminous materials, or any other materials requiring disposal, the D/B CDA Developer shall prepare a Disposal Plan for review by the CTRMA. The Disposal Plan shall reflect the following points:

That legal permission from the property owner has been obtained

That all required local and county disposal permits have been obtained

That the State of Texas has reviewed and granted permits as necessary for solid waste disposal

That the limits of the disposal area will be staked by the D/B CDA Developer so as to accommodate the site review and aid the D/B CDA Developer in limiting disposal operations so that encroachments do not inadvertently occur

The D/B CDA Developer is required to present the Disposal Plan in detail prior to any construction activities.

23.2.2 Materials on Site

The D/B CDA Developer may use materials such as stone, gravel, sand, or other materials found in construction excavations within the Project corridor if such material meets the requirements of the Contract Documents, the Governmental Approvals and applicable Law. In order to re-use these existing materials, the D/B CDA Developer shall hire an independent lab, approved by the CTRMA in writing, to perform independent material tests to ensure that the material is in compliance with the foregoing specifications and suitable for the intended use. The D/B CDA Developer shall submit

the testing results to the CTRMA for review and approval prior to materials being incorporated into the Project.

Material that is excavated and does not meet specifications for the Project shall be removed as excess material from the Final ROW and disposed of offsite by the D/B CDA Developer.

23.2.3 Foundation Test Loads

The D/B CDA Developer will be responsible to furnish the jacking equipment, suitable jacking beams, and displacement indicators for performing test loading on piles or drilled shafts when needed on the Project.

23.2.4 Construction Surveys

General. The CTRMA has established primary control points within the Project corridor. The D/B CDA Developer shall establish and maintain a thorough and redundant survey control network for the construction of the Project.

23.2.5 Scheduling and CTRMA Notice

The D/B CDA Developer shall give the CTRMA at least fourteen (14) Day written notice for construction-related activities occurring more than five (5) miles from the Project corridor. In each case, the D/B CDA Developer shall describe the specific locations at which the construction activities shall occur, as well as a general description of the activities to take place.

Failure to provide the CTRMA with adequate notice as specified above may result in the CTRMA failure to schedule resources thereby causing the CTRMA to withhold a portion of the D/B CDA Developer's progress payments.

23.2.6 Good-House Keeping during Construction

23.2.6.1 Protection of Surface Waters and Flood Plains

General. The D/B CDA Developer shall keep construction material away from drainage structures, creeks and flood plain areas. The D/B CDA Developer shall not allow lumber, blocking, chips, loose piles, rubbish or contaminants of whatever nature to be deposited in the above mentioned waterways.

Cost and Schedule . The D/B CDA Developer's removal and disposal of such items found in the Project waterways shall be at no additional cost to the CTRMA. The D/B CDA Developer shall not be entitled to a time extension in connection therewith.

23.2.6.2 Protection and Restoration of Property and Landscape

General. Final ROW and/or access control fencing required to protect private property and livestock shall be installed in accordance with the terms of the Contract Documents.

Property Markers. Public and private property shall be preserved at all times. Land monuments and property markers shall not be moved, disturbed or damaged until the D/B CDA Developer's Registered Professional Land Surveyor (RPLS) or Licensed State Land Surveyor (LSLS) has witnessed or referenced their location.

Cost and Schedule. The D/B CDA Developer shall restore any damaged or injured property to a condition similar or equal to that existing before the damage or injury occurred. The repair, restoration, rebuilding, or making good such damage or injury shall be at no additional cost to the CTRMA and the D/B CDA Developer shall not be entitled to a time extension in connection therewith.

23.3 CONSTRUCTION DOCUMENTATION

General. The D/B CDA Developer shall maintain, in a secure place at the construction field office, one (1) record copy of all drawings, specifications, addenda, amendments, change orders, material test reports, inspectors reports, RFI's, Nonconformance Reports, written interpretations and clarifications, in good order and annotated to show changes made during construction. These documents, together with all approved samples and approved shop drawings shall be available at all times to the CTRMA.

Quality Documentation. Quality records documenting all operations, inspections, activities and tests performed, including those activities performed by Subcontractors shall be maintained in accordance with Technical Provision 2.

23.4 LIMITATIONS OF CONSTRUCTION OPERATIONS

General. Construction operations shall be conducted in a manner and sequence that assures the least interference with traffic, with due regard to the location of detours and provisions for handling traffic and for maintaining access to properties. The CTRMA may require a section of the Project to be finished before starting construction on additional sections if the opening of a section is essential to public convenience.

Notification. Fourteen (14) days written notice shall be given to the CTRMA before night construction activities are started and will only be allowed if adequate lighting is provided for performing satisfactory inspection and construction operations. The D/B CDA Developer shall be responsible for coordinating all nighttime activities with the affected municipalities.

Failure to provide the CTRMA with adequate notice as specified above may result in the CTRMA withholding a portion of the D/B CDA Developer's progress payments.

23.5 PROJECT SEGMENTS

The Project may be divided into discrete segments for the purposes of having the D/B CDA Developer progress the construction work effort in phases.

The exact termination points of the segment limits shall be determined by the D/B CDA Developer and submitted to the CTRMA for concurrence. Each segment shall provide a functional segment of roadway to facilitate safe traffic movements with intersecting roads and streets including construction of access roads, frontage roads, ramps, and interchanges. Ancillary items of the Project including, but not limited to, earthwork, drainage facilities, and utility adjustments shall extend past segment limits as required to allow completion of each segment to the agreed-upon limits while providing full functionality for these ancillary items. Traffic control devices at ends of segments that do not connect to previously completed segments shall be in accordance with applicable TxDOT TMUTCD standards.

23.5.1 Design Requirements

General. The requirements contained in the *Technical Provisions* shall apply to each segment of the Project to the extent that plan sets for each segment shall be prepared and submitted as a unit after issuance of the NTP. The D/B CDA Developer shall take appropriate steps to ensure that the design and construction interface between the segments is properly coordinated, approved and abides by the D/B CDA Developer's Quality Management Plans (QMPs) as defined in *Technical Provision 2*.

Sub-Segments. The D/B CDA Developer may subdivide each segment into sub-segments for the purposes of completing the design. The D/B CDA Developer, with the CTRMA's prior approval, may make submittals for these sub-segments and shall take appropriate steps to ensure that the design and construction interface between the sub-segments is properly coordinated, approved and abides by the D/B CDA Developer's Quality Management Plans (QMPs) as defined in *Technical Provision 2*.

23.5.2 Environmental Requirements

The requirements contained in *Technical Provision 9* shall apply to each segment of the Project. In the event that environmental mitigation sites are to be established for mitigating impacts to multiple segments, the D/B CDA Developer's Environmental Compliance Manager shall be responsible for ensuring that the schedule for establishing these mitigation sites are in accordance with D/B CDA Developer's Quality Management Plans (QMPs) as defined in *Section 2* and all applicable Environmental Approvals.

23.5.3 Utilities

The requirements contained in *Technical Provision 8* shall apply to each segment of the Project to the extent that utility adjustment plan sets for each segment are being prepared. The D/B CDA Developer shall take appropriate steps to ensure that the design and construction interface between the segments is properly coordinated, approved and abides by the D/B CDA Developer's Quality Management Plans as defined in *Section 2*.

23.5.4 Right of Way

The requirements contained in Technical Provision 7 shall apply to each segment of the Project as deemed appropriate by the D/B CDA Developer, in consultation with the CTRMA, for the purposes of enhancing coordination with affected property owners.

23.5.5 Project Schedule and Schedule of Values

The requirements contained in Technical Provision 5 shall apply to each segment of the Project to the extent that each segment shall be clearly indicated on the Project Schedule and the cost allocation by segment is provided in the Schedule of Values.

24.0 MAINTENANCE

D/B CDA Developer Responsibility. The D/B CDA Developer shall be responsible for all maintenance activities within the Project limits for all facilities within the Final ROW effective from the D/B CDA Developer's implementation of traffic control operations through Final Acceptance and during any suspension of the Project. The D/B CDA Developer shall furnish all labor, materials, equipment, and necessary services (such as highway safety controls) in connection with the general maintenance during construction. The D/B CDA Developer's responsibilities shall include repair required due to third party damage.

Standards of Work. All work done under this section by the D/B CDA Developer shall be performed in conformance with the TxDOT standards in effect for the Project. The D/B CDA Developer shall perform the maintenance work of the Project in a safe, reasonable, and prudent manner and shall employ good business practices and appropriate management techniques.

CTRMA Responsibility and Rights. The CTRMA reserves the right to perform such routine maintenance work as it deems necessary with its own forces, and/or to enter into special contracts with contractors other than the D/B CDA Developer. The CTRMA will oversee the D/B CDA Developer's maintenance program as part of its QAP and will issue non compliance reports if the maintenance efforts do not meet the requirements of Contract Documents including PDA requirements. The CTRMA will provide written confirmation to the D/B CDA Developer if/when certain sections of the Project are released back to TxDOT for maintenance.

TxDOT will provide ice control for the facility during all phases of the Development Work. **Claims for Damage from Maintenance.** Any damage claims as a result of the D/B CDA Developer's maintenance program, or lack thereof, will be forwarded to the D/B CDA Developer for payment and processing.

The D/B CDA Developer's maintenance shall include, but not be limited to, the elements in Sections 24.1 through 24.5.

24.1 GENERAL MAINTENANCE REQUIREMENTS

Pavement and Shoulders. For the duration of the Project, the D/B CDA Developer shall perform all repair and maintenance work for all roadway pavement surfaces and shoulder surfaces (both existing and new) that are affected by D/B CDA Developer's operations. This work shall include roadway surface patching and/or replacement, shoulder patching and/or replacement, and minimizing drop-offs throughout the Project. All provisions of this Section shall apply unless the maintenance work is deemed to be an emergency.

Signs and Guardrail. The D/B CDA Developer shall repair downed or damaged signs and guardrail immediately but no less than twenty-four (24) hours from time of damage.

Damage from Operations. The D/B CDA Developer shall perform maintenance to mitigate any damage caused by its operations; for example, clean out sediment that has accumulated in drainage structures as a result of the D/B CDA Developer's grading operations.

Inspection. The D/B CDA Developer shall develop and (as needed) implement an inspection program and inspection frequency that will maintain a properly functioning facility.

Emergencies. The D/B CDA Developer shall provide any maintenance activities deemed necessary in response to emergency situations. See also Technical Provision 22 for detailed requirements.

Mowing and Litter Control. The D/B CDA Developer shall mow and clean litter from the right-of-way three (3) times a year, as directed by the CTRMA, starting at NTP.

24.2 HOUSEKEEPING

General. Throughout all phases of construction, including Project suspension, and until Final Acceptance, the D/B CDA Developer shall keep the Final ROW and the site clean and free from rubbish and debris. Other materials on the site, such as forms, containers, construction materials, etc., will be kept neat and organized. The D/B CDA Developer shall keep all work areas and Final ROW clear of potential pollution causing materials or provide appropriate controls during temporary accumulation, including, but not limited to: concrete washout boxes or lined berms, hazardous materials storage and petroleum storage area containment systems, and prevention of excessive accumulation of flammable debris or construction wastes.

Dust Control. The D/B CDA Developer shall abate dust nuisance by cleaning, sweeping, and sprinkling with water or other means as necessary to be determined by the RE.

Mud Control. The use of water resulting in mud on streets and paved areas will not be permitted as a substitute for sweeping or other methods. As construction is completed on a daily basis, paved surfaces adjoining the Project shall be broom cleaned and kept clean of debris. The device to broom clean the street surface must use water to clean the road and have a vacuum bag to collect the mud off the street.

Haul Routes. The D/B CDA Developer shall prevent spillage on haul routes. The D/B CDA Developer shall remove any such spillage immediately and the area shall be cleaned.

Sweeping. If conditions warrant, the D/B CDA Developer shall furnish and operate a self-loading motor sweeper with spray nozzles and a vacuum bag to keep paved areas acceptably clean wherever construction (including restoration) is incomplete.

Air Quality. The D/B CDA Developer shall not discharge smoke, dust, or any other air contaminants into the atmosphere in such quantity as will violate applicable Law or Governmental Approvals or will be a nuisance to adjoining property.

24.3 DRAINAGE FACILITIES

The D/B CDA Developer shall keep construction material away from all drainage structures, flood control channels, rivers, and any other waterways. The D/B CDA Developer shall not allow lumber, blocking, chips, loose piles, rubbish, and any flotsam, jetsam, or contaminants of whatever nature to be deposited in these waterways. Should any such items be found floating near the site, they shall be immediately removed by the D/B CDA Developer at its own expense.

24.4 PROPERTY AND LANDSCAPE

Markers and Monuments. No land monument or property marker may be moved, disturbed, or damaged until the D/B CDA Developer's registered land surveyor has witnessed or referenced its location.

Property Restoration. Public and private property and landscape shall be protected and preserved at all times. The D/B CDA Developer is responsible for damage or injury to public or private property resulting from any act, omission, neglect, or misconduct in the method of executing the Project, defective work or materials, or nonperformance of the Contract Documents. The D/B CDA Developer shall restore any damaged or injured property or landscape to a condition similar or equal to that existing before the damage or injury occurred.

Cost. The repairing, restoring, rebuilding, or making good such damage or injury shall be at no additional cost to the CTRMA.

24.5 LIMITATIONS OF OPERATIONS

Traffic Flow. Maintenance operations shall be conducted in a manner and sequence that ensures the least interference with traffic with due regard to the location of detours and provisions for handling traffic. If the opening of a particular section of the Project is essential to public convenience, the CTRMA may require that section to be finished before starting work on other sections. The requirements of *Technical Provision 22* apply to any D/B CDA Developer maintenance activities.

Night Work. The D/B CDA Developer shall obtain any necessary permits and give written notice to the CTRMA at least seven (7) Business Days before starting any night-time maintenance activities. Night activities will be allowed only if adequate lighting is provided for satisfactorily performing inspection and construction operations.

25.0 SAFETY PLAN

The D/B CDA Developer shall prepare and implement a Safety Plan for the Project that fosters attitudes that are conducive to providing and maintaining a safe and healthful workplace environment.

25.1 GENERAL REQUIREMENTS

Contents. The safety plan shall be prepared in accordance with the requirements of the U.S. Occupational Safety and Health Administration (*OSHA*) and contain, as a minimum the following requirements:

The D/B CDA Developer shall employ a full-time, on-the-job safety representative who has a minimum of five (5) years of heavy construction experience and has received a minimum of two (2) years of qualified construction safety training

All Subcontractors shall adhere to the D/B CDA Developer's Safety Plan. If a Subcontractor fails to adhere to the Safety provisions, the D/B CDA Developer shall shut down the noncompliant Subcontractor until it is in compliance. If the problem or similar problems persist, the D/B CDA Developer shall remove the Subcontractor from the Project

All person performing construction work, as well as any nonproduction personnel, shall be supplied with and are required to wear the proper personal protective equipment for the job task they are performing. Minimum required safety equipment will consist of hardhat, safety vest, and steel toe boots.

All individuals performing construction work and any other persons who work on the site shall have the proper training for the job task they are performing (confined space, fall protection, power tools, traffic control, equipment operation, etc.)

The D/B CDA Developer shall be responsible for coordination and compliance of the Safety Plan with the Toll System Integrator

Weekly Meetings. The D/B CDA Developer and its Subcontractors performing construction work shall, at a minimum, conduct weekly toolbox safety meetings with all field employees.

Competent Person. The D/B CDA Developer and its Subcontractors shall ensure that a qualified competent person is provided at work locations where required by OSHA.

Jobsite Postings. The D/B CDA Developer and its Subcontractors shall ensure that all applicable forms (confined space permit, work permit, lockout/tagout, critical lift checklist, excavation permit, etc.) are posted at work locations where required by the U.S. Occupational Safety and Health Administration (OSHA).

26.0 SUSTAINABILITY

The D/B CDA Developer must comply with the requirements in this *Section* 26 to receive Green Credits for the Mandatory Sustainable Initiatives and the Optional Sustainable Initiatives.

26.1 MANDATORY SUSTAINABLE INITIATIVES

The D/B CDA Developer is required to complete the following Mandatory Sustainable Initiatives. Green Credits will be awarded pending CTRMA approval of the completion of the requirements for each Mandatory Sustainable Initiative. Green Credits may be withheld if the CTRMA determines, in its sole discretion, that the D/B CDA Developer has not completed the requirements of the Mandatory Sustainable Initiative.

26.1.1 M-1: Noise Mitigation Planⁱ

The D/B CDA Developer shall establish, implement, and maintain a formal Noise Mitigation Plan. The D/B CDA Developer shall submit the plan to the CTRMA for review and comment no less than sixty (60 Days prior to commencement of construction activities. The D/B CDA Developer shall resolve all comments to the satisfaction of the CTRMA prior to acceptance. Two Green Credits shall be awarded upon CTRMA acceptance of the plan.

26.1.1.1 Credit Requirements

The NMP must address, at a minimum, the following elements:

1. Responsible party for noise mitigation activities, contact information, their responsibilities and their qualifications. Include information for NMP preparer whether the plan is completed by the D/B CDA Developer or by an outside party.
2. Project location and distance to closest receptor of noise. Include a description of the surrounding zoning and parcel information (i.e., commercial, residential, hospitals, schools, parks, sensitive habitat).
3. A list of proposed construction activities (e.g. demolition, excavation, paving, bridge foundations, finishing).
4. Dates and working hours of proposed construction activities.
5. A list of noise-mitigating devices used during each construction activity listed in #3, including personal safety equipment requirements for all site employees.
6. Noise permit numbers, agency or local authority policies associated with construction work, as applicable.

7. Description of noise monitoring standards, methods, and acceptable levels.
8. Description of correction procedures for non-compliant noise levels.
9. Signature of responsible party.

The NMP should cover all construction activities, including subcontractor work activities. The D/B CDA Developer acknowledges that the CTRMA may not accept certain exemptions accepted by other state or local agencies that require NMPs.

26.1.1.2 Documentation

The D/B CDA Developer shall submit a copy of the Noise Mitigation Plan

26.1.2 M-2: Dust/Emission and Odor Control Planⁱⁱ

The D/B CDA Developer shall establish, implement, and maintain a formal Dust/Emission and Odor Control Plan. The D/B CDA Developer shall submit the plan to the CTRMA for review and comment no less than sixty (60) Days prior to commencement of construction activities. The D/B CDA Developer shall resolve all comments to the satisfaction of the CTRMA prior to acceptance of the plan. Two Green Credits shall be awarded upon CTRMA acceptance of the plan.

26.1.2.1 Credit Requirements

No other requirements.

26.1.2.2 Documentation

The D/B CDA Developer shall submit the following documents:

- A copy of the Dust/Emission and Odor Control Plan.
- A copy of any applicable permits, or agency or local authority policies on this subject (a live hyperlink to any large policy documents is sufficient).

26.1.3 M-3: Waste Management Planⁱ

The D/B CDA Developer shall establish, implement, and maintain a formal Construction and Demolition Waste Management Plan (CWMP). The D/B CDA Developer shall submit the CWMP to the CTRMA for review and comment no less than sixty (60) Days prior to commencement of construction activities. The D/B CDA Developer shall resolve all comments to the satisfaction of the CTRMA prior to acceptance of the plan. Two Green Credits shall be awarded upon CTRMA acceptance of the plan.

26.1.3.1 Credit Requirements

The CWMP must include at a minimum, the following elements:

- Type of construction waste
- Expected (or actual) tonnage
- Costs and fees for landfills, recovery facilities, and hauling
- Contact information of responsible party for hauling
- Destination of waste (e.g. recycling facility, landfill, contractor's backyard)
- Contact information of responsible party for disposal site

“Construction and demolition waste” constitutes any material that must be hauled off-site for disposal or reprocessing, or, if disposed (stockpiled) within the Final ROW is not intended for use as structural material (e.g. pavements, embankments, shoulders, base materials, and fill). Materials that leave the Site for reprocessing (recycling) activities are considered construction and demolition waste because they are not used in their pre-construction form at the Site.

Construction and demolition waste for the Project may include (but is not limited to) any of the following:

- Paving process waste (e.g. asphalt, concrete)
- Milling waste, concrete slough and grindings, cobble
- Waste steel rebar and metal guardrails, pipes, luminaires and signs
- Waste plastic pipes and packaging
- Excavated soil cuttings and boulders
- Sediment removed from temporary construction settling ponds
- Land clearing debris or excess topsoil
- Hazardous materials, including liquids
- Wood and paper products (e.g. packaging materials, cardboard and pallets)

The CWMP need only apply to wastes generated during the construction phase of the Project.

26.1.3.2 Documentation

The D/B CDA Developer shall submit the Construction and Demolition Waste Management Plan to the CTRMA for approval.

26.1.4 M-4: Site Recycling Planⁱ

The D/B CDA Developer shall establish, implement, and maintain a formal Site Recycling Plan. The D/B CDA Developer shall submit the Site Recycling Plan to the CTRMA no less than sixty (60) Days

prior to commencement of construction activities. The D/B CDA Developer shall resolve all comments to the satisfaction of the CTRMA prior to acceptance of the plan. Two Green Credits shall be awarded upon CTRMA acceptance of the plan.

26.1.4.1 Credit Requirements

The Site Recycling Plan must clearly describe the plan for implementing, communicating, monitoring and maintaining appropriate recycling and diversion practices on site. The following topics must be specifically addressed.

1. Expected types, quantities, processing or disposal facilities, locations of receptacles and proper handling for recyclable (or reusable) roadway materials generated from roadway construction processes such as (but not limited to):
 - Paving process waste (e.g. hot mix asphalt, concrete)
 - Milling waste, concrete slough and grindings, cobble
 - Excess steel rebar and other metal products or scraps
 - Excess plastic pipes and packaging
 - Excavated soil cuttings and boulders
 - Land clearing debris and topsoil
 - Wood and paper products (e.g. packaging materials, cardboard and pallets)
2. Expected types, quantities, processing or disposal facilities, locations of receptacles and proper handling for recyclable (or reusable) materials generated from mobile office (e.g. job trailer, site office) activities and personal worker (household) waste such as (but not limited to):
 - Paper, copier paper, paper products
 - Plastic
 - Aluminum and various household metals
 - Glass
 - Household trash or compostables
3. Communication expectations for jobsite housekeeping practices for the D/B CDA Developer regarding:
 - Litter control
 - Expected types of site- and worker-generated recyclables.
 - Collection practices for site- and worker-generated recyclables.
 - Locations of recycling receptacles.
 - Training requirements for all site employees and means of corrective action.

26.1.4.2 Documentation

The D/B CDA Developer shall submit the Site Recycling Plan to the CTRMA for approval.

26.1.5 M-5: Water Quality Maintenance/Enhancement Plan

The D/B CDA Developer shall establish, implement, and maintain a formal Stormwater Quality Maintenance/Enhancement Plan (SQMEP). The D/B CDA Developer shall submit the plan to the CTRMA for review and comment no less than sixty (60) Days prior to commencement of construction activities. The D/B CDA Developer shall resolve all comments to the satisfaction of the CTRMA prior to acceptance of the plan. The SQMEP shall identify methods and technologies for minimizing impacts to the quality of stormwater discharge from the Final ROW during and after construction activities. Two Green Credits shall be awarded upon CTRMA acceptance of the SQMEP and subsequent SW3P plans incorporating the recommendations of the SQMEP.

26.1.5.1 Credit Requirements

No other requirements.

26.1.5.2 Documentation

The D/B CDA Developer shall submit the following documents:

- A copy of the Water Quality Maintenance/Enhancement Plan.
- SW3P plans delineating permanent BMPs identified in the SQMEP.
- Literature and/or specifications for permanent BMPs to be installed.

26.2 OPTIONAL SUSTAINABLE INITIATIVES

The Developer may complete any of the following Optional Sustainable Initiatives. Green Credits will be awarded pending CTRMA approval of the completion of the requirements for each Optional Sustainable Initiative. Green Credits may be withheld if the CTRMA determines, in its sole discretion, that the D/B CDA Developer has not completed the requirements of the respective Optional Sustainable Initiative.

26.2.1 O-1: LED Lighting

Completion of this initiative requires the D/B CDA Developer to install cobra-head lighting utilizing LED technology.

26.2.1.1 Credit Requirements

The D/B CDA Developer shall be awarded five Green Credits for installing LED technology for all 250W and 400W luminaires.

26.2.1.2 Documentation

The D/B CDA Developer shall submit the luminaire specification to the CTRMA for approval.

26.2.2 O-2: Fiber Roll

Completion of this initiative requires that fiber roll be utilized for erosion control. Fiber roll is a tubular shaped erosion and sedimentation control device filled with natural core filling and wrapped with a containment mesh.

26.2.2.1 Credit Requirements

One Green Credit shall be awarded for use of fiber roll to replace at least 95% of the temporary sediment control fence needed for the project.

Use of fiber roll must meet the requirements set forth by the EPA (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=121).

The EPA lists several ways to apply the use of fiber roll including:

- Along the toe, top, face, and at-grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow
- At the end of a downward slope where it transitions to a steeper slope
- Along the perimeter of a project
- As check dams in unlined ditches
- Downslope of exposed soil areas
- Around temporary stockpiles

26.2.2.2 Documentation

In addition to including fiber roll in the SW3P plans, the D/B CDA Developer shall submit a report/spreadsheet that describes each qualified instance in which fiber roll was used for erosion control. The report should include justification for the use of the fiber roll based on EPA listed applicability, design considerations, limitations, maintenance considerations, effectiveness, and cost considerations.

26.2.3 O-3: Biodegradable Silt Fence

Completion of this initiative requires that the D/B CDA Developer use biodegradable silt fence.

26.2.3.1 Credit Requirements

One Green Credit shall be awarded if 95% or more of all silt fence is biodegradable.

26.2.3.2 Documentation

The D/B CDA Developer shall delineate between biodegradable and non-biodegradable silt fence on the SW3P plans and shall submit a report/spreadsheet showing:

- each instance in which silt fence was used,
- the length of silt fence used,
- the type of silt fence used (regular or biodegradable),
- and the total percentage by length of biodegradable silt fence used for the project

The D/B CDA Developer shall submit a copy of the manufacturer's documentation for the selected biodegradable silt fence. CTRMA approval of the product must be obtained before utilizing any biodegradable silt fence on the Project.

26.2.4 O-4: Solar Powered Flashing Beacons

Completion of this initiative requires that the D/B CDA Developer use solar powered flashing beacons.

26.2.4.1 Credit Requirements

One Green Credit shall be awarded if 95% or more of all flashing beacons are powered by solar energy.

26.2.4.2 Documentation

The D/B CDA Developer is required to submit a report/spreadsheet showing:

- each flashing beacon specified for the project that needs a power source,
- the type of power used for the flashing beacon,
- and the total percentage of flashing beacons using each type of power.

The D/B CDA Developer is required to submit a copy of the manufacturer's documentation for the selected solar powered flashing beacons. CTRMA approval of the materials must be obtained before utilizing any solar energy powered flashing beacons.

26.2.5 O-5: Solar Powered Traffic Control Devices

Completion of this initiative requires that the D/B CDA Developer use solar powered traffic control devices.

26.2.5.1 Credit Requirements

One Green Credit shall be awarded if 95% or more of all powered traffic control devices are powered by solar energy.

26.2.5.2 Documentation

The D/B CDA Developer is required to submit a report/spreadsheet showing:

- each traffic control device specified for the Project that needs a power source,
- the type of power used for the traffic control device,
- and the total percentage of powered traffic control devices using each type of power.

The D/B CDA Developer is required to submit a copy of the manufacturer's documentation for the selected solar powered traffic control devices. CTRMA approval of the materials must be obtained before utilizing any solar energy powered traffic control devices.

26.2.6 O-6: Solar Powered Variable Message Signs

Completion of this initiative requires that the D/B CDA Developer use solar powered variable message signs.

26.2.6.1 Credit Requirements

One Green Credit shall be awarded if 75% or more of all variable message signs are powered by solar energy.

26.2.6.2 Documentation

The D/B CDA Developer is required to submit a report/spreadsheet showing:

- each variable message sign specified for the Project,
- the type of power used for each sign,
- and the total percentage of solar powered variable message signs vs. non-solar powered variable message signs.

The D/B CDA Developer is required to submit a copy of the manufacturer’s documentation for the selected solar powered variable message signs. CTRMA approval of the product must be obtained before utilizing any solar powered variable message signs.

26.2.7 O-7 Pavement Reuseⁱ

Completion of this initiative requires that the D/B CDA Developer reuse existing pavement on the Project.

26.2.7.1 Credit Requirements

The D/B CDA Developer shall reuse a minimum percentage of existing pavement material to qualify for Green Credits for this initiative. Green Credits shall be awarded based on estimated volume according to Table 26.1. The materials considered in volume calculations can include but are not limited to hot mix asphalt (HMA), portland cement concrete (PCC), unbound granular base material and stabilized base material.

**Table 26.1
Regional Materials Point Scale**

<i>Credit Points</i>	<i>1</i>
% Reuse of Existing Pavement Materials (by Estimated Volume)	80

26.2.7.2 Documentation

The D/B CDA Developer shall submit a calculation that shows the computed percent of material reused including the following four items at minimum: (1) total volume of existing pavement structure, (2) total volume of reused pavement structure, (3) the computed percentage of the total reused volume, and (4) a short written description of how the structure was reused. The D/B CDA Developer shall submit this information monthly for the duration of pavement reuse.

26.2.8 O-8: Reusing Topsoilⁱⁱⁱ

Completion of this initiative requires that the D/B CDA Developer reuse on-site removed topsoil. This practice reduces haul distances and consumption of natural resources.

26.2.8.1 Credit Requirements

One Green Credit shall be awarded for reusing on site 75% or more of all removed topsoil.

26.2.8.2 Documentation

The D/B CDA Developer is required to submit a report/spreadsheet showing:

- the amount of topsoil removed from the Site,
- the amount of topsoil reused on the Site,
- and the total percentage removed topsoil that is reused.

26.2.9 O-9: Recycled Pavement Materialsⁱ

Completion of this initiative requires that the D/B CDA Developer use recycled materials as a substitute for virgin materials.

26.2.9.1 Credit Requirements

The D/B CDA Developer shall be awarded Green Credits based on the Average Recycled Content of the hot mix asphalt or portland cement concrete in accordance with Table 26.2.

The Average Recycled Content of recycled materials shall be calculated using the below equation:

$$ARC (\%) = \frac{\sum r_n}{\sum W_n} \times 100\%$$

Where:

- r_n is the total weight of recycled materials for that individual material or assembly
- W_n is the total weight of each individual material or assembly
- n represents the number of materials used in the pavement section

The D/B CDA Developer shall use one of the below methods for calculating the Average Recycled Content of recycled materials:

1. Consider only the pavement binder materials. This typically means the cement or asphalt in the pavement section. No other materials (e.g., aggregate in the pavement, granular base, fill, walls, bridge, signs, other structures, etc.) are considered.
2. Consider only the hot mix asphalt (HMA) or portland cement concrete (PCC) pavement materials. This encompasses the material in Option 1 plus the aggregate as well as any other additive materials. No other materials (e.g., granular base, fill, walls, bridge, signs, other structures, etc.) are considered.
3. Consider all pavement materials including granular base layers. This encompasses the material in Options 1 and 2 plus the granular base layers (either unbound or bound with a binding agent such as lime, cement or asphalt emulsion) as well as any other added materials. No other materials (e.g., fill, walls, bridge, signs, other structures, etc.) are considered.

4. Consider all project materials. This encompasses the material in Options 1, 2 and 3 plus, as a minimum, all materials in the fill and wall structures of the project. Other structures (e.g., bridges) and material (e.g., signs, traffic control devices, etc.) may be considered if desired.

Table 26.2
GreenCredits for Average Recycled Content (Percent by Weight of Materials)

<i>Green Credits Earned</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Percent recycled material required for Options 1 and 2	10%	20%	30%	40%	50%
Percent recycled material required for Options 3 and 4	20%	30%	40%	50%	60%

It may be difficult to measure the recycled content of a material in place. For the purposes of this credit, it is sufficient to use the approved mix design or specified amount of recycled material as an estimate of the fraction of recycled material. Therefore, if paving rubberized HMA (RHMA) and the asphalt rubber mix design specifies 20% crumb rubber modifier (CRM) by weight then this number can be used as the percent recycled material in the binder provided that standard quality control and quality assurance testing shows the produced material meets the mix design specifications.

Similarly, if the PCC mix design specifies 20% recycled concrete aggregate (RCA) as a minimum then this number can be used as the percent recycled material in the PCC provided that standard quality control and quality assurance testing shows the produced material meets the mix design specifications. If a minimum recycled content is specified but a contractor chooses to use more than the minimum amount, records showing the actual recycled content must be submitted if credit for the actual amount is to be given. Otherwise, the minimum specified shall be assumed to be present in the material.

26.2.9.2 Documentation

The D/B CDA Developer shall submit the following information to the CTRMA on a monthly basis for the duration of pavement recycling:

- A spreadsheet that clearly notes which calculation method is used and lists: total weight of each material used, total weight of recycled materials, and computed Average Recycled Content for the Project.
- A copy of the approved mix design for the pavement materials and (if options 3 or 4 are chosen) copies of the specifications for the additional materials that state the required or minimum recycled content if available.
- Supporting test documents (usually from quality assurance or quality control testing) such as plant proportioning records, mix tickets, and manufacturer’s documentation for products (steel, rebar, etc.) that state the actual recycled material content (if no minimum is specified or if the contractor chooses to use more than the specified minimum).

26.2.10 O-10: Recycled Fill/Embankment Materials^{iv}

Completion of this initiative requires that the D/B CDA Developer use recycled materials in fill/embankment.

26.2.10.1 Credit Requirements

Green Credits shall be awarded in accordance with the following thresholds:

- 10% or more of fill/embankment is recycled material (1 credit);
- 20% or more of fill/embankment is recycled material (2 credits).

26.2.10.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheet showing:

- the total volume of fill/embankment used for the Project,
- the total volume of fill/embankment that is recycled material,
- and the total percentage of fill/embankment that is recycled material.

The D/B CDA Developer shall submit a list of proposed recycled materials to use as fill/embankment prior to commencement of construction. Each material must be approved by the CTRMA prior to placement on Site.

26.2.11 O-11: Recycling Natural Untreated Wood Wasteⁱⁱⁱ

Completion of this initiative requires that the D/B CDA Developer recycle natural untreated wood waste for use as mulch and/or ground cover.

26.2.11.1 Credit Requirements

One Green Credit shall be awarded if 75% or more of the Project's natural untreated wood waste is recycled for use as mulch and/or ground cover.

Natural untreated wood waste includes chipped untreated wood gathered from clearing and grubbing as well as any trees that must be moved and cannot be easily relocated. Pressure- or preservative-treated, and painted or coated wood waste generated from demolition or other construction activities cannot be used as mulch and must be disposed of in accordance with applicable Laws.

The D/B CDA Developer shall designate a on-Site location to store any natural untreated wood waste separate from all other wastes.

26.2.11.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheets that shows how much natural untreated wood waste by volume was recovered from the Project and what percentage of the wood was recycled for mulch and/or ground cover.

26.2.12 O-12: Regional Materialsⁱ

Completion of this initiative requires that the D/B CDA Developer obtain regional materials for construction.

26.2.12.1 Credit Requirements

The D/B CDA Developer shall make an itemized list of all materials, parts, components and products intended for permanent installation on the project including weights, total costs, shipping costs, and location of purchase and/or source of these materials. The D/B CDA Developer shall demonstrate that Project meets the requirements of Option 1 or Option 2 below.

Option 1: Choose local materials and product suppliers. Compute the total cost of all materials, parts, components and products used for Project construction including all shipping and transport costs based on the Project bid list. Compute the percentage of this total cost that has been paid to materials suppliers, processors, distributors and producers within a 100 mile radius of the geographic center of the Project. Green Credits shall be awarded according to the minimum percentages shown in Table 26.3.

Option 2: Minimize travel distance for Project construction materials. Disaggregate each material, part, component or product into its Basic Materials by weight and express as a percentage of the sum of these weights. Compute the cumulative fronthaul distance traveled for each basic material from point of origin to the final endpoint on the Project. Note this distance includes all intermediary points, such as assembly or distribution, between the original source and the final placement on the Project. Report the total distance in terms of total freight miles (road, air, rail or barge) traveled for each basic material. Show that at least 95% of these basic materials by weight have traveled less than the maximum haul distances shown in Table 26.3.

The D/B CDA Developer shall not consider the following items for purposes of this Section 26.2.14.1:

- the distance traveled by emptied vehicles leaving the Site (backhaul)
- waste materials not intended for reuse or recycling on the Project
- Materials that qualify for Green Credits under Section 26.2.9 However, recycled materials that originate from the Project and are transported off Site for reprocessing before being returned to the Site are considered. The D/B CDA Developer shall track weights of any added or lost materials during such a recycling process.

Table 26.3
Regional Materials Point Scale

<i>Green Credits</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Option 1 by % of total	60	75	84	90	95
Option 2 by maximum fronthaul distance (miles)	500	337.5	225	150	100

Generally, the “origin” or “source” of a basic material means where it came out of the Earth or was initially fabricated. “Fronthaul” means traveling from the origin of the basic material and any of the places it has traveled on its way to the final destination in the project. This includes any material that is sourced at the site and taken offsite for reprocessing, such as recycling, later to return at the site in a different form. By contrast, the term “backhaul” is typically used to describe materials taken away from the site, usually destined for landfill, but sometimes is just an empty truck returning to its point of origin for another load.

26.2.12.2 Documentation

The D/B CDA Developer shall submit the following information to the CTRMA for each of the respective options described in this Section 26.2.14:

Option 1

- A spreadsheet including an itemized list of all purchased Basic Materials used on the Project and the billing address of the source for each.
- A computation of the total percentage of Basic Materials sourced within a 100 mile radius of the Project.
- A map showing the geographic center (in latitude and longitude) of the Project. This may, in many cases, be a milepost or station. The map must show:
 - The name and location of the Project.
 - The geographic center of the Project. Show the latitude and longitude or station and offset.
 - A clearly drawn circle with a radius of 100 miles drawn to scale.
 - A scale.
 - Labels or icons for each Basic Material with a billing address that lies within the 100 mile radius.

Option 2

- A spreadsheet showing:
 - An itemized list of each Basic Material and its weight.

- Cumulative fronthaul distance for each Basic Material.
- A list of the locations that the Basic Material visited during fronthaul.
- A computation showing 95% of the total material weight meets the maximum haul distance requirements to qualify for points in Table 26.3. Fuel receipts, mix tickets, dump tickets, and similar supporting documents may be requested to verify spreadsheet calculations.

26.2.13 O-13: Steel Recycling

Completion of this initiative requires that the D/B CDA Developer separate steel from other co-mingled demolished on-site materials for recycling.

26.2.13.1 Credit Requirements

One Green Credit shall be awarded for separating out for recycling 95% or more of all demolished steel.

26.2.13.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheet containing the following information:

- the amount of steel waste by weight generated from demolition or construction,
- the percent of the steel by weight that is stored for recycling,
- the process for separating and storing the steel,
- and how and where the steel is recycled.

26.2.14 O-14: Wood Recycling

Completion of this initiative requires that the D/B CDA Developer separate wood from other co-mingled demolished on-site materials for recycling.

26.2.14.1 Credit Requirements

One Green Credit shall be awarded for separating out for recycling 95% or more of all demolished wood. The D/B CDA Developer shall not consider natural untreated wood gathered from clearing and grubbing or from tree removal in calculating the amount of recycled wood.

26.2.14.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheet containing the following information:

- the amount of wood waste by weight generated from demolition or construction,

- the percent of the wood by weight that is stored for recycling,
- the process for separating and storing the wood,
- and how and where the wood is recycled.

26.2.15 O-15: Reuse of Demolished Guardrail

Completion of this initiative requires that the D/B CDA Developer arrange for the reuse of demolished guardrail by another project.

26.2.15.1 Credit Requirements

One Green Credit shall be awarded for arranging for the reuse of 75% or more of all demolished guardrail.

26.2.15.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheet containing the following information:

- the total length of guardrail removed during demolition,
- the total length of guardrail arranged to be reused by another project,
- the names of all projects reusing guardrail,
- how much guardrail will be reused by each project,
- contact information for a member of each project team for the project(s) receiving demolished guardrail,
- and the percentage of demolished guardrail being reused by other projects.

26.2.16 O-16: Reuse of Demolished Signs

Completion of this initiative requires that the D/B CDA Developer arrange for the reuse of demolished signs by another project.

26.2.16.1 Credit Requirements

One Green Credit shall be awarded for arranging for the reuse of 50% or more of all demolished signs.

26.2.16.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheet containing the following information:

- a list of all signs removed during demolition
- whether reuse by another project was arranged for the sign,

- the name of the project that will be reusing the sign,
- contact information for a member of the project team from the project receiving the demolished signs,
- and the total percentage of signs being reused by other projects.

26.2.17 O-17: Reuse of Other Demolished Materialsⁱⁱⁱ

Completion of this initiative requires that the D/B CDA Developer arrange for the reuse of other demolished materials by another project, by another municipality or state agency, or at nearby abandoned quarries to help fulfill an approved reclamation plan.

26.2.17.1 Credit Requirements

One Green Credit shall be awarded for arranging for the reuse of 75% or more of other demolished materials. The D/B CDA Developer shall submit for approval to the CTRMA any other demolished items that can be reused by another project. Green Credits shall be awarded for each reused material approved by the CTRMA.

26.2.17.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheet for each material that Green Credits are sought for containing the following information:

- a list and/or amount of the demolished material
- the amount of the demolished material that has been arranged to be reused by another project,
- the names of the projects, municipalities, state agencies, or quarries that will be reusing the material,
- contact information for a member of each entity,
- and the total percentage of the demolished material being reused by another entity.

26.2.18 O-18: Utilizing Reclaimed or Non-treated Water

Completion of this initiative requires that the D/B CDA Developer use reclaimed or non-treated water for dust control during construction to reduce the amount of potable water being used. This Optional Sustainability Initiative shall apply when the City of Austin opens a reclaimed water source at the Walnut Creek Plant, or if the D/B CDA Developer identifies an alternate source at an earlier time.

26.2.18.1 Credit Requirements

Green Credits shall be awarded in accordance with the following thresholds:

- 75% or more of all water used for dust control is reclaimed or non-treated (1 credit);
- 95% or more of all water used for dust control is reclaimed or non-treated (2 credits).

Water used for dust control purposes shall be in compliance with all applicable Laws.

26.2.18.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheet containing the following information:

- the volume of water used for dust control for the Project,
- the water sources used and the volume of water that came from each,
- and the total percentage by volume of water used for dust control that was reclaimed or non-treated.

26.2.19 O-19: Separating Waste for Landfills from Recyclable Wasteⁱⁱ

Completion of this initiative requires that the D/B CDA Developer store all construction waste for landfill separately from construction waste for recycling.

26.2.19.1 Credit Requirements

Two Green Credits shall be awarded if 95% of construction waste for landfills is stored separately from construction waste for recycling.

26.2.19.2 Documentation

The D/B CDA Developer shall submit a report/spreadsheet explaining how and where all types of waste are stored.

26.2.20 O-20: Fossil Fuel Reductionⁱ

Completion of this initiative requires that the D/B CDA Developer reduce the overall consumption of fossil fuels by nonroad construction equipment.

26.2.20.1 Credit Requirements

The D/B CDA Developer shall reduce the fossil fuel requirements of the nonroad construction equipment fleet through the use of biofuel or biofuel blends as a replacement for fossil fuel. Green Credits shall be awarded in accordance with the following thresholds:

- A 15% reduction in fossil fuels (2 Credits);
- A 25% reduction in fossil fuels (3 Credits).

Use of biofuel (B100) or biofuel blends (B20, B50, etc.) are acceptable methods of reducing fossil fuels in nonroad equipment.

26.2.20.2 Documentation

The D/B CDA Developer shall submit the following documentation to earn Green Credits for this initiative:

- A signed letter that describes the fossil fuel reduction measures implemented and the expected percent reduction. The D/B CDA Developer shall submit this letter prior to commencing construction activities.
- A spreadsheet summarizing all receipts for all fuel used in nonroad equipment for the Project. The spreadsheet should indicate (and receipts should show) associated biofuel blend (e.g., B5, B20, B100) used.

26.2.21 O-21: Equipment Emission Reductionⁱ

Completion of this initiative requires that the D/B CDA Developer reduce air emissions from nonroad construction equipment by early achievement of the EPA Tier 4 emission standard. Credit Requirements

The D/B CDA Developer shall be awarded Green Credits in accordance with the below thresholds for installing emission reduction exhaust retrofits and/or add-on fuel efficiency technologies on nonroad construction equipment to achieve the EPA Tier 4 emission standard:

- 25% of Project fleet operating hours achieve the EPA Tier 4 emission standard (1 credit);
- 50% of Project fleet operating hours achieve the EPA Tier 4 emission standard (2 credits);
- 75% of Project fleet operating hours achieve the EPA Tier 4 emission standard (3 credits).

26.2.21.1 Documentation

The D/B CDA Developer shall provide a monthly report listing all nonroad construction equipment used on the Project that contains the following information:

- Make and model of each piece of equipment.
- Monthly operating hours associated with the project.
- Monthly operating hours for each piece of equipment
- For equipment achieving Tier 4 emissions standards, documented evidence that the equipment either (a) meets EPA Tier 4 emissions standards, or (b) has installed emission reduction exhaust retrofits and add-on fuel efficiency technologies that achieve the EPA Tier 4 standard.

26.2.22 O-22: Paving Emissions Reductionⁱ

Completion of this initiative requires that the D/B CDA Developer improve human health by reducing worker exposure to asphalt fumes.

26.2.22.1 Credit Requirements

One Green Credit shall be awarded for placing all of the hot mix asphalt (HMA) on the Project using a paver that is certified to have met National Institute for Occupational Safety and Health (NIOSH) emission guidelines as set forth in Engineering Control Guidelines for Hot Mix Asphalt Pavers, Part 1: New Highway-Class Pavers (Department of Health and Human Services (NIOSH) Publication No. 97-105, April 1997 printing).

26.2.22.2 Documentation

The D/B CDA Developer shall submit the following documentation to earn Green Credits for this initiative:

- A copy of the manufacturing certification provided with the paver(s) when purchased. The NIOSH (1997) document provides an example of the certification wording.
- A signed statement by the D/B CDA Developer indicating that the certified paver(s) referenced in the first document was (were) used on the Project and did place all of the HMA.

26.2.23 O-23: Automated Equipment Idle Shutdown^{iv}

Completion of this initiative requires that the D/B CDA Developer utilize automated idle shutdown for equipment.

26.2.23.1 Credit Requirements

Green Credits shall be awarded in accordance with the following thresholds:

- 50% or more pieces of equipment have automated idle shutdown (1 credit);
- 95% or more pieces of equipment have automated idle shutdown (2 credits).

26.2.23.2 Documentation

The D/B CDA Developer shall provide a report/spreadsheet that includes a list of all equipment utilized during construction, indicates which pieces of equipment utilize automated idle shutdown, and states the total percentage of vehicles using automated idle shutdown.

26.2.24 O-24: Hybrid Vehiclesⁱⁱ

Completion of this initiative requires that the D/B CDA Developer utilize hybrid vehicles.

26.2.24.1 Credit Requirements

Green Credits shall be awarded in accordance with the below thresholds:

- 50% or more vehicles are hybrids (2 credits);
- 75% or more vehicles are hybrids (3 credits);
- 95% or more vehicles are hybrids (4 credits).

26.2.24.2 Documentation

The D/B CDA Developer shall provide a report/spreadsheet that includes a list of all vehicles utilized during construction, indicates which are hybrid vehicles, and provides the total percentage of vehicles used during construction that are hybrids.

26.2.25 O-25: Four Cycle Engines

Completion of this initiative requires that the D/B CDA Developer utilize vehicles and equipment with 4 cycle engines in lieu of 2 cycle engines.

26.2.25.1 Credit Requirements

One Green Credit shall be awarded if 85% or more pieces of equipment used for the Project have 4 cycle engines.

26.2.25.2 Documentation

The D/B CDA Developer shall provide a report/spreadsheet showing:

- a list of equipment used for the Project,
- the type of engine (2 or 4 cylinder),
- and the percentage of vehicles/equipment used with 4 cylinder engines.

26.2.26 O-26: Diesel Engine Retrofitsⁱⁱ

Completion of this initiative requires that the D/B CDA Developer retrofit diesel engines with cleaner certified configurations in accordance with one of the EPA's Verified Technologies for retrofitting diesel engines (<http://www.epa.gov/oms/retrofit/verif-list.htm>).

26.2.26.1 Credit Requirements

Green Credits shall be awarded in accordance with the following thresholds:

- 50% or more pieces of equipment with diesel engines are retrofitted (2 credits);
- 75% or more pieces of equipment with diesel engines are retrofitted (3 credits);
- 95% or more pieces of equipment with diesel engines are retrofitted (4 credits).

26.2.26.2 Documentation

The D/B CDA Developer shall provide a report/spreadsheet showing:

- a list of equipment with diesel engines used for the Project,
- which pieces of equipment were retrofitted,
- which EPA Verified Technology was used,
- and the percentage of diesel equipment that was retrofitted.

26.2.27 O-27: Spill Kitsⁱⁱ

Completion of this initiative requires that the D/B CDA Developer ensure spill kits are available on all equipment.

26.2.27.1 Credit Requirements

The D/B CDA Developer shall install FHWA approved spill kits on all equipment. The FHWA (<http://ops.fhwa.dot.gov/publications/fhwahop08058/50.htm>) lists three basic types of spill kits:

1. Universal or General Purpose spill kits contain gray absorbents made with activated charcoal or a similar capturing agent. Universal or general purpose spill kits are used to clean-up both water-based fluids and hydrocarbons.
2. Oil-Only spill kits are used to clean-up hydrocarbons only (motor oil, jet fuel, diesel, gasoline, hydraulic oil, etc.) and contain white absorbents that repel and float on water.
3. Hazmat spill kits contain yellow absorbents to clean-up aggressive fluids, such as acids and solvents, and will absorb hydrocarbons as well as water-based fluids.

The D/B CDA Developer shall be awarded one Green Credit if the following criteria are met:

- A Universal spill kit is available on all of equipment.
- An Oil-Only spill kit is available on all of equipment.
- A Hazmat spill kit is available on all equipment that deal with Hazardous Materials.

26.2.27.2 Documentation

The D/B CDA Developer shall provide a report/spreadsheet showing:

- a list of all equipment used for the Project,
- whether the equipment deals with Hazardous Materials,
- and which spill kits are available on the equipment.

26.3 REQUIRED GREEN CREDITS

The D/B CDA Developer shall complete all Mandatory Sustainable Initiatives and enough Optional Sustainable Initiatives to achieve a total of 30 Green Credits.

ⁱ Greenroads Version 1.0 Abridged Manual. <http://www.greenroads.us/366/download-the-manual.html>.

ⁱⁱ Parsons Brinkerhoff Highway Sustainability Checklist Version 6.
http://pbsustainability.com/pdfs/Highway_Sustainability_Checklist.xls

ⁱⁱⁱ NYSDOT GreenLITES Project Design Certification Program. September 2008.
<https://www.nysdot.gov/programs/greenlites/repository/Green%20LITES%20Certification%20Program%20-%20Full%20Doc%20-%20Final.pdf>

^{iv} MoDOT Green Credit Pilot Program. 2009.

Exhibit “D”
Central Texas Regional Mobility Authority (CTRMA)
290 East Toll Project

Comprehensive Development Agreement
Request for Detailed Proposals (RFDP)

Reference Documents

- ❖ **Item 1 - Environmental Documents**
 - Item 1a – Environmental Assessment (EA)
 - Item 1b – FHWA Finding of No Significant Impact (FONSI)
 - Item 1c – Reevaluation to the EA
 - Item 1d – Wetland Determination Findings
 - Item 1e – Reevaluation to the EA Approval Letter

- ❖ **Item 2 - Schematic Plan**
 - Item 2a – Schematic Plan – Sheets 1 and 2
 - Item 2b – Schematic Plan – Native Files

- ❖ **Item 3 - Existing Design Plans**
 - Item 3a – Segment 1A Existing Design Plans
 - Item 3b – Segment 2 Existing Design Plans
 - Item 3c – Segment 3 Existing Design Plans

- ❖ **Item 4 - Ultimate Design**
 - Item 4a – Ultimate Design Exhibits
 - Item 4b – Ultimate Design Exhibits – Native Files

- ❖ **Item 5 - Drainage Impact Studies**
 - Item 5a – Segment 2 Drainage Impact Study
 - Item 5b – Segment 3 Drainage Impact Study

- ❖ **Item 6 - Geotechnical Reports**
 - Item 6a – Segment 1 Geotechnical Reports
 - Item 6b – Segment 2 Geotechnical Reports
 - Item 6c – Segment 3 Geotechnical Reports

- ❖ **Item 7 - ROW Maps**
 - Item 7a – Interim Milestone Schematic ROW Maps
 - Item 7b – Schematic ROW Maps

- ❖ **Item 8 - Utility Files**
 - Item 8a – Existing Utility Information
 - Item 8b – Preliminary Utility Adjustment Concept Plan for Interim Milestone

Item 8c – Preliminary Adjustment Plans for Austin Energy Transmission Facility [Draft]
Item 8d – Executed Utility Design Files for the US 183 Interchange Project [Draft]
Item 8e – Standard Utility Forms

❖ **Item 9 - Toll Facility Guidelines**
Item 9a – Toll Facility Guidelines

❖ **Item 10 - Landscape and Aesthetic Requirements**
Item 10a – Landscape and Aesthetic Requirements
Item 10b – Aesthetic Enhancement
Item 10c – Aesthetic Enhancement– Native Files
Item 10d – Modified Rail Sheets

❖ **Item 11 - Special Provisions**
Item 11a – Special Provisions

❖ **Item 12 - Standards**
Item 12a – Austin District Standards
Item 12b – TTA Standards

❖ **Item 13 - Memorandums of Understanding**

❖ **Item 14 - Project Development Agreement (PDA)**
Item 14a – CTRMA and TxDOT Draft PDA

❖ **Item 15 - Construction Quality Assurance Program (QAP)**
Item 15a – Construction QAP

❖ **Item 16 - US 183 Interchange Project Design Plans**
Item 16a – US 183 Interchange Project Design Plans
Item 16b – US 183 Interchange Design Plans – Native Files

❖ **Item 17 - CADD Standards Manual**
Item 17a – CADD Standards Manual
Item 17b – CADD Standards Resource Files

❖ **Item 18 - Survey Data**
Item 18a – TxDOT Survey Data
Item 18b – TxDOT Survey Data – Native Files

❖ **Item 19 - Permitted Loads Requirements**
Item 19a – Non-Tolled Facility Permitted Loads Requirements
Item 19b – Permitted Loads Signing Requirements

- ❖ **Item 20 - Pavement Design**
 - Item 20a – Pavement Design Report
 - Item 20b – Memorandum Report Revisions
 - Item 20c – Pavement Design Report Correction

- ❖ **Item 21 - ITS**
 - Item 21a – ITS Schematic
 - Item 21b – Austin District Guidelines for Developing Freeway Corridor Traffic Management System

- ❖ **Item 22 – Preliminary Signing Schematic**
 - Item 22a – Preliminary Signing Schematic

- ❖ **Item 23 – Illumination Limits Exhibit**
 - Item 23a – Illumination Limits Exhibit – Sheets 1 and 2

- ❖ **Item 24 – As-built Plans**
 - Item 24a – US 290 As-built Plans
 - Item 24b – SH 130 As-built Plans
 - Item 24c – Parmer Lane As-built Plans

- ❖ **Item 25 – TxDOT Plans**
 - Item 25a – Preliminary FM 3177 Realignment Plans

EXHIBIT E
FEDERAL REQUIREMENTS

<u>Exhibit Description</u>	<u>No. of Pages</u>
Attachment 1 – Federal Provisions	2
Attachment 2 – FHWA Form 1273	25
Attachment 3 – Wage Determination of the Secretary of Labor	4
Attachment 4 – Equal Employment Opportunity	5
Attachment 5 – Affirmative Action	5
Attachment 6 – Debarment and Suspension Certification	1
Attachment 7 – Lobbying Certification	2
Attachment 8 – Compliance with Buy America Requirements	2

ATTACHMENT 1 TO EXHIBIT E

FEDERAL REQUIREMENTS FOR FEDERAL-AID CONSTRUCTION FACILITIES

GENERAL. — The work herein proposed will be financed in whole or in part with Federal funds, and therefore all of the statutes, rules and regulations promulgated by the Federal Government and applicable to work financed in whole or in part with Federal funds will apply to such work. The "Required Contract Provisions, Federal-Aid Construction Contracts, Form FHWA 1273," are included in this Exhibit E. Whenever in said required contract provisions references are made to:

(a) "SHA contracting officer", "SHA resident engineer", or "authorized representative of the SHA", such references shall be construed to mean TxDOT or its Authorized Representative;

(b) "contractor", "prime contractor", "bidder" or "prospective primary participant", such references shall be construed to mean Design-Builder or its authorized representative and/or the Design-Build Contractor or its authorized representative, as may be appropriate under the circumstances;

(c) "contract" or "prime contract", such references shall be construed to mean the Design-Build Contract;

(d) "subcontractor", "supplier", "vendor", "prospective lower tier participant" or "lower tier subcontractor", such references shall be construed to mean, as appropriate, Contractors other than the Design-Build Contractor; and

(e) "department", "agency" or "department or agency entering into this transaction", such references shall be construed to mean TxDOT or its Authorized Representative, except where a different department or agency is specified.

PERFORMANCE OF PREVIOUS CONTRACT. — In addition to the provisions in Section II, "Nondiscrimination," and Section VII, "Subletting or Assigning the Contract," of the Form 1273 required contract provisions, Design-Builder shall cause the contractor to comply with the following:

The bidder shall execute the CERTIFICATION WITH REGARD TO THE PERFORMANCE OF PREVIOUS CONTRACTS OR SUBCONTRACTS SUBJECT TO THE EQUAL OPPORTUNITY CLAUSE AND THE FILING OF REQUIRED REPORTS located in the proposal. No request for subletting or assigning any portion of the contract in excess of \$10,000 will be considered under the provisions of Section VII of the required contract provisions unless such request is accompanied by the CERTIFICATION referred to above, executed by the proposed subcontractor.

NON-COLLUSION PROVISION. — The provisions in this section are applicable to all contracts except contracts for Federal Aid Secondary Projects. Title 23, United States Code, Section 112, requires as a condition precedent to approval by the Federal Highway Administrator of the contract for this work that each bidder file a sworn statement executed by, or on behalf of, the person, firm, association, or corporation to whom such contract is to be

awarded, certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the submitted bid. A form to make the non-collusion affidavit statement required by Section 112 as a certification under penalty of perjury rather than as a sworn statement as permitted by 28 U.S.C., Sec. 1746, is included in the Proposal.

PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES IN SUBCONTRACTING. — Part 26, Title 49, Code of Federal Regulations applies to this Facility. Pertinent sections of said Code are incorporated within other sections of the Contract and the TxDOT Disadvantaged Business Enterprise Program adopted pursuant to 49 CFR Part 26.

CONVICT PRODUCED MATERIALS

a. FHWA Federal-aid projects are subject to 23 CFR § 635.417, Convict produced materials.

b. Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal aid highway construction project if such materials have been: (i) produced by convicts who are on parole, supervised release, or probation from a prison, or (ii) produced in a prison project in which convicts, during the 12 month period ending July 1, 1987, produced materials for use in Federal aid highway construction projects, and the cumulative annual production amount of such materials for use in Federal aid highway construction does not exceed the amount of such materials produced in such project for use in Federal aid highway construction during the 12 month period ending July 1, 1987.

FHWA FORM 1273 SECTIONS VII.1 AND VII.2 INAPPLICABLE – Pursuant to 23 CFR 635.116(d), the requirements of Sections VII.1 and VII.2 of FHWA Form 1273 (Attachment 2 to Exhibit 8 to the Agreement) are inapplicable to the Agreement.

ACCESS TO RECORDS

a. As required by 49 CFR 18.36(i)(10), Design-Builder and its Contractors shall allow FHWA and the Comptroller General of the United States, or their duly authorized representatives, access to all books, documents, papers, and records of Design-Builder and Contractors which are directly pertinent to any grantee or subgrantee contract, for the purpose of making audit, examination, excerpts, and transcriptions thereof. In addition, as required by 49 CFR 18.36(i)(11), Design-Builder and its Contractors shall retain all such books, documents, papers, and records for three years after final payment is made pursuant to any such contract and all other pending matters are closed.

b. Design-Builder agrees to include this section in each Contract at each tier, without modification except as appropriate to identify the Contractor who will be subject to its provisions.

ATTACHMENT 2 TO EXHIBIT E

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

FHWA Form 1273

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I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.
3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.
4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:
 - Section I, paragraph 2;
 - Section IV, paragraphs 1, 2, 3, 4, and 7;
 - Section V, paragraphs 1 and 2a through 2g.
5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.
6. Selection of Labor: During the performance of this contract, the contractor shall not:
 - a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
 - b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
 - a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.
 - b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."
2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its

implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

- b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
- c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.
- d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
- e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

- a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.
- b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
- c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be

taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

- a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
- b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.
- c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
- d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

- 7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the

unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

- a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
- b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
- c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.
- d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

- a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.
- b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and

female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

- c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

- a. The records kept by the contractor shall document the following:
 - i. The number of minority and non-minority group members and women employed in each work classification on the project;
 - ii. The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
 - iii. The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
 - iv. The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

- 1. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the

EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

2. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).
3. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

- a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a

weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

- b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.
- c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

- a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.
- b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:
 - i. the work to be performed by the additional classification requested is not performed by a classification in the wage determination;
 - ii. the additional classification is utilized in the area by the construction industry;
 - iii. the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and
 - iv. with respect to helpers, when such a classification prevails in the area in which the work is performed.
- c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional

classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

- d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary
- e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

- a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.
- b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

- a. Apprentices:
 - i. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary

employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

- ii. The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.
- iii. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.
- iv. In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

- i. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed

unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

- ii. The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.
 - iii. Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.
 - iv. In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- c. Helpers:
- d. Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under an approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the

clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3)

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

- a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.
- b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that

the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

- c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.
- d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - i. that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;
 - ii. that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;
 - iii. that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

- f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.
- g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

- 1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:
 - a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.
 - b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.
 - c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.
- 2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

- 1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items

designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

- a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
 - b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
 3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.
 4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the

contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the Project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

- *"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or*
- *Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or*
- *Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to*

provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

- *Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."*

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub. L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub. L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions

(Applicable to all Federal-aid contracts - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The

prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

- c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
- d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to,

check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

- i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--
Primary Covered Transactions**

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
 - d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--
Lower Tier Covered Transactions:**

- 1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- 2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

- 1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
 - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

- b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- 2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
- 3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

Concrete Paving Saw Operator	\$ 13.56	0.00
Concrete Paving Spreader Operator	\$ 14.50	0.00
Concrete Rubber	\$ 10.61	0.00
Crane, Clamshell, Backhoe, Derrick, Dragline, Shovel Operator	\$ 14.12	0.00
Electrician	\$ 18.12	0.00
Flagger	\$ 8.43	0.00
Form Builder/Setter, Structures	\$ 11.63	0.00
Form Setter, Paving & Curb.	\$ 11.83	0.00
Foundation Drill Operator, Crawler Mounted	\$ 13.67	0.00
Foundation Drill Operator, Truck Mounted	\$ 16.30	0.00
Front End Loader Operator	\$ 12.62	0.00
Laborer, common	\$ 9.18	0.00
Laborer, Utility	\$ 10.65	0.00
Mechanic	\$ 16.97	0.00
Milling Machine Operator, Fine Grade	\$ 11.83	0.00
Mixer operator	\$ 11.58	0.00
Motor Grader Operator, Fine Grade	\$ 15.20	0.00
Motor Grader Operator, Rough	\$ 14.50	0.00
Oiler	\$ 14.98	0.00
Painter, Structures	\$ 13.17	0.00
Pavement Marking Machine Operator	\$ 10.04	0.00
Pipelayer	\$ 11.04	0.00
Reinforcing Steel Setter, Paving	\$ 14.86	0.00
Reinforcing Steel Setter, Structure	\$ 16.29	0.00
Roller Operator, Pneumatic, Self-Propelled	\$ 11.07	0.00
Roller Operator, Steel Wheel, Flat Wheel/Tamping	\$ 10.92	0.00
Roller Operator, Steel Wheel, Plant Mix Pavement	\$ 11.28	0.00
Scraper Operator	\$ 11.42	0.00
Servicer	\$ 12.32	0.00
Slip Form Machine Operator	\$ 12.33	0.00
Spreader Box operator	\$ 10.92	0.00
Tractor operator, Crawler Type	\$ 12.60	0.00
Tractor operator, Pneumatic	\$ 12.91	0.00
Traveling Mixer Operator	\$ 12.03	0.00
Truck driver, lowboy-Float\$	\$ 14.93	0.00

Truck driver, Single Axle, Heavy	\$ 11.47	0.00
Truck driver, Single Axle, Light	\$ 10.91	0.00
Truck Driver, Tandem Axle, Semi-Trailer	\$ 11.75	0.00
Truck Driver, Transit-Mix	\$ 12.08	0.00
Wagon Drill, Boring Machine, Post Hole Driller Operator	\$ 14.00	0.00
Welder	\$ 13.57	0.00
Work Zone Barricade Servicer	\$ 10.09	0.00

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

ATTACHMENT 4 TO EXHIBIT E

EQUAL EMPLOYMENT OPPORTUNITY

SPECIAL PROVISION

000--001

**Standard Federal Equal Employment Opportunity
Construction Contract Specifications (Executive Order 11246)**

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - d. "Minority" includes:
 - Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Hometown Plan area (including goals and timetables) shall be in accordance with that plan for those trades which have unions participating in the Hometown Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved

Hometown Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Hometown Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Hometown Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Hometown Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing contracts in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the contract is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or any Federal procurement contracting officer. The contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.
7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to

community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or woman sent by the contractor, or when the contractor has other information that the union referral Process has impeded the contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the contractor's EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the contractor's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the contractor's EEO policy and the contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally, the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).
16. In addition to the reporting requirements set forth elsewhere in this contract, the contractor and the subcontractors holding subcontracts, not including material suppliers,

of \$10,000 or more, shall submit for every month of July during which work is performed, employment data as contained under Form PR 1391 (Appendix C to 23 CFR, Part 230), and in accordance with the instructions included thereon.

ATTACHMENT 5 TO EXHIBIT E

AFFIRMATIVE ACTION

SPECIAL PROVISION

000--1981

**Notice of Requirement for Affirmative Action to
Ensure Equal Employment Opportunity (Executive Order 11246)**

1. General.

In addition to the affirmative action requirements of the Special Provision titled "Standard Federal Equal Employment Opportunity Construction Contract Specifications" as set forth elsewhere in this proposal, the contractor's attention is directed to the specific requirements for utilization of minorities and females as set forth below.

2. Goals.

- a. Goals for minority and female participation are hereby established in accordance with 41 CFR 60-4.
- b. The goals for minority and female participation expressed in percentage terms for the contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

**Goals for minority
participation in
each trade
(per- cent)**

**Goals for female
participation in
each trade
(per-cent)**

See Table 1

6.9

- c. These goals are applicable to all the contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction. The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Standard Federal Equal Employment Opportunity Construction Contract Specifications Special Provision and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority and female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

- d. A contractor or subcontractor will be considered in compliance with these provisions by participation in the Texas Highway-Heavy Branch, AGC, Statewide Training and Affirmative Action Plan. Provided that each contractor or subcontractor participating in this plan must individually comply with the equal opportunity clause set forth in 41 CFR 60-1.4 and must make a good faith effort to achieve the goals set forth for each participating trade in the plan in which it has employees. The overall good performance of other contractors and subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to make good faith efforts to achieve the goals contained in these provisions. Contractors or subcontractors participating in the plan must be able to demonstrate their participation and document their compliance with the provisions of this plan.

3. Subcontracting.

The contractor shall provide written notification to TxDOT within ten Business Days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation pending concurrence of TxDOT in the award. The notification shall list the names, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. Covered area.

As used in this special provision, and in the contract resulting from this solicitation, the geographical area covered by these goals for female participation is the State of Texas. The geographical area covered by these goals for other minorities are the counties in the State of Texas as indicated in Table 1.

5. Reports.

The contractor is hereby notified that he may be subject to the Office of Federal Contract Compliance Programs (OFCCP) reporting and record keeping requirements as provided for under Executive Order 11246 as amended. OFCCP will provide direct notice to the contractor as to the specific reporting requirements that he will be expected to fulfill.

Table 1

County	Goals for Minority Participation	County	Goals for Minority Participation
Anderson	22.5	Concho	20.0
Andrews	18.9	Cooke	17.2
Angelina	22.5	Coryell	16.4
Aransas	44.2	Cottle	11.0
Archer	11.0	Crane	18.9
Armstrong	11.0	Crockett	20.0
Atascosa	49.4	Crosby	19.5
Austin	27.4	Culberson	49.0
Bailey	19.5	Dallam	11.0
Bandera	49.4	Dallas	18.2

Bastrop	24.2	Dawson	19.5
Baylor	11.0	Deaf Smith	11.0
Bee	44.2	Delta	17.2
Bell	16.4	Denton	18.2
Bexar	47.8	DeWitt	27.4
Blanco	24.2	Dickens	19.5
Borden	19.5	Dimmit	49.4
Bosque	18.6	Donley	11.0
Bowie	19.7	Duval	44.2
Brazoria	27.3	Eastland	10.9
Brazos	23.7	Ector	15.1
Brewster	49.0	Edwards	49.4
Briscoe	11.0	Ellis	18.2
Brooks	44.2	El Paso	57.8
Brown	10.9	Erath	17.2
Burleson	27.4	Falls	18.6
Burnet	24.2	Fannin	17.2
Caldwell	24.2	Fayette	27.4
Calhoun	27.4	Fisher	10.9
Callahan	11.6	Floyd	19.5
Cameron	71.0	Foard	11.0
Camp	20.2	Fort Bend	27.3
Carson	11.0	Franklin	17.2
Cass	20.2	Freestone	18.6
Castro	11.0	Frio	49.4
Chambers	27.4	Gaines	19.5
Cherokee	22.5	Galveston	28.9
Childress	11.0	Garza	19.5
Clay	12.4	Gillespie	49.4
Cochran	19.5	Glasscock	18.9
Coke	20.0	Goliad	27.4
Coleman	10.9	Gonzales	49.4
Collin	18.2	Gray	11.0
Collingsworth	11.0	Grayson	9.4
Colorado	27.4	Gregg	22.8
Comal	47.8	Grimes	27.4
Comanche	10.9	Guadalupe	47.8

County	Goals for Minority Participation	County	Goals for Minority Participation
Hale	19.5	Lavaca	27.4
Hall	11.0	Lee	24.2
Hamilton	18.6	Leon	27.4
Hansford	11.0	Liberty	27.3
Hardeman	11.0	Limestone	18.6
Hardin	22.6	Lipscomb	11.0
Harris	27.3	Live Oak	44.2
Harrison	22.8	Llano	24.2
Hartley	11.0	Loving	18.9

Haskell	10.9	Lubbock	19.6
Hays	24.1	Lynn	19.5
Hemphill	11.0	Madison	27.4
Henderson	22.5	Marion	22.5
Hidalgo	72.8	Martin	18.9
Hill	18.6	Mason	20.0
Hockley	19.5	Matagorda	27.4
Hood	18.2	Maverick	49.4
Hopkins	17.2	McCulloch	20.0
Houston	22.5	McLennan	20.7
Howard	18.9	McMullen	49.4
Hudspeth	49.0	Medina	49.4
Hunt	17.2	Menard	20.0
Hutchinson	11.0	Midland	19.1
Irion	20.0	Milam	18.6
Jack	17.2	Mills	18.6
Jackson	27.4	Mitchell	10.9
Jasper	22.6	Montague	17.2
Jeff Davis	49.0	Montgomery	27.3
Jefferson	22.6	Moore	11.0
Jim Hogg	49.4	Morris	20.2
Jim Wells	44.2	Motley	19.5
Johnson	18.2	Nacogdoches	22.5
Jones	11.6	Navarro	17.2
Karnes	49.4	Newton	22.6
Kaufman	18.2	Nolan	10.9
Kendall	49.4	Nueces	41.7
Kennedy	44.2	Ochiltree	11.0
Kent	10.9	Oldham	11.0
Kerr	49.4	Orange	22.6
Kimble	20.0	Palo Pinto	17.2
King	19.5	Panola	22.5
Kinney	49.4	Parker	18.2
Kleberg	44.2	Parmer	11.0
Knox	10.9	Pecos	18.9
Lamar	20.2	Polk	27.4
Lamb	19.5	Potter	9.3
Lampasas	18.6	Presidio	49.0
LaSalle	49.4	Rains	17.2

County	Goals for Minority Participation	County	Goals for Minority Participation
Randall	9.3	Webb	87.3
Reagan	20.0	Wharton	27.4
Real	49.4	Wheeler	11.0
Red River	20.2	Wichita	12.4
Reeves	18.9	Wilbarger	11.0
Refugio	44.2	Willacy	72.9
Roberts	11.0	Williamson	24.1

Robertson	27.4	Wilson	49.4
Rockwall	18.2	Winkler	18.9
Runnels	20.0	Wise	18.2
Rusk	22.5	Wood	22.5
Sabine	22.6	Yoakum	19.5
San Augustine	22.5	Young	11.0
San Jacinto	27.4	Zapata	49.4
San Patricio	41.7	Zavala	49.4
San Saba	20.0		
Schleicher	20.0		
Scurry	10.9		
Shackelford	10.9		
Shelby	22.5		
Sherman	11.0		
Smith	23.5		
Somervell	17.2		
Starr	72.9		
Stephens	10.9		
Sterling	20.0		
Stonewall	10.9		
Sutton	20.0		
Swisher	11.0		
Tarrant	18.2		
Taylor	11.6		
Terrell	20.0		
Terry	19.5		
Throckmorton	10.9		
Titus	20.2		
Tom Green	19.2		
Travis	24.1		
Trinity	27.4		
Tyler	22.6		
Upshur	22.5		
Upton	18.9		
Uvalde	49.4		
Val Verde	49.4		
Van Zandt	17.2		
Victoria	27.4		
Walker	27.4		
Waller	27.3		
Ward	18.9		
Washington	27.4		

ATTACHMENT 6 TO EXHIBIT E

DEBARMENT AND SUSPENSION CERTIFICATION

1. By signing and submitting its proposal or bid, and by executing the Agreement or Subcontract, each prospective Design-Builder and Contractor (at all tiers) shall be deemed to have signed and delivered the following certification:

The undersigned certifies to the best of its knowledge and belief, that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
- d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective Design-Builder or Contractor is unable to certify to any of the statements in this certification, such Person shall attach a certification to its proposal or bid, or shall submit it with the executed Agreement or Contract, stating that it is unable to provide the certification and explaining the reasons for such inability.

ATTACHMENT 7 TO EXHIBIT E

CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

By signing and submitting its proposal or bid, and by executing the Agreement or Subcontract, each prospective Design-Builder and Contractor (at all tiers) shall be deemed to have signed and delivered the following:

1. The prospective Design-Builder/Contract certifies, to the best of its knowledge and belief, that:
 - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of **ANY** Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with **THIS** Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions, and shall include a copy of said form in its proposal or bid, or submit it with the executed Agreement or Contract.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
3. Design-Builder/Contractor shall require that the language of this certification be included in all lower tier Contracts which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.
4. The undersigned certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the undersigned understands and agrees that the provisions of 31 U.S.C. §3801, et seq., apply to this certification and disclosure, if any.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each expenditure or failure.]

NOTE: DESIGN-BUILDER AND EACH CONTRACTOR IS REQUIRED, PURSUANT TO FEDERAL LAW, TO INCLUDE THE ABOVE LANGUAGE IN CONTRACTS OVER \$100,000 AND TO OBTAIN THIS LOBBYING CERTIFICATE FROM EACH CONTRACTOR BEING PAID \$100,000 OR MORE.

ATTACHMENT 8 TO EXHIBIT E

COMPLIANCE WITH BUY AMERICA REQUIREMENTS

Design-Builder shall comply with the Federal Highway Administration (FHWA) Buy America Requirement in 23 CFR 635.410, which permits FHWA participation in this Agreement only if domestic steel and iron will be used on the Facility. To be considered domestic, all steel and iron used and all products manufactured from steel and iron must be produced in the United States and all manufacturing processes, including application of a coating, for these materials must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied. This requirement does not preclude a minimal use of foreign steel and iron materials, provided the cost of such materials does not exceed 0.1% of the contract price under the Design-Build Contract.

Concurrently with execution of the Agreement, Design-Builder has completed and submitted, or shall complete and submit, to TxDOT a Buy America Certificate, in format below. After submittal, Design-Builder is bound by its original certification. However, in accordance with 49 USC 5323(j)(7), Design-Builder may have the opportunity to correct an inadvertent error in its certification. Design-Builder may correct any certification of noncompliance or failure to properly complete this certification if Design-Builder attests under penalty of perjury that it submitted an incorrect certification as a result of an inadvertent or clerical error. The burden of establishing such inadvertent or clerical error is on Design-Builder. Design-Builder's failure to sign the certification is not considered an inadvertent or clerical error.

A false certification is a criminal act in violation of 18 U.S.C. 1001. Should this Agreement be investigated, Design-Builder has the burden of proof to establish that it is in compliance.

At Design-Builder's request, TxDOT may, but is not obligated to, seek a waiver of Buy America requirements if grounds for the waiver exist. However, Design-Builder certifies that it will comply with the applicable Buy America requirements if a waiver of those requirements is not available or not pursued by TxDOT. A request for a waiver shall be treated as a Change Request under Section 14.2 of the Agreement.

BUY AMERICA CERTIFICATE

Certificate of Compliance

Design-Builder hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(2), and the applicable regulations in 23 CFR 635.410.

Date: _____

Signature: _____

Design-Builder's Name: _____

Title: _____

Or

Certificate for Noncompliance

Design-Builder hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(2), but may qualify for a waiver to the requirement to 49 U.S.C. 5323(j)(2)(B) or (j)(2)(D) and regulations in 23 CFR 635.410.

Date: _____

Signature: _____

Design-Builder's Name: _____

Title: _____

EXHIBIT F

**AMENDMENTS, MODIFICATIONS AND SUPPLEMENTS TO
TXDOT STANDARD SPECIFICATIONS**

None

EXHIBIT G
PAYMENT CURVE

**Form L-2
Payment Curve**

**CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
290 East Toll Project
Request for Detailed Proposals**

Number of Months after NTP	Development Price Monthly Draw Amount	Payment Curve
		Development Price Cumulative Draw Amount
Month 1	\$14,025,138.80	\$14,025,138.80
2	\$13,310,541.86	\$27,335,680.66
3	\$4,507,504.02	\$31,843,184.68
4	\$4,507,504.02	\$36,350,688.69
5	\$4,887,653.66	\$41,238,342.35
6	\$7,691,136.61	\$48,929,478.96
7	\$7,691,136.61	\$56,620,615.57
8	\$7,691,136.61	\$64,311,752.17
9	\$12,830,889.31	\$77,142,641.49
10	\$7,065,016.81	\$84,207,658.30
11	\$7,054,816.81	\$91,262,475.11
12	\$7,054,816.81	\$98,317,291.93
13	\$7,054,816.81	\$105,372,108.74
14	\$7,054,816.81	\$112,426,925.56
15	\$7,054,816.81	\$119,481,742.37
16	\$7,354,816.81	\$126,836,559.18
17	\$7,354,816.81	\$134,191,376.00
18	\$7,054,816.81	\$141,246,192.81
19	\$7,054,816.81	\$148,301,009.63
20	\$7,054,816.81	\$155,355,826.44
21	\$6,944,816.81	\$162,300,643.26
22	\$6,844,816.81	\$169,145,460.07
23	\$5,951,127.46	\$175,096,587.53
24	\$5,951,127.46	\$181,047,714.99
25	\$5,951,127.46	\$186,998,842.45
26	\$5,951,127.46	\$192,949,969.91
27	\$5,140,774.10	\$198,090,744.02
28	\$1,461,193.16	\$199,551,937.17
29	\$1,523,693.16	\$201,075,630.33
30	\$1,881,546.80	\$202,957,177.13
31	\$1,961,546.80	\$204,918,723.93
32	\$1,955,796.80	\$206,874,520.73
33	\$398,338.27	\$207,272,859.00
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Totals	\$207,272,859.00	

EXHIBIT H

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
DBE POLICY STATEMENT

The Central Texas Regional Mobility Authority (“CTRMA”) has established a Disadvantaged Business Enterprise (“DBE”) program in accordance with regulations of the U.S. Department of Transportation (“DOT”), 49 C.F.R. Part 26. The CTRMA has received, or will receive, federal financial assistance from DOT, and as a condition of receiving this assistance, the CTRMA has signed an assurance that it will comply with 49 C.F.R. Part 26.

It is the policy of the CTRMA to ensure that DBEs, as defined in 49 C.F.R. Part 26, have an equal opportunity to receive and participate in DOT-assisted contracts. It is also CTRMA policy:

1. to ensure nondiscrimination in the award and administration of DOT-assisted contracts;
2. to create a level playing field on which DBEs can compete fairly for DOT-assisted contracts;
3. to ensure that the DBE Program is narrowly tailored in accordance with applicable law;
4. to ensure that only firms that fully meet 49 C.F.R. Part 26 eligibility standards are permitted to participate as DBEs;
5. to help remove barriers to the participation of DBEs in DOT-assisted contracts; and
6. to assist the development of firms that can compete successfully in the market place outside the DBE Program.

CTRMA _____, _____, has been designated as the CTRMA DBE Liaison Officer. In that capacity, the _____ is responsible for implementing all aspects of the DBE program. Implementation of the DBE program is accorded the same priority as compliance with all other legal obligations incurred by the CTRMA in its financial assistance agreements with DOT.

The CTRMA has disseminated this policy statement to members of the CTRMA Board of Directors and all of the components of the regional mobility authority. CTRMA has also distributed this statement to DBE and non-DBE business communities that perform work for us on DOT-assisted contracts. Such distribution was undertaken via publication on the CTRMA web site (www.ctrma.org), by publication, and via reference in targeted mailings to DBE businesses in the Central Texas region.

Date

EXHIBIT I
FORM OF PERFORMANCE BOND

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
290 EAST TOLL PROJECT

DESIGN/BUILD CDA AGREEMENT
EXHIBIT I – FORM OF PERFORMANCE BOND

445269v.2 0053071/00008

EXHIBIT I

FORM OF PERFORMANCE BOND

**290 EAST TOLL PROJECT DESIGN/BUILD COMPREHENSIVE
DEVELOPMENT AGREEMENT**

Bond No. _____

KNOW ALL PERSONS BY THESE PRESENTS, that the _____, a _____, as "Principal" and _____, as "Surety" or as "Co-Sureties", each a corporation duly organized under the laws of the State indicated on the attached page, having its principal place of business at the address listed on the attached page, in the State indicated on the attached page, and authorized as a surety in the State of Texas, are hereby jointly and severally held and firmly bound unto the CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY, a political subdivision of the State of Texas, as "Obligee", in the sum of [\$ _____] (the "Bonded Sum"), for the payment whereof Principal and Surety (or Co-Sureties), bind themselves, and their heirs, executors, administrators, representatives, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Obligee, has awarded to Principal, a Design/Build Comprehensive Development Agreement for the 290 East Toll Project, duly executed and delivered as of _____, 2011 (the "Agreement"), on the terms and conditions set forth therein; and

WHEREAS, upon issuance by the Obligee of NTP, Principal is required to furnish a bond guaranteeing the faithful performance of its obligations under the Contract Documents;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if Principal shall promptly and faithfully perform all of its obligations under the Contract Documents, including any and all amendments and supplements thereto, then this obligation shall be null and void; otherwise it shall remain in full force and effect. The Obligee shall release this bond upon the occurrence of all of the conditions set forth in Section 9.2 of the Agreement.

The following terms and conditions shall apply with respect to this bond:

1. The Contract Documents are incorporated by reference herein.
2. This bond specifically guarantees the performance of each and every obligation of Principal under the Contract Documents, as they may be amended and supplemented, including but not limited to, its liability for liquidated damages as specified in the Contract Documents, but not to exceed the Bonded Sum.
3. The guarantees contained herein shall survive the final completion of the design and construction called for in the Contract Documents with respect to those obligations of Principal which

survive such final completion; provided, however, that Principal's warranty obligations shall be guaranteed by a different bond.

4. Whenever Principal shall be, and is declared by the Oblige to be, in default under the Contract Documents and the Oblige has formally terminated the Principal's right to complete the Development Work, provided that the Oblige is not then in material default thereunder, Surety shall promptly take one of the following actions with the consent of the Oblige:

- a. arrange for the Principal to perform and complete the Agreement;
- b. complete the Project in accordance with the terms and conditions of the Contract Documents then in effect, through its agents or through independent contractors;
- c. obtain bids or negotiated proposals from qualified contractors acceptable to the Oblige for a contract for performance and completion of the Development Work, arrange for a contract to be prepared for execution by the Oblige and the contractor selected with the Oblige's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Agreement in an amount that corresponds to the amount of Development Work to be completed, and pay to the Oblige the amount of damages as described in Paragraph 6 in excess of the unpaid balance of the Development Price incurred by the Oblige resulting from the Principal's default; or
- d. waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances, (i) after investigation, determine the amount for which it may be liable to the Oblige and, as soon as practicable after the amount is determined, tender payment therefore to the Oblige, or (ii) deny liability in whole or in part and notify the Oblige citing reasons therefore.

5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Oblige to Surety demanding that Surety perform its obligations under this Bond, and the Oblige shall be entitled to enforce any remedy available to the Oblige. If Surety proceeds as provided in Subparagraph 4.d, and the Oblige refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice the Oblige shall be entitled to enforce any remedy available to the Oblige.

6. After the Oblige has terminated the Principal's right to complete the Agreement, and if Surety elects to act under Subparagraph 4.a, 4.b, or 4.c above, then the responsibilities of Surety to the Oblige shall not be greater than those of the Principal under the Agreement, and the responsibilities of the Oblige to Surety shall not be greater than those of the Oblige under the Agreement. To the limit of the Bonded Sum, but subject to commitment by the Oblige of the unpaid balance of the Development Price to mitigation costs and damages on the Agreement, Surety is obligated without duplication for:

- a. the responsibilities of the Principal for correction of defective work and completion of the Development Work;

b. additional legal, design professional and delay costs resulting from Principal's default, and resulting from the actions or failure to act of Surety under Paragraph 4; and

c. Liquidated Damages under the Agreement.

7. No alteration, modification or supplement to the Contract Documents or the nature of the work to be performed thereunder, including without limitation any extension of time for performance, shall in any way affect the obligations of Surety under this bond, provided that the aggregate dollar amount of CTRMA-Directed Changes, without Surety's prior written consent thereto having been obtained, does not increase the Development Price by more than \$_____ [10% of the Contract Price]. Surety waives notice of any alteration, modification, supplement or extension of time other than Change Orders for CTRMA-Directed Changes in excess of such amount.

8. * If Obligee fails to notify Surety of its intent to enforce Surety's obligations hereunder within 730 days after an Event of Default under the Contract Documents and a formal termination of Principal's right to complete the Development Work, then this Performance Bond shall be null and void and Surety shall be released from any further obligations hereunder.

9. Correspondence or claims relating to this bond should be sent to Surety at the following address:

10. No right of action shall accrue on this bond to or for the use of any entity other than the Obligee or its successors and assigns.

11. If any legal action be filed on this bond, venue shall be in Travis County, Texas.

12. This bond is executed in accordance with the provisions of Chapter 2253 of the Texas Government Code, as amended.

13. Initially capitalized terms not otherwise defined herein shall have the definition set forth in Exhibit A of the Agreement.

IN WITNESS WHEREOF, Principal and Surety have caused this bond to be executed and delivered as of _____, 2011.

Principal:

By: _____
Its: _____
(Seal)

Surety:

By: _____
Its: _____

(Seal)

[ADD APPROPRIATE SURETY ACKNOWLEDGMENTS]

EXHIBIT J
FORM OF PAYMENT BOND

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
290 EAST TOLL PROJECT

DESIGN /BUILD CDA AGREEMENT
EXHIBIT J

445311v.1 0053071/00008

EXHIBIT J

FORM OF PAYMENT BOND

290 EAST TOLL PROJECT DESIGN/BUILD COMPREHENSIVE DEVELOPMENT AGREEMENT

Bond No. _____

KNOW ALL PERSONS BY THESE PRESENTS, that the _____, a _____, as "Principal" and _____, as "Surety" or as "Co-Sureties", each a corporation duly organized under the laws of the State indicated on the attached page, having its principal place of business at the address listed on the attached page, in the State indicated on the attached page, and authorized as a surety in the State of Texas, are hereby jointly and severally held and firmly bound unto the CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY, a political subdivision of the State of Texas, as "Obligee", in the sum of [\$ _____], (the "Bonded Sum"), for the payment whereof Principal and Surety or Co-Sureties, bind themselves, and their heirs, executors, administrators, representatives, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Obligee, has awarded to Principal, a Design/Build Comprehensive Development Agreement for the 290 East Toll Project, duly executed and delivered as of _____, 2011 (the "Agreement"), on the terms and conditions set forth therein; and

WHEREAS, upon issuance by Obligee of NTP, Principal is required to furnish a bond guaranteeing payment of claims, subcontractors, suppliers, materialmen and mechanics.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if Principal shall fail to pay any valid and timely claims of subcontractors, suppliers, materialmen and mechanics with respect to the Development Work, then Surety shall pay for the same in an amount not to exceed, in the aggregate, the Bonded Sum; otherwise this obligation shall be null and void upon the latest to occur of any of the events set forth in Section 9.3 of the Agreement.

The following terms and conditions shall apply with respect to this bond:

1. The Contract Documents are incorporated by reference herein.
2. No alteration, modification or supplement to the Contract Documents or the nature of the work to be performed thereunder, including without limitation any extension of time for performance, shall in any way affect the obligations of Surety under this bond, provided that the aggregate dollar amount of CTRMA-Directed Changes without Surety's prior written consent thereto having been obtained, does not increase the Development Price by more than

\$ _____ [10% of the Development Price]. Surety waives notice of any alteration, modification, supplement or extension of time other than Change Orders for CTRMA-Directed Changes in excess of such amount.

3. Correspondence or claims relating to this bond should be sent to Surety at the following address:

4. This bond shall inure to the benefit of the persons identified above so as to give a right of action to such persons and their assigns in any suit brought upon this bond.

5. To the extent permitted by law, the only permitted claimants under this Bond shall be those entities having a contract with Principal and those entities having a contract with an entity which has a contract with Principal.

6. If any legal action be filed on this bond, venue shall be in Travis County, Texas.

7. This bond is executed in accordance with the provisions of Chapter 2253 of the Texas Government Code, as amended.

8. Initially capitalized terms not otherwise defined herein shall have the definition set forth in Exhibit A of the Agreement.

IN WITNESS WHEREOF, Principal and Surety have caused this bond to be executed and delivered as of _____, 2011.

Principal:

By: _____
Its: _____
(Seal)

Surety:

By: _____
Its: _____
(Seal)

[ADD APPROPRIATE SURETY ACKNOWLEDGMENTS]

EXHIBIT K
FORM OF WARRANTY BOND

Addendum No. 2

January 25, 2011

EXHIBIT K

FORM OF WARRANTY BOND

Bond No. _____

KNOW ALL PERSONS BY THESE PRESENTS, that the _____, a _____, as “Principal” and _____, as “Surety” or as “Co-Sureties”, each a corporation duly organized under the laws of the State indicated on the attached page, having its principal place of business at the address listed on the attached page, in the State indicated on the attached page, and authorized as a surety in the State of Texas, are hereby jointly and severally held and firmly bound unto the CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY, a political subdivision of the State of Texas, as “Obligee”, in the sum of \$20,000,000 (the “Bonded Sum”), for the payment whereof Principal and Surety (or Co-Sureties), bind themselves, and their heirs, executors, administrators, representatives, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Obligee, has awarded to Principal, a Design/Build Comprehensive Development Agreement for the 290 East Toll Project, dated _____, 2011 (the “Agreement”), on the terms and conditions set forth therein; and

WHEREAS, Principal is required to furnish a bond guaranteeing the faithful performance of its warranty obligations under the Contract Documents after Final Acceptance, including payment of claims, subcontractors, suppliers, materialmen and mechanics, as a condition to release of the Performance Bond and Payment Bond with respect to the Project by Obligee.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if Principal shall promptly and faithfully perform all of its warranty obligations under the Contract Documents, as they may be amended or supplemented, including without limitation the fulfillment of all Warranties, environmental monitoring and landscaping obligations, and payment of claims, subcontractors, suppliers, materialmen and mechanics, then this obligation shall be null and void; otherwise this obligation shall remain in full force and effect, it being expressly understood and agreed that the liability of Surety for any and all claims hereunder shall in no event exceed the Bonded Sum.

The following terms and conditions shall apply with respect to this bond:

1. The Contract Documents are incorporated by reference herein.

2. Surety's obligations under this Bond shall include the Principal's obligation to pay its subcontractors, suppliers, materialmen and mechanics for warranty-related work or supplies.

3. The guarantees contained herein shall survive the final completion of the design and construction called for in the Contract Documents.

4. Whenever Principal shall fail to pay the lawful claims of any of the persons identified in item 2 above with respect to the Development Work (which for purposes of this bond shall include all warranty work required to be performed pursuant to the Contract Documents), excluding Major Participants having an equity interest in Principal, then Surety shall pay for the same in an amount not to exceed the Bonded Sum.

5. Whenever Principal shall be, and is declared by the Obligee to be, in default with respect to its warranty obligations under the Contract Documents, provided that the Obligee is not then in material default thereunder, Surety shall promptly take one of the following actions with the consent of the Obligee:

a. arrange for Principal to perform and complete the warranty obligations of this Agreement;

b. complete the warranty-related work in accordance with the terms and conditions of the Contract Documents then in effect, through its agents or through independent contractors;

c. obtain bids or negotiated proposals from qualified contractors acceptable to the Obligee for a contract for performance and completion of the warranty-related work (as defined in the Agreement), through a procurement process approved by the Obligee, arrange for a contract to be prepared for execution by the Obligee and the contractor selected with the Obligee's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Agreement; or

d. waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances, (i) after investigation, determine the amount for which it may be liable to the Obligee and, as soon as practicable after the amount is determined, tender payment therefore to the Obligee, or (ii) deny liability in whole or in part and notify the Obligee citing reasons therefore.

6. If Surety does not proceed as provided in Paragraph 5 with reasonable promptness, Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Obligee to Surety demanding that Surety perform its obligations under this Bond, and the Obligee shall be entitled to enforce any remedy available to the Obligee. If Surety proceeds as provided in Subparagraph 5.d, and the Obligee refuses the

payment tendered or Surety has denied liability, in whole or in part, without further notice the Oblige shall be entitled to enforce any remedy available to the Oblige.

7. After the Oblige has terminated the Principal's right to complete the Agreement, and if Surety elects to act under Subparagraph 5.a, 5.b, or 5.c above, then the responsibilities of Surety to the Oblige shall not be greater than those of the Principal under the Agreement, and the responsibilities of the Oblige to Surety shall not be greater than those of the Oblige under the Agreement. To the limit of the Bonded Sum, but subject to commitment of the unpaid balance of the Development Price to mitigation costs and damages on the Agreement, Surety is obligated without duplication for:

- a. the responsibilities of the Principal for correction of defective work;
- b. actual damages, including additional legal, design professional and delay costs resulting from Principal's default, and resulting from the actions or failure to act of Surety under Paragraph 5; and
- c. Liquidated Damages under the Agreement.

8. No alteration, modification or supplement to the Warranty provisions of the Contract Documents or the nature of the work to be performed thereunder, including without limitation any extension of time for performance, shall in any way affect the obligations of Surety under this bond. Surety waives notice of any alteration, modification, supplement or extension of time.

9. Initially capitalized terms not otherwise defined herein shall have the definitions set forth in Exhibit A of the Agreement.

10. If any legal action be filed on this bond, venue shall be in Travis County, Texas.

IN WITNESS WHEREOF, Principal and Surety have caused this bond to be executed and delivered as of _____, 20__.

Principal: _____

By: _____

Its: _____

(Seal)

Surety:

By: _____

Its: _____

(Seal)

[ADD APPROPRIATE ACKNOWLEDGMENTS]

EXHIBIT L
DRAW REQUEST AND CERTIFICATES

Draw Request # _____

Date: _____
month/day/year

Central Texas Regional Mobility Authority
301 Congress Ave., Suite 650
Austin, Texas 78701

Draw Request for Design-Build Work performed for the period: _____ to _____
month/day/year month/day/year

- A. Original Contract Amount
- B. Approved Change Order Amounts
- C. Revised Contract Amount
- D. Cumulative Amount Earned to Date
- E. Cumulative Amount of Previous Draw Requests
- F. Amount Qualified for Payment this Period (D-E)

Printed Name
D/B CDA Developer's Project Manager

Signature

month/day/year

Printed Name
CTRMA Project Engineer

Signature

month/day/year

Printed Name
Central Texas Regional
Mobility Authority

Signature

month/day/year

290 East Toll Project

[DB Name]

Draw Request Number []

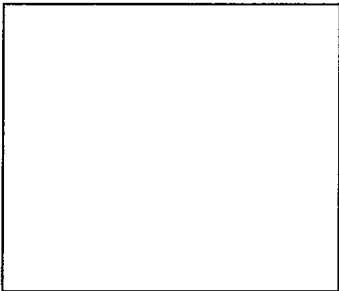
For the Period Ending [Date]

Design Quality Assurance Manager Certification

I hereby certify that;

- Except as specifically noted in this certification, all Work, including that of Subcontractors, Suppliers, and fabricators, which is the subject of the Draw Request has been checked and/or inspected by the Design Quality Control Team;
- Except as specifically noted in this certification, all Work which is the subject of the Draw Request conforms to the requirements of the Contract Documents, the Government Approvals and applicable Law;
- The Design QMP and all of the measures and procedures provided therein are functioning properly and are being followed in all respects; and
- The design percentages and costs indicated are accurate and correct.

Signature: _____ Date: _____
 Design Quality Assurance Manager



Print: _____

Certification Exceptions:

290 East Toll Project

[DB Name]

Draw Request Number []

For the Period Ending [Date]

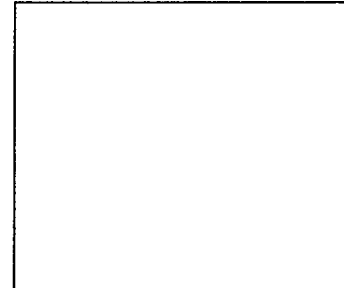
Construction Quality Control Manager Certification

I hereby certify that;

- Except as specifically noted in this certification, all Work, including that of Subcontractors, Suppliers, and fabricators, which is the subject of the Draw Request has been checked and/or inspected by the Construction Quality Control Team;
- Except as specifically noted in this certification, all Work which is the subject of the Draw Request conforms to the requirements of the Contract Documents, the Government Approvals and applicable Law;
- The Construction QMP and all of the measures and procedures provided therein are functioning properly and are being followed in all respects; and
- The construction percentages and costs indicated are accurate and correct.

Signature: _____ Date: _____
Construction Quality Control Manager

Print: _____



Certification Exceptions:

EXHIBIT M
FORM OF CHANGE ORDER FORM

CHANGE ORDER PROPOSAL NO. _____ CONTRACT NO. _____

SECTION I

Originator:

Date:

Title:

Contract No:

Company Name:

DESCRIPTION:

Scope:

CAUSE OF CHANGE ORDER REQUEST:

Design-Build Project Manager Date

CHANGE ORDER REQUEST

CHANGE ORDER PROPOSAL NO. _____ CONTRACT NO. _____

SECTION II

The total amount of this Change Order is \$ _____. Documentation supporting the Change Order is attached as Exhibits _____ through _____.

Payment Schedule Items Added/Deducted:

<u>Activity No.</u>	<u>Description</u>	<u>Amount</u>
_____	_____	_____

Summary of Change Order Proposal by Categories: [Additives/(Credits)]

A.	Design-Builder Labor (construction)	
	1. Wages	\$ _____
	2. Labor benefits (55%)	\$ _____
B.	Design-Builder and Subcontractor Labor (professional services)	
	1. Wages (Raw)	\$ _____
	2. Labor benefits (145%, which includes overhead and profit)	\$ _____
	3. Off-duty peace officers and patrol cruisers	\$ _____
C.	Materials (with taxes, freight and discounts)	\$ _____
D.	Equipment	\$ _____
E.	Subcontracts (Time and Materials cost)	\$ _____
F.	Utility Direct Costs	\$ _____
G.	Overhead and Profit	
	1. Labor (25%)	\$ _____
	2. Materials (15%)	\$ _____
	3. Subcontracts (5%)	\$ _____
	4. Utility Direct Costs (5)	\$ _____
H.	Grand Total	\$ _____

**CHANGE ORDER
REQUEST**

CHANGE ORDER PROPOSAL NO. _____ **CONTRACT NO.** _____

SECTION III

The status of Substantial Completion is as follows:

- Unaffected by this Change Order Proposal
- Affected by (increasing) (decreasing) the scheduled date for achieving Substantial Completion by _____ calendar days.
- Affected by (increasing) (decreasing) the _____ Float by _____ calendar days.

The status of Final Acceptance is as follows:

- Unaffected by this Change Order Proposal
- Affected by (increasing) (decreasing) the scheduled date for achieving Final Acceptance by _____ calendar days.
- Affected by (increasing) (decreasing) the _____ Float by _____ calendar days.

Accordingly, the summary of the dates of Substantial Completion and Final Acceptance and Float are as follows:

1. Substantial Completion: _____
(+ or - _____ days from base of NTP)
2. Final Acceptance: _____
(+ or - _____ days from base of NTP)
3. Number of days of Project Float _____

Justification for Change Order with reference to Contract Documents:

The above three sections represent a true and complete summary of all aspects of this change.

This Change Order Proposal includes all known and anticipated impacts or amounts, direct, indirect and consequential, which may be incurred as a result of the event, occurrence or matter giving rise to the proposed change.

**CHANGE ORDER
REQUEST**

CHANGE ORDER PROPOSAL NO. _____ **CONTRACT NO.** _____

If the foregoing Change Order Proposal includes claims of Subcontractors or Suppliers, the undersigned have reviewed such claims and have determined in good faith that the claims are justified as to both entitlement and amount.

D/B CDA Developer Project Manager

Date

**CHANGE ORDER
REQUEST**

CHANGE ORDER PROPOSAL NO. _____ **CONTRACT NO.** _____

SECTION IV (Reviewed by CTRMA Project Engineer)

CTRMA Project Engineer

Date

Comments:

**CHANGE ORDER
REQUEST**

CHANGE ORDER PROPOSAL NO. _____ CONTRACT NO. _____

SECTION V (Reviewed by TxDOT Representative)

Date

TxDOT Representative

Comments:

**CHANGE ORDER
REQUEST**

CHANGE ORDER PROPOSAL NO. _____ CONTRACT NO. _____

SECTION VII (Approval by CTRMA)

CHANGE ORDER ISSUED: Yes No

Date _____ CTRMA Executive Director _____

Comments:

EXHIBIT N

**INITIAL DESIGNATION OF
AUTHORIZED REPRESENTATIVES**

D/B CDA Developer:

Central Texas Regional Mobility Constructors, LLC
14333 Chrisman Road
Attention: Lawrence G. Hurley
Phone: 281-987-8787
Fax: 281-449-6658
e-mail:

CTRMA:

Central Texas Regional Mobility Authority
301 Congress Ave.
Suite 650
Austin, Texas 78701
Attention: Wes Burford
Phone: 512-996-9778
Fax: 512-996-9784
e-mail: wburford@ntta.org

EXHIBIT O

TO DESIGN/BUILD COMPREHENSIVE DEVELOPMENT AGREEMENT

D/B CDA DEVELOPER COMMITMENTS

To the extent provided in Section 1.2.1 of the Agreement, the CENTRAL TEXAS MOBILITY CONSTRUCTORS Proposal shall be considered a part of this Agreement. The following items identify the CTRMA's understanding of some specific commitments or clarify important aspects in the Project development.

A. Approved Alternative Technical Concepts and Value Added Concepts.

The following is a list of the ATCs that CENTRAL TEXAS MOBILITY CONSTRUCTORS ("D/B CDA Developer") indicated it was going to incorporate into the Development Work and VACs that CTRMA hereby requests to be incorporated into the Development Work. A description of each such ATC and VAC is attached to this Exhibit O and incorporated herein. The CTRMA reserves the right to reject any ATC listed below that (a) does not satisfy CTRMA's written conditions of pre-approval, if any; (b) is materially different from the ATC pre-approved by the CTRMA; or (c) requires design exceptions from FHWA and TxDOT which were not clearly identified and approved during the ATC pre-approval process and which FHWA and TxDOT will not approve. In the event the CTRMA rejects an ATC for any of the above reasons, D/B CDA Developer agrees that it will design and construct the Project in accordance with requirements of the Contract Documents, without an adjustment in Development Price or Completion Dates; provided, however, that D/B CDA Developer may challenge CTRMA's determination in accordance with the dispute resolution provisions of the Agreement. In the event the Disputes Resolution Board determines that the CTRMA has wrongly rejected an ATC, D/B CDA Developer shall be entitled to a Change Order to increase the Development Price and/or extend the Completion Deadline.

ATC – 2: Shared Use Path Pavement revisions; subject to the conditions sent by the CTRMA through letter correspondence dated November 19, 2010.


VAC – 1: Install corrugated plastic pipe or sonovoid tubing at potential future abutment shaft locations and identify their locations from above with a marker in the riprap. Wall straps will be located away from the pipes to avoid damage to straps during installation of future drilled shafts. The exact number, size, and location of corrugated plastic pipe or sonovoid tubing will be based on Final Design calculations as approved by the CTRMA.

B. Additional Commitments From Technical Proposal.

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
290E PROJECT

DESIGN/BUILD COMPREHENSIVE DEVELOPMENT AGREEMENT
EXHIBIT O - D/B CDA DEVELOPER COMMITMENTS

1. (PMP A.1.b page 8) CTMC will collocate D/B management team in a project office located one mile from the jobsite.
2. (PMP A.2.b. page 9) Weekly Task Force Meetings will be held at the Project Office generally as shown in the figure below, with such changes as are agreed to by CTRMA and CTMC. Attendees will include design, construction, quality, CTRMA representatives, and other stakeholders. With the exception of the Tuesday morning Interim Milestone meeting, all other TFM's will remain for the duration of the project.

TASK FORCE MEETINGS - DESIGN AND CONSTRUCTION					
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8am					
9am		Interim Milestone (1)	Roadway (1)	Electrical (1)	
10am					
11am		Geotechnical (1)	Environmental (1)	Pavement (1)	
12pm					
1pm					
2pm		Utilities (1,2,3,4,5)	Bridges (1)	Client Coordination (1)	
3pm	DB Senior Staff Coordination Meeting (1)	Drainage (1,4)	Walls (1)		
4pm					
5pm					
STAKEHOLDERS					
	1	2	3	4	5
		City of Austin	Utility Companies	TxDOT Austin District	FHWA

3. (PMP B.1.a. page 10) CTMC will use the professional services of an independent Construction Quality Control firm, Raba-Kistner, reporting directly to D/B PM and the CTMC JV Board, that does not have a vested interest in profit or loss associated with the construction process.
4. (PMP B.1.d page 11) Provided that NTP is issued on or prior to June 1, 2011 CTMC will complete the entire six-lane toll road and the three-lane eastbound frontage road to east of Springdale Road within the Interim Milestone along with the permanent ramp toll gantries and one temporary eastbound mainlane toll gantry. If NTP is issued after June 1, 2011 CTMC will use its best efforts to complete the entire six-lane toll road and three-lane frontage roads as described in the previous sentence, but shall not be contractually obligated to complete any Development Work in addition to the minimum required by the Contract Documents for Interim Completion of the Interim Development Work by the Interim Completion Deadline.
5. (PMP B.1.i. page 13) CTMC will minimize impacts to local businesses and schools by implementing:
 - Incentive programs, such as discount cards, to encourage customers to visit local businesses;
 - Coordination with school administrators for Manor New Tech High School to address safe ingress and egress to school facilities during construction.

The specifics of implementation shall be determined following discussions between CTRMA and CTMC concerning best means to achieve intended goals.

6. (PMP C.4. page 18) QC staff will document inspections and tests daily for entry into Raba-Kistner's Electronic Laboratory Validation System (ELVIS) and transmittal to CTMC and CTRMA. The draft CQMP contains QC Inspection Reports and procedures for documenting inspection, testing, and certification of materials. ELVIS will be used as the management/document control system to provide QC inspection and testing information to CTMC and CTRMA for complete awareness of project progress.
7. (PMP C.7. page 18) CTMC will commit the necessary manpower to implement our design and construction quality plans. Formal QC/QA activities will be performed by fully staffed, discipline specific teams led by Baker and Raba-Kistner and will include resources from subconsultants. The DQCM, Design Manager, and discipline specific Design QC/QA Engineers and Senior Design Engineers will be on-site at the collocated Project Office as necessary to meet with CTRMA and perform design submittal reviews. CQM personnel will be on-site for the duration of construction. CTMC will utilize up to 5 FTEs to perform Design QC/QA and 15 FTEs to perform CQC.
8. (PMP D.2 page 19) As the managing partner of CTMC, Webber has the resources within Texas to staff this project by leveraging their construction management and staff from Austin, Houston, Dallas, and San Antonio, and will not take staff from ongoing construction with CTRMA to execute the construction on 290E; provided CTMC shall be entitled to utilize employees currently assigned to the 290E/183 interchange project as their tasks are completed and they are available for transition from such project.
9. (PMP E. Summary. page 20) CTMC will initiate utility coordination with the numerous utility owners upon NOA to enable utility adjustments to begin as soon as possible following NTP.
10. (PMP H.5.b page 30) CTMC will monitor adjacent roads for any effects of construction activities. Supervisors within the crews will maintain, correct, and ensure the protection of adjacent roadways and properties. Any damage caused specifically by CTMC construction activities will be repaired.
11. (PMP J.3 page 32) CTMC will offer various fixed duration, award-based safety incentive programs which include subcontractors.
12. (DP E.2 page 43) CTMC has designed the drainage structures such that there will be no rise in the 100 year water surface elevations. CTMC's drainage design will be completed in accordance with CTRMA's Technical Provisions included with the RFDP and meet TxDOT, FHWA, FEMA, TCEQ, CTRMA, City of Austin, and other Federal, State, and local regulations.

13. (DP H.1.c. page 48)CTMC's design includes the use of Tx70 I-girders with spans arranged to align new piers with existing frontage road piers in the median of SH130. This will ensure visual compatibility with existing structures in the interchange. End span piers will be located a sufficient distance behind existing SH130 Mechanically Stabilized Earth (MSE) walls to minimize interference with wall reinforcement straps.
14. (DP I.1. page 49)CTMC will construct embankments as early as is practicable and monitor settlement to determine when sufficient embankment settlement has occurred to permit the start of pavement construction. CTMC will:
 - Estimate anticipated total settlement and rate of settlement during the geotechnical investigation before start of construction;
 - Install wick drains to accelerate settlements if it is determined that project schedule will not allow sufficient settlement to occur;
 - Crown the fill to minimize the infiltration of surface water in the event of rainfall at the end of each day during fill placement. Heaving can occur if water infiltrates the underlying expansive soil;
 - Compact cohesive soils to moisture contents that are wet of optimum moisture content to reduce the potential for heaving;
 - Proof roll the exposed subgrade prior to placement of fill, to detect soft areas;
 - Remove and replace soft materials with properly compacted soils; and
 - Establish the cause where heave or settlement occurs by reviewing our construction records and removing and replacing the impacted area.
15. (DP I.2. page 50)CTMC's approach to sulfate mitigation is:
 - Map the limits and concentration of sulfates in the project area by drilling shallow soil borings and performing tests that detect the presence and concentration of sulfates. The results of the investigation will be used to plan cut/fill operations and to evaluate options for disposal and/or stabilization of excavated soils. Borrow sites will also be screened for sulfates.
 - Develop and implement a sulfate management protocol throughout the project.
16. (DP L.2. page 52)For each phase of the Maintenance of Traffic Plan (MOT), we will develop a traffic model to analyze impacted intersections/routes and re-time traffic signals to improve traffic flow during construction. The model will include the entire corridor and nearby signalized intersections. Traffic models will be calibrated to reflect the actual/anticipated field conditions. The results of the modeling will be presented to the MOT Task Force.
17. (DP L.4. page 53) A traffic signal service technician will be provided who will be available days, nights, and weekends for trouble calls.
18. (DP M.3. page 54) The TCE will be available 24 hours a day with the ability to respond on site within 30 minutes. The TCE will coordinate with special events such as University of Texas

football games or any of the many events held at the nearby Travis County Expo Center to ensure that patrons easily find their way through construction areas to special events.

19. (DP R.1. page 59) CTMC proposes using Warm Mix Asphalt as a VAC at no additional cost.
20. (DP R.1. page 59) CTMC is dedicated to coordinating with CTRMA to devise an outreach program to increase public awareness of 290E's sustainability practices and activities by:
 - Instituting a Public Educational Outreach Program that will span all phases of project development;
 - Developing a technical presentation to be used at professional society meetings, rotary club meetings, neighborhood meetings, and other forums;
 - Providing data for the 290E website to keep the general public informed of on-going project sustainability initiatives; and
 - Installing temporary project signage along the 290E corridor alerting motorists of the upcoming improvements and highlighting sustainable initiatives planned for the corridor such as the use of recycled asphalt pavement (RAP), recycled asphalt shingles (RAS), solar-powered roadside signage and devices, and low impact development practices.