Texas Department of Transportation
Book 2 - Technical Provisions

Grand Parkway Project

Attachment 2-1
Project Management Plan Contents

Attachment 2-1 – Project Management Plan Contents

The Project Management Plan Contents and Schedule for provision of the component parts.

Legend:
A = Submitted by Developer within 30 days of NTP 1 and approved by TxDOT prior to Commencement of Design and issuance of NTP 2
B = Submitted by Developer within 90 days of NTP 1 and approved by TxDOT prior to Commencement of Construction

Part	Ref	Section	Contents	Required by
1. Project Administration				
	1.1	Organization	Orginazation diagram	A
	1.2	Personnel	Names and contract details, titles, and job roles	A
	1.3	Contractors	Procedures to establish how the Developer will manage Contractors	A
	1.4	Schedule	Project Baseline Schedule in accordance with the Technical Provision Section 2	A
	1.5	Quality Control	Procedures to establish and encourage continuous improvement	A
	1.6	Audit	Procedures to facilitate review and audit by TxDOT and/or the Independent Reviewers	A
			Auditing and management review of Developer's own activities under the PMP	A
			Auditing and management review of Contractor's activities and management procedures	A
	1.7	PMP Update	Procedures for preparation of amendments and submission of amendments to any part of the PMP	A
	1.8	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems Developer will use.	A
			Document management procedures in compliance with the Technical Provisions Section 2.	A
			Procedures for documenting all required Plans not specifically stated in this attachment, including but not limited to: Aesthetics and Landscaping Plan, ITS Implementation Plan, Haul Route Plan, Maintenance Management Plan (MMP), Emergency Response Plan, etc	
2. Quality Management Plan				
2A. Design Quality Management				
	2A.1	Organization	Developer's main contractural arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents	A
	2A.2	Personnel	Resource Plan for the Developer and its subcontractors	A

2. Quality Management Plan				
2A. Design Quality Management				
	2A.2	Personnel	Arrangements for coordinating and managing staff interaction with TxDOT and its consultants including collocation of Key Personnel and description of approach to coordinating work of off-site personnel	A
			Names and contact details, titles, job roles and specific experience required for the Key Personnel and for other principal personnel during the period of Design Work	A
			Names and contact details, titles, job roles and specific experience required for the principal personnel for Contractors and any third party with which Developer will coordinate activities.	A
	2A.3	Offices and equipment	Description of the necessary offices and office equipment to be provided by Developer during the period of Design Work	A
	2A.4	Contractors	Overall control procedures for Contractors, including consultants and Subconsultants	A
			Responsibility of Contractors and Affiliates	A
			Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts	A
	2A.5	Interfaces	Interfacing between the Developer, Contractors and the Independent certifiers during the period of Design Work	A
			Coordination with Utility Owners	A
	2A.6	Environmental	Integration of the interface between environmental requirements (including landscaping) and the design of the Project	A
	2A.7	Procedures	Procedures describing how the principal activities will be performed during the design stage: to include geotechnical site investigation, surveys and mapping, environmental management, safety audit, structural audit, and checking	A
	2A.8	Quality Control	Quality Management Plan (QMP), including control procedures including a resource table for monitoring and auditing all design services, design review and certification, and verification of plans	A
			Procedures for environmental compliance	A
			Procedures to establish Developer's hold points in the design process at which checking and review will take place	A
			Procedures to ensure accuracy, completion, and quality in submittals to TxDOT, Governmental Entities and other third parties.	A
			Procedures to establish and encourage continuous improvement	A
	2A.9	Audit	Name of Developer's representative(s) with defined authority for establishing, maintaining, auditing and reporting on the PMP	A
			Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority	A
	2A.10	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems Developer will use	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
			Identify environmental documentation and reporting requirements, including Environmental Permits, Issues and Commitments (EPIC) sheets	A

2B. Construction Quality Management				
	2B.1	Organization	Developer's main contractual arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents	A
	2B.2	Personnel	Resource Plan for the Developer and its Contractors	B
			Arrangements for coordinating and managing staff interaction with TxDOT and its consultants including collocation of Key Personnel and description of approach to coordinating work of off-site personnel	B
			Names and contact details, titles, job roles and specific experience required for the Key Personnel as related to construction	A
			Names and contact details, titles, job roles of principal personnel for Contractors and any third party with which Developer will coordinate his activities	B
			Procedures for implementation of the Environmental Protection Training Plan (EPTP) for all employees in accordance with the Technical Provisions Section 4	B
	2B.3	Offices and equipment	Description of the necessary offices and office equipment to be provided by Developer during construction	A
	2B.4	Contractors	Overall control procedures for Contractors, including consultants and subconsultants	B
			Responsibility of Contractors and affiliates	B
			Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts	B
			Procedures for implementation of Environmental Protection Training Plan (EPTP) for employees of subcontractors in accordance with the Technical Provisions Section 4	B
	2B.5	Interfaces	Interfacing between the Developer, Contractors, including any testing contractor, and the Independent verifiers during construction	A
	2B.6	Procedures	List of Project specific construction procedures	B
			Construction detailed procedure for each major activity whether directly undertaken or subcontracted to include pavement, structures, drainage, communications	B
			Traffic Management Plan	B
	2B.7	Quality Control/ Quality Assurance	Construction Quality Management Plan (CQMP)	B
			Integration of component parts of the Comprehensive Environmental Protection Program (CEPP) into construction quality management	B
			Control, identification and traceability of materials, including any material or samples temporarily or otherwise removed from site for testing or other reasons.	B
			Examinations and audit of Construction Work, review of examination and audit, issue of certificates	B
			Observation and reporting of all tests in compliance with the Technical Provisions Section 2	B
			Procedures for tests and inspections for the purpose of the Contractor certifying that prior to burying, each part of the Works is complete and conforms to the Contract Documents	B
			Quality control procedures including a resource table for monitoring and auditing during construction any work and testing undertaken by Contractors and Suppliers both on and off Site	B

2B. Construction Quality Management (continued)				
	2B.7	Quality Control	Procedures to establish Developer's hold points in construction	B
			Procedures to ensure accuracy, completion, and quality in submittals to TxDOT, Governmental Entities and other third parties	B
			Procedures to establish and encourage continuous improvement	A
	2B.8	Audit	Inspection and test plans that identify the proforma and/or databases to be used for recording the inspection and test results and a methodology for transmitting acceptance testing and inspection reports to TxDOT	B
			Name of Developer's representative with defined authority for establishing, maintaining, auditing and reporting on the PMP	A
			Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority.	B
	2B.9	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems Developer will use	B
			Document management procedures in compliance with the Technical Provisions Section 2	A
2C. Maintenance Management				
	2C.1	Procedures	Procedures describing how the principal activities will be performed during the maintenance period including the general maintenance and operations obligations	A
			Procedures for managing records of inspection and maintenance activities	A
			Procedures setting out Developer's response to maintenance issues such as mitigation of hazards, and defects that require prompt attention or are a safety concern	A
	2C.2	Performance Standards	Procedures to be followed by Developer pursuant to the Technical Provisions to comply with all applicable maintenance requirements for the term of the Agreement	A
	2C.3	Emergency Response	Procedures setting out how Developer will respond to accidents and incidents on the Project	A
3. Comprehensive Environmental Protection Program (CEPP)				
	3.1	Organization	Developer's main contractural arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents	A
			Environmental Contact Tree	A
	3.2	Personnel	Resource Plan for the Developer and its Contractors	B
			Arrangements for coordinating and managing staff interaction with TxDOT and its consultants, including collocation of Key Personnel and description of approach to coordinating work of off-site personnel	A
			Names and contact details, titles, job roles and specific experience required for Key Personnel and for other environmental personnel	A
			Implement Environmental Protection Training Plan (EPTP) for all employees in accordance with the Technical Provisions Section 4	A

3. Comprehensive Environmental Protection Plan (continued)				
	3.3	Contractors	Overall control procedures for Contractors, including consultants and subconsultants	A
			Responsibility of Contractors and Affiliates	A
			Implement Environmental Protection Training Plan (EPTP) for employees of Contractors in accordance with the Technical Provisions Section 4	
	3.4	Environmental	Establishment of the component parts of the Environmental Compliance Mitigation Program (ECMP)	B
	3.5	Quality Control	Procedures to ensure accuracy, completion, and quality in submittals to TxDOT, Governmental Entities and other third parties	A
			Procedures to establish and encourage continuous improvement	A
			Procedures for environmental compliance	A
	3.6	Audit	Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority	B
	3.7	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems Developer will use	A
			Identify environmental documentation and reporting requirements	A
4. Public Information and Communications				
	4.1	Organization	Developer's main contractural arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents.	A
	4.2	Personnel	Resource Plan for the Developer and its Contractors	A
			Arrangements for coordinating and managing staff interaction with TxDOT and its consultants, including colocation of Key Personnel and description of approach to coordinating work of off-site personnel	A
			Names and contact details, titles, job roles and specific experience required for Key Personnel and for other principal personnel	A
			Names and contact details, titles, job roles of principal personnel for Contractors and any third party with which Developer will coordinate his activities	A
	4.3	Offices and equipment	Description of the necessary offices and office equipment to be provided by Developer during design	A
	4.4	Contractors	Overall control procedures for Contractors, including consultants and subconsultants	A
			Responsibility of Contractors and Affiliates	A
			Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts	A
			Procedures for implementation of EPTP for employees of Contractors	A

4. Public Information and Communications (continued)				
	4.5	Interfaces	Procedures for liaison with the public, the media and other Customer Groups in accordance with the Technical Provisions Section 3 and the press media policy of TxDOT	A
			Procedures to coordinate with Project Stakeholders such as Governmental Entities and other Customer Groups	A
	4.6	Procedures	Procedures describing how the principal activities will be performed	A
	4.7	Quality Control	Quality control procedures including a resource table for monitoring and auditing all public information and communication services	A
			Procedures to ensure accuracy, completion, and quality in submittals to TxDOT, Governmental Entities and Customer Groups	A
	4.7	Quality Control	Procedures to establish and encourage continuous improvement	A
	4.8	Audit	Name of Developer's representatie with defined authority for establishing, maintaining, auditing and reporting on PMP	A
			Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority	A
	4.9	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems Developer will use	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
5. Safety				
	5.1		Policies, plans, training programs, Work Site controls, and Incident response plans to ensure the health and safety of personnel involved in the Project and the general public affected by the Project	A
	5.2		Procedures for notifying TxDOT of Incidents arising out of or in connection with the performance of the Work	A
6. TxDOT - Developer Communications Plan				
	6.1		The manner in which the Developer's organization will respond to unexpected requests for information, communicate changes or revisions to necessary Developer personnel and notify the affected stakeholders before and after the changes are made.	A
	6.2		Processes and procedures for communication of Project information between the Developer's organization and TxDOT	A
7. Right-of-Way Acquisition Management				
	7.1	Organization	Developer's main contractural arrangements	A
			Orginizational structure covering the activities to be performed in accordance with the Contract Documents	A

7. ROW Acquisition Management (continued)				
	7.2	Personnel	Resource Plan for the Developer and its Contractors	A
			Arrangements for coordinating and managing staff interaction with TxDOT and its consultants, including collocation of Key Personnel and description of approach to coodrinating work of off-site personnel	A
			Names and contact details, titles, job roles and specific experience required for the Key Personnel as related to ROW acquisition and Utility Adjustment activities.	A
			Names and contact details, titles, job roles of principal personnel for Contractors and any third party with which Developer will coordinate activities	A
	7.3	Contractors	Overall control procedures for Contractors, including consultants and subconsultants	A
			Responsibility of Contractors and Affiliates	A
			Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts	A
			Procedures for implementation of the EPTP for employees of Contractors in accordance with the Technical Provisions Section 4	A
	7.4	Interfaces	Interfacing between the Developer, Contractors and the Independent Reviewers during Project ROW acquisition, including the interfaces between Project ROW acquisition, Project design, and quality review processes	A
	7.4	Interfaces	Coordination with Utility Owners	A
			Procedures for establishing Utility Adjustment Concept Plans and Utility Adjustment Plans	B
	7.5	Relocation	Relocation Plan (ROW)	B
	7.6	Environmental	Integration of the interface between environmental requirements (including Hazardous Materials and demolition) and Project ROW acquisition activities	A
			Applicable procedures for the Hazardous Materials Management Plan (HMMP) in accordance with the Technical Provisions Section 4	A
			Applicable procedures to implement the Storm Water Pollution Prevention Plan (SW3P), recycling program and waste management in accordance with the Technical Provisions Section 4	A
			Address CEPP requirements	A
	7.7	Schedule	Logic linked ROW acquisition activities on a parcel-by-parcel basis as part of the Facility Baseline Schedule, including adequate time periods for TxDOT review and condemnation activities in accordance with the Technical Provisions Section 7	A
	7.8	Procedures	Procedures describing how the principal activities will be performed during the Project ROW acquisition, whether directly undertaken or subcontracted	A
	7.9	Quality Control	Procedures to ensure accuracy, completion, and quality in submittals to TxDOT and Governmental Entities	A
			Procedures to establish and encourage continuous improvement	A
			Quality control procedures and quality review standards for Project ROW acquisition in accordance with the Technical Provisions Section 7	A
			Integration of component parts of the CEPP into ROW acquisition management	A

7. ROW Acquisition Management (continued)				
	7.10	Audit	Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority	A
	7.11	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems Developer will use	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
			Identify environmental documentation and reporting requirements	A
8. Risk Management				
	8.1		Procedures for identifying, assessing, analyzing, controlling and managing project risks to meet its obligations under the Agreement.	A

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Attachment 2-2
Work Breakdown Structure Requirements

Table 1 represents the minimum levels of the WBS that all schedule information shall rollup to once the Project Baseline Schedule is fully developed.

The WBS in general shall conform to level structure as follows or as otherwise approved by TxDOT:

Table 1: WBS Minimum Requirements

1 Project
- **1.1. Project Administration**
  - 1.1.1. Mobilization
    - 1.1.1.1. Developer
  - 1.1.2. Submittals and Permitting
    - 1.1.2.1. (By Governmental Agency)
      - 1.1.2.1.1. (By Specific Permit/Submittal Requirement)
- **1.2. Right-of Way Acquisition (for Each Segment)**
  - 1.2.1. Acquisition By TxDOT
    - 1.2.1.1. (By Parcel No.)
  - 1.2.2. Acquisition by Developer
    - 1.2.2.1. (By Parcel No.)
- **1.3. Utility Adjustments (for Each Segment)**
  - 1.3.1. Utility Coordination
    - 1.3.1.1. Administration and Planning
      - 1.3.1.1.1. Site Utility Engineering
      - 1.3.1.1.2. Conceptual Design
    - 1.3.1.2. (By Owner)
      - 1.3.1.2.1. Master Agreements
      - 1.3.1.2.2. Utility Assemblies
  - 1.3.2. Utility Relocations
    - 1.3.2.1. (By Owner)
      - 1.3.2.1.1. (By Line No.)
- **1.4. Design (for Each Segment)**
  - 1.4.1. General Activities and Field Work
    - 1.4.1.1. Design Mobilization
    - 1.4.1.2. Schematics
    - 1.4.1.3. Survey Work
    - 1.4.1.4. Geotechnical Investigations
    - 1.4.1.5. Additional Field Investigations
  - 1.4.2. Develop Specifications
    - 1.4.2.1. (By Discipline)
  - 1.4.3. Geotechnical Design
    - 1.4.3.1. General
    - 1.4.3.2. Earthwork Geotech
    - 1.4.3.3. Bridge Geotech
    - 1.4.3.4. Culvert Geotech
    - 1.4.3.5. Wall Geotech
    - 1.4.3.6. Pavement Borings

1.4. Design (Continued) (for Each Segment)

- 1.4.4. Pavement Design
  - 1.4.4.1. Data Analysis and Draft Report
  - 1.4.4.2. Final Design and Report
- 1.4.5. Drainage Design
  - 1.4.5.1. Hydrologic and Hydraulic Design
  - 1.4.5.2. Preliminary System Design
  - 1.4.5.3. Detailed Drainage Design
- 1.4.6. Roadway Design
  - 1.4.6.1. Alignments
  - 1.4.6.2. Earthwork
  - 1.4.6.3. Typical Sections
  - 1.4.6.4. Detailed Design
- 1.4.7. Bridge Design
  - 1.4.7.1. Establish Criteria and Procedures
  - 1.4.7.2. Bridge layouts
  - 1.4.7.3. Substructure Design
  - 1.4.7.4. Superstructure Design
- 1.4.8. Retaining Wall Design
  - 1.4.8.1. Establish Criteria and Procedures
  - 1.4.8.2. Fill Wall Design
  - 1.4.8.3. Cut Wall Design
- 1.4.9. Traffic Management
  - 1.4.9.1. Traffic Control Development (By Phase)
- 1.4.10. Environmental Design
  - 1.4.10.1. Erosion Control/SWPPP/EPIC
  - 1.4.10.2. Noise Wall Design
- 1.4.11. Landscape and Aesthetic Design
  - 1.4.11.1. Landscape Design
  - 1.4.11.2. Aesthetic Design
- 1.4.12. Electrical Design
  - 1.4.12.1. Illumination
  - 1.4.12.2. Traffic Signals
- 1.4.13. ITS & TCS Design
  - 1.4.13.1. Duct Bank System & Power Supply
  - 1.4.13.2. ITS/TCS Equipment & Structures
- 1.4.14. Signage and Marking Design
  - 1.4.14.1. Overhead Signs
  - 1.4.14.2. Small and Large Signs
  - 1.4.14.3. Pavement Markings
- 1.4.15. Design Packages
  - 1.4.15.1. Package Preparation
  - 1.4.15.2. QA/QC Review
  - 1.4.15.3. Submittal
  - 1.4.15.4. TxDOT/IE Reviews
  - 1.4.15.5. Comment Resolution

1.5. Construction (for Each Segment)

- 1.5.1. General
  - 1.5.1.1. Mobilization

1.5. Construction (Continued) (for Each Segment)

- 1.5.1.2. Administration
- 1.5.1.3. Quality Control
- 1.5.2. By Work Areas – Frontage Roads, Mainlanes & Cross-Streets
  - 1.5.2.1. Removals
    - 1.5.2.1.1. Building Removals
    - 1.5.2.1.2. ROW Preparation
    - 1.5.2.1.3. Roadway Removals
    - 1.5.2.1.4. Bridge Removals
  - 1.5.2.2. Earthwork
    - 1.5.2.2.1. Topsoil Stripping and Placing
    - 1.5.2.2.2. Excavation
    - 1.5.2.2.3. Embankment
    - 1.5.2.2.4. Special Geotechnical Measures
  - 1.5.2.3. Landscaping
    - 1.5.2.3.1. Seeding and Sodding
    - 1.5.2.3.2. Fertilizer and Watering
    - 1.5.2.3.3. Special Aesthetic Landscaping
  - 1.5.2.4. Subgrade Treatment and Base
    - 1.5.2.4.1. Lime Treatment or Other
    - 1.5.2.4.2. Flexible Base
  - 1.5.2.5. Pavement
    - 1.5.2.5.1. Asphalt Pavement
    - 1.5.2.5.2. Concrete Pavement
    - 1.5.2.5.3. Curb & Gutter
    - 1.5.2.5.4. Driveways
    - 1.5.2.5.5. Sidewalks and Median Paving
  - 1.5.2.6. Retaining Walls
    - 1.5.2.6.1. Permanent and Temporary (By Wall No.)
  - 1.5.2.7. Bridges
    - 1.5.2.7.1. (By Bridge Name)
  - 1.5.2.8. Drainage
    - 1.5.2.8.1. Culverts
    - 1.5.2.8.2. Storm Sewer
    - 1.5.2.8.3. Riprap
  - 1.5.2.9. Traffic Control and Temporary Work
    - 1.5.2.9.1. Barricades, Signs & Traffic Handling
    - 1.5.2.9.2. Erosion Control
    - 1.5.2.9.3. Detour Construction/Removal
    - 1.5.2.9.4. Portable Traffic Barrier
    - 1.5.2.9.5. Workzone Pavement Marking
    - 1.5.2.9.6. Temporary Bridges/Shoo-Flys
    - 1.5.2.9.7. Temporary Walls/Shoring
    - 1.5.2.9.8. Temporary Drainage
  - 1.5.2.10. Permanent Barriers
    - 1.5.2.10.1. Permanent Concrete Barriers
    - 1.5.2.10.2. Metal Beam Guard Fence
    - 1.5.2.10.3. Crash Attenuators
  - 1.5.2.11. Signals and Illumination
    - 1.5.2.11.1. Roadway Illumination

1.5.2.11.2. High Mast Illumination

1. 5. Construction (Continued) (for Each Segment)

1.5.2.11.3. Electrical Services
1.5.2.11.4. Traffic Signals
1.5.2.12. ITS/TCS
1.5.2.12.1. Duct Bank System
1.5.2.12.2. Equipment Foundations
1.5.2.12.3. Support Structures and Equipment
1.5.2.13. Permanent Signing and Marking
1.5.2.13.1. Overhead Signs
1.5.2.13.2. Small and Large Signs
1.5.2.13.3. Pavement Markings
1.5.2.14. Environmental Mitigation
1.5.2.14.1. Noise Walls
1.5.2.14.2. Wetland and Habitat Mitigation
1.5.2.15. Hazardous Materials
1.5.2.15.1. Site Assessments
1.5.2.15.2. Remediation

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Attachment 2-3
Organizational Structure for Cost Reporting

Organizational Structure for Cost Reporting

1 PROJECT DESCRIPTION

1.1. Project Administration
- 1.1.1. Mobilization
- 1.1.2. Submittals and Permitting

1.2. Right-of Way Acquisition
- 1.2.1. Acquisition By TxDOT
- 1.2.2. Acquisition by Developer

1.3. Utility Adjustments
- 1.3.1. Utility Coordination
- 1.3.2. Utility Relocations

1.4. Design
- 1.4.1. General Activities and Field Work
- 1.4.2. Develop Specifications
- 1.4.3. Geotechnical Design
- 1.4.4. Pavement Design
- 1.4.5. Drainage Design
- 1.4.6. Roadway Design
- 1.4.7. Bridge Design
- 1.4.8. Retaining Wall Design
- 1.4.9. Traffic Management
- 1.4.10. Environmental Design
- 1.4.11. Landscape and Aesthetic Design
- 1.4.12. Electrical Design
- 1.4.13. ITS & TCS Design
- 1.4.14. Signage and Marking Design
- 1.4.15. Design Packages

1.5. Construction
- 1.5.1. Traffic Control and Temporary Work
- 1.5.2. Environmental Mitigation
- 1.5.3. Hazardous Materials
- 1.5.4. Removals
- 1.5.5. Earthwork
- 1.5.6. Subgrade Treatment and Base
- 1.5.7. Drainage
- 1.5.8. Pavement
- 1.5.9. Retaining Walls
- 1.5.10. Bridges
- 1.5.11. Permanent Barriers
- 1.5.12. Signals and Illumination
- 1.5.13. ITS/TCS
- 1.5.14. Landscaping
- 1.5.15. Permanent Signing and Marking

1.6. Changes Modifications
- 1.6.1. Change Order #xx

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Attachment 2-4

I2MS Test Field Forms

I2MS Test Field Report

File: I2MSFieldReport.xls
File Type: Microsoft Excel (spreadsheet)
File Description: Describes what fields are required to be submitted per test, including pertinent header and footer information. All fields are required to be submitted if possible.

I2MS Test Form Fields

Purpose

The purpose of this document is to provide information on the tables and fields within I2MS.

Material Test Forms

Material Test Forms are forms used to run tests for a sample. A test form contains header and footer information which all forms have in common. Each test form also has a form body containing fields specific to the test method(s) being performed.

Header Fields

The header information is the metadata of the form. It is vital for searching for and analyzing records. All of the test forms have similar header information.

Table Name: HEADER_VALUE_OVT **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Course Lift	course_lift	nvarchar	250		TRUE
Direction	direction	nvarchar	250	CVL	TRUE
Distance From CL	dist_from_cl	nvarchar	250		TRUE
Feature	feature	nvarchar	250	CVL	TRUE
Grade	grade	nvarchar	100	CVL	TRUE
Material	material	nvarchar	100	CVL	TRUE
Misc	misc	nvarchar	250		TRUE
Report Type	report_type	nvarchar	250	CVL	TRUE
Roadway	roadway	nvarchar	250	CVL	TRUE
Sample ID	sample_id	nvarchar	13		TRUE
Sample Location	sample_location	nvarchar	250		TRUE
Sample Type	sample_type	nvarchar	100	CVL	TRUE
Sampled By	sampled_by	nvarchar	250	CVL	TRUE
Sampled Date	sampled_date	datetime		MM/dd/yyyy	TRUE
Section	section	nvarchar	100	CVL	TRUE
Spec Item	spec_item	nvarchar	100	CVL	TRUE
Spec Year	spec_year	nvarchar	250		TRUE
Special Provision	special_provision	nvarchar	250	CVL	TRUE
Split Sample ID	split_sample_id	nvarchar	250		TRUE
Station	station	nvarchar	250	Pattern: [0-9]+\+[0-9][0-9](\.[0-9][0-9])?	TRUE
Structure Number	structure_number	nvarchar	250	CVL	TRUE
Supplier	supplier	nvarchar	100	CVL	TRUE

Footer Fields

The footer contains approval data and comments for each of the test forms.

Table Name: FOOTER_VALUE_OVT **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Authorized By	authorized_by	nvarchar	100	CVL	TRUE
Authorized Date	authorized_date	smalldatetime		MM/dd/yyyy	TRUE
Completed Date	completed_date	smalldatetime		MM/dd/yyyy	TRUE
Digital Signature ID 1	dig_sig_id1	int			FALSE
Digital Signature ID 2	dig_sig_id2	int			FALSE
Remarks	remarks	text			TRUE
Reviewed By	reviewed_by	nvarchar	100	CVL	TRUE

Body Fields

Moisture Content of Aggregates (DB-103-E)

Table Name: VALUE_DB103E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Dish No.	dish_no	nvarchar	100		FALSE
Mass of Dry Sample	dry_sample_tare	decimal	(19, 8)		FALSE
Moisture Content	moisture_content	decimal	(19, 8)		TRUE
Payable Weight of Class 2 Flex Base	payable_weight	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tare Mass	tare_mass	decimal	(19, 8)		FALSE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Mass of Wet Sample Tare	wet_sample_tare	decimal	(19, 8)		FALSE

Liquid Limit, Plastic Limit, Plastic Index (DB-104-6)

Table Name: VALUE_DB104E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Liquid Limit	liquid_limit_total	decimal	(19, 8)		TRUE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB104E_SAMPLE **Maximum Rows: 6**

Field Description	Field Name	Datatype	Length	Values	Required
Dish No.	dish_no	nvarchar	100		FALSE
Liquid Limit (%)	liquid_limit	decimal	(19, 8)		FALSE
Mass of Dry Sample + Tare (g)	mass_dry_sample	decimal	(19, 8)		FALSE
Mass of Wet Sample + Tare (g)	mass_wet_sample	decimal	(19, 8)		FALSE
Moisture Content, %	moisture_content	decimal	(19, 8)		FALSE
Number of Blows	number_blows	int			FALSE
Tare Mass (g)	tare_mass	decimal	(19, 8)		FALSE

Table Name: VALUE_DB105E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Plastic Limit	plastic_limit_total	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB105E_SAMPLE **Maximum Rows: 3**

Field Description	Field Name	Datatype	Length	Values	Required
Dish No.	dish_no	nvarchar	100		FALSE
Mass of Dry Sample + Tare (g)	mass_dry_sample	decimal	(19, 8)		FALSE
Mass of Wet Sample + Tare (g)	mass_wet_sample	decimal	(19, 8)		FALSE
Plastic Limit (%)	plastic_limit	decimal	(19, 8)		FALSE
Tare Mass (g)	tare_mass	decimal	(19, 8)		FALSE
Mass of Water (g)	water_mass	decimal	(19, 8)		FALSE

Table Name: VALUE_DB106E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Plastic Index	plasticity_index	int			TRUE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE
Use Bar Linear Shrinkage to Calculate Plasticity Index?	use_bar_linear	nvarchar	100	{Yes, No}	FALSE

Bar Linear Shrinkage (DB-107-E)

Table Name: VALUE_DB107E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Calculate Plasticity Index	calculate_plasticity_index	bit		{Yes, No}	FALSE
Final Length	final_length	decimal	(19, 8)		FALSE
Initial Length	initial_length	decimal	(19, 8)		FALSE
Linear Shrinkage	linear_shrinkage	decimal	(19, 8)		TRUE
Maximum By Specification	maximum_by_specification	decimal	(19, 8)		FALSE
Minimum By Specification	minimum_by_specification	decimal	(19, 8)		FALSE
Plasticity Index	plasticity_index	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Unit	unit	nvarchar	100		FALSE

Particle Size Analysis (DB-110-E)

Table Name: VALUE_DB110E_SIEVE **Maximum Rows: 6**

Field Description	Field Name	Datatype	Length	Values	Required
Cumulative Percent Retained	cumulative_pct_retained	decimal	(19, 8)		TRUE
Cumulative Weight Retained	cumulative_weight_retained	decimal	(19, 8)		FALSE
Lower Spec Limit	lower_spec_limit	decimal	(19, 8)		FALSE
Master Grading	master_grading	nvarchar	100		TRUE
Sieve Size	sieve_size	nvarchar	100	CVL	TRUE
Upper Spec Limit	upper_spec_limit	decimal	(19, 8)		FALSE
Weight Retained	weight_retained	decimal	(19, 8)		FALSE

Table Name: VALUE_DB110E_TEST **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Cumulative Method	individual_cumulative	nvarchar	100	{Cumulative, Individual}	FALSE
Negative No.40	negative_no_40	nvarchar	100		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE
Total	total	nvarchar	100		FALSE

Moisture-Density Work Sheet (DB-113-E)

Table Name: VALUE_DB113E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Dry Density Scale Max	dry_density_scale_max	decimal	(19, 8)		FALSE
Dry Density Scale Min	dry_density_scale_min	decimal	(19, 8)		FALSE
Dry Density Scale unit	dry_density_scale_unit	decimal	(19, 8)		FALSE
Hygroscopic Moisture	hygroscopic_moisture	decimal	(19, 8)		FALSE
Max Density(kg)	max_density_kg	decimal	(19, 8)		FALSE
Max Density (pcf)	max_density_pcf	decimal	(19, 8)		TRUE
Moisture scale max	moisture_scale_max	decimal	(19, 8)		FALSE
Moisture scale min	moisture_scale_min	decimal	(19, 8)		FALSE
Moisture scale unit	moisture_scale_unit	decimal	(19, 8)		FALSE
Optimum Moisture	optimum_moisture	decimal	(19, 8)		TRUE
Oven Dry Weight	oven_dry_weight	decimal	(19, 8)		FALSE
Soil Description	soil_desc	nvarchar	100		TRUE
Specific Gravity (Apparent)	specific_gravity	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Weight of Aggr., Pycn. & Water	weight_of_aggr	decimal	(19, 8)		FALSE
Weight of Pycnometer & Water	weight_of_pycnometer	decimal	(19, 8)		FALSE

Table Name: VALUE_DB113E_SPECIMEN **Maximum Rows: 4**

Field Description	Field Name	Datatype	Length	Values	Required
Dry Density	dry_density	decimal	(19, 8)		FALSE
Dry Mass Material	dry_mass_material	decimal	(19, 8)		FALSE
Dry Mass Pan & Specimen	dry_mass_pan_specimen	decimal	(19, 8)		FALSE
Estimated Dry Density	est_dry_density	decimal	(19, 8)		FALSE
Height of Specimen	height_specimen	decimal	(19, 8)		FALSE
Mass Material	mass_material	decimal	(19, 8)		FALSE
Mass Water	mass_water	decimal	(19, 8)		FALSE
Mass Water Added	mass_water_added	decimal	(19, 8)		FALSE
Percent Water Content	pct_water_content	decimal	(19, 8)		FALSE
Percent Water On Total	pct_water_total	decimal	(19, 8)		FALSE
Tare Mass Mold	tare_mass_mold	decimal	(19, 8)		FALSE
Tare Mass Pan	tare_mass_pan	decimal	(19, 8)		FALSE
Volume Per Linear	volume_per_linear	decimal	(19, 8)		FALSE
Volume of Specimen	volume_specimen	decimal	(19, 8)		FALSE
Wet Density of Specimen	wet_density_specimen	decimal	(19, 8)		FALSE
Wet Mass Of Pan & Specimen	wet_mass_pan_specimen	decimal	(19, 8)		FALSE
Wet Mass Specimen	wet_mass_specimen	decimal	(19, 8)		FALSE
Wet Mass Specimen & Mold	wet_mass_specimen_mold	decimal	(19, 8)		FALSE

Moisture-Density Relationship of Subgrade and Embankment Soils (DB-114-E)

Table Name: VALUE_DB114E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Dry Density Scale Max	dry_density_scale_max	decimal	(19, 8)		FALSE
Dry Density Scale Min	dry_density_scale_min	decimal	(19, 8)		FALSE
Dry Density Scale unit	dry_density_scale_unit	decimal	(19, 8)		FALSE
Hygroscopic Moisture	hygroscopic_moisture	decimal	(19, 8)		FALSE
Max Density (kg)	max_density_kg	decimal	(19, 8)		FALSE
Max Density (pcf)	max_density_pcf	decimal	(19, 8)		TRUE
Moisture scale max	moisture_scale_max	decimal	(19, 8)		FALSE
Moisture scale min	moisture_scale_min	decimal	(19, 8)		FALSE
Moisture scale unit	moisture_scale_unit	decimal	(19, 8)		FALSE
Optimum Moisture	optimum_moisture	decimal	(19, 8)		TRUE
Oven Dry Weight	oven_dry_weight	decimal	(19, 8)		FALSE
Soil Descript	soil_description	nvarchar	100		TRUE
Specific Gravity	specific_gravity	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Weight of Aggr., Pycn. & Water	weight_of_aggr	decimal	(19, 8)		FALSE
Weight of Pycnometer & Water	weight_of_pycnometer	decimal	(19, 8)		FALSE

Table Name: VALUE_DB114E_SPECIMEN **Maximum Rows: 4**

Field Description	Field Name	Datatype	Length	Values	Required
Dry Density	dry_density	decimal	(19, 8)		FALSE
Dry Mass Material	dry_mass_material	decimal	(19, 8)		FALSE
Dry Mass Pan & Specimen	dry_mass_pan_specimen	decimal	(19, 8)		FALSE
Estimated Dry Density	est_dry_density	decimal	(19, 8)		FALSE
Height of Specimen	height_specimen	decimal	(19, 8)		FALSE
Mass Material	mass_material	decimal	(19, 8)		FALSE
Mass Water	mass_water	decimal	(19, 8)		FALSE
Mass Water Added	mass_water_added	decimal	(19, 8)		FALSE
Percent Water Content	pct_water_content	decimal	(19, 8)		FALSE
Percent Water Total	pct_water_total	decimal	(19, 8)		FALSE
Tare Mass Mold	tare_mass_mold	decimal	(19, 8)		FALSE
Tare Mass Pan	tare_mass_pan	decimal	(19, 8)		FALSE
Volume Per Linear mm	volume_per_linear	decimal	(19, 8)		FALSE
Volume of Specimen	volume_specimen	decimal	(19, 8)		FALSE
Wet Density of Specimen	wet_density_specimen	decimal	(19, 8)		FALSE
Wet Mass of Pan & Specimen	wet_mass_pan_specimen	decimal	(19, 8)		FALSE
Wet Mass Specimen	wet_mass_specimen	decimal	(19, 8)		FALSE
Wet Mass Specimen & Mold	wet_mass_specimen_mold	decimal	(19, 8)		FALSE

Nuclear Density and Moisture Determination (DB-115-1)

Table Name: VALUE_DB115_1 **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Density Count	density_count	int			FALSE
Density, %	density_pct	decimal	(19, 8)		TRUE
Pass/Fail	density_pct_pass_fail	nvarchar	100		FALSE
Max Density Specification Requirement	density_specification_req_max	decimal	(19, 8)		FALSE
Low Density Specification Req	density_specification_req_min	decimal	(19, 8)		FALSE
density_standard	density_standard	int			FALSE
Determined By Test Method	determined_by_test_method	nvarchar	100	{DB-113-E, DB-114-E}	FALSE
Dry Density, pcf	dry_density_pcf	decimal	(19, 8)		TRUE
Gauge No.	gauge_no	nvarchar	100		TRUE
Maximum Dry Density	max_dry_density_pcf	decimal	(19, 8)		TRUE
Moisture Content, %	moisture_content_pct	decimal	(19, 8)		TRUE
Moisture Content Pct Pass or Fail	moisture_content_pct_pass_fail	nvarchar	100	{Pass, Fail}	FALSE
Moisture Count	moisture_count	int			FALSE
Max Moisture Specification Requirement	moisture_specification_req_max	decimal	(19, 8)		FALSE
Low Moisture Specification Req	moisture_specification_req_min	decimal	(19, 8)		FALSE
Moisture Standard	moisture_standard	int			FALSE
Optimum Moisture Content	optimum_moisture_content_pct	decimal	(19, 8)		TRUE
Probe Depth	probe_depth	decimal	(19, 8)		TRUE
Soil Description	soil_desc	nvarchar	100		TRUE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE
Wet Density , pcf	wet_density_pcf	decimal	(19, 8)		FALSE

Soil /Aggregate Field Unit Weight Tests (DB-115-2)

Table Name: VALUE_DB115_2 **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Compaction, %	compaction_pct	decimal	(19, 8)		FALSE
Compaction Required	compaction_req_pct	decimal	(19, 8)		FALSE
Dry unit weight	dry_unit_weight	decimal	(19, 8)		FALSE
Dry Weight Total Moisture Sample	dry_weight_total_moisture	decimal	(19, 8)		FALSE
Final Weight Apparatus & Sand	final_weight_apparatus	decimal	(19, 8)		FALSE
Final Weight of Sand	final_weight_sand	decimal	(19, 8)		FALSE
Initial Weight Apparatus & Sand	initial_weight_apparatus	decimal	(19, 8)		FALSE
Initial Weight of Sand	initial_weight_sand	decimal	(19, 8)		FALSE
Maximum dry unit weight	max_dry_unit_weight	decimal	(19, 8)		FALSE
Moisture Required	moisture_req_pct	decimal	(19, 8)		FALSE
Optium Moisture (% if of dry unit weight)	optimum_moisture	decimal	(19, 8)		FALSE
Pass/Fail % Density	pass_fail_pct_density	nvarchar	100		FALSE
Pass/Fail % Moisture	pass_fail_pct_moisture	nvarchar	100		FALSE
% Moisture	pct_moisture	decimal	(19, 8)		FALSE
Sand bulk unit weight	sand_bulk_unit_weight	decimal	(19, 8)		FALSE
Soil Descript	soil_desc	nvarchar	100		FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	datetime		MM/dd/yyyy	FALSE
Total Volume-Sand Userd	total_volume	decimal	(19, 8)		FALSE
Volume of Hole	volume_hole	decimal	(19, 8)		FALSE
Volume of Surface	volume_surface	decimal	(19, 8)		FALSE
Weight of Material From Hole	weight_material_hole	decimal	(19, 8)		FALSE
Wet Unit Weight	wet_unit_weight	decimal	(19, 8)		FALSE
Wet Weight Total Moisture Sample	wet_weight_total_moisture	decimal	(19, 8)		FALSE

Test Resistance to Degradation By Wet Ball Mill Method (DB-116-E)

Table Name: VALUE_DB116E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Cumulative Method	cumulative_method	nvarchar	50	{Cumulative, Individual}	FALSE
Total of 3000g weight retained	individual_weight_retained_3000g_total	decimal	(19, 8)		FALSE
Total of 3500g weight retained	individual_weight_retained_3500g_total	decimal	(19, 8)		FALSE
Percent Soil Binder	pct_soil_binder	decimal	(19, 8)		FALSE
Percent Soil Binder Increase	pct_soil_binder_increase	decimal	(19, 8)		TRUE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Wet Ball Mill -No.40 Individual Percent Retained	wbm_individual_pct_retained_minusno40	decimal	(19, 8)		FALSE
Wet Ball Mill No.40 Individual Percent Retained	wbm_individual_pct_retained_no40	decimal	(19, 8)		FALSE
Wet Ball Mill Initial Weight	wbm_initial_weight	decimal	(19, 8)		FALSE
Wet Ball Mill Value	wbm_value	decimal	(19, 8)		TRUE
Wet Ball Mill -No.40 Weight Retained	wbm_weight_retained_minusno40	decimal	(19, 8)		FALSE
Wet Ball Mill No.40 Weight Retained	wbm_weight_retained_no40	decimal	(19, 8)		FALSE
Total of weight retained	weight_retained_total	decimal	(19, 8)		FALSE
Washed Sieve Analysis No.40 Individual Percent Retained	wsa_individual_pct_retained_no40	decimal	(19, 8)		FALSE
Washed Sieve Analysis -No.40 Individual Percent Retained	wsa_inidividual_pct_retained_minusno40	decimal	(19, 8)		FALSE
Washed Sieve Analysis Initial Weight	wsa_initial_weight	decimal	(19, 8)		FALSE
Washed Sieve Analysis -No.40 Weight Retained	wsa_weight_retained_minusno40	decimal	(19, 8)		FALSE
Washed Sieve Analysis No.40 Weight Retained	wsa_weight_retained_no40	decimal	(19, 8)		FALSE

Table Name: VALUE_DB116E_SIEVE **Maximum Rows: 7**

Field Description	Field Name	Datatype	Length	Values	Required
Cumulative Percent Retained	cumulative_pct_retained	decimal	(19, 8)		FALSE
3000g Cumulative Weight Retained	cumulative_weight_retained_3000g	decimal	(19, 8)		FALSE
3500g Cumulative Weight Retained	cumulative_weight_retained_3500g	decimal	(19, 8)		FALSE
Individual Percent Retained	individual_pct_retained	decimal	(19, 8)		FALSE
3000g Individual Weight Retained	individual_weight_retained_3000g	decimal	(19, 8)		FALSE
3500g Individual Weight Retained	individual_weight_retained_3500g	decimal	(19, 8)		FALSE
Sieve Size	sieve_size	nvarchar	100		FALSE
Weight Retained	weight_retained	decimal	(19, 8)		FALSE

Triaxial Compression Tests (DB-117-E)

Table Name: VALUE_DB117E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Average Corrected Strength, 00 psi	average_corrected_strength_0psi	decimal	(19, 8)		TRUE
Average Corrected Strength, 15 psi	average_corrected_strength_15psi	decimal	(19, 8)		TRUE
Classification	classification	nvarchar	100		FALSE
Cohesion, psi	cohesion_psi	decimal	(19, 8)		FALSE
Correlation Factor	correlation_factor	decimal	(19, 8)		FALSE
Grade, 00 psi	grade_0psi	nvarchar	100		FALSE
Grade, 15 psi	grade_15psi	nvarchar	100		FALSE
Internal Angle of Friction	internal_angle_friction	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB117E_SPECIMEN **Maximum Rows: 8**

Field Description	Field Name	Datatype	Length	Values	Required
Area, in.^2	area	decimal	(19, 8)		FALSE
Avg. Cross Sectional Area, in^2	avg_cross_sectional_area	decimal	(19, 8)		FALSE
Average Diameter, in.	avg_diameter	decimal	(19, 8)		FALSE
Corrected Stress, psi.	corrected_stress_psi	decimal	(19, 8)		FALSE
Dry Density of Specimen, pcf	dry_density_specimen_pcf	decimal	(19, 8)		FALSE
Final Weight of Stones	final_weight_stones	decimal	(19, 8)		FALSE
Height of Stone 1, in.	height_stone1	decimal	(19, 8)		FALSE
Height of Stone 2, in.	height_stone2	decimal	(19, 8)		FALSE
I-Strain, in./in.	i_strain	decimal	(19, 8)		FALSE
Initial Height of Specimen, in.	initial_height	decimal	(19, 8)		FALSE
Lateral Pressure, psi.	lateral_pressure_psi	decimal	(19, 8)		FALSE
New Height of Specimen, in.	new_height	decimal	(19, 8)		FALSE
Moisture of Specimen, %	pct_moisture_specimen	decimal	(19, 8)		FALSE
% Strain , in./in.	pct_strain	decimal	(19, 8)		FALSE
Uncorrected Stress, psi.	uncorrected_stress_psi	decimal	(19, 8)		FALSE
Weight of Specimen	weight_specimen	decimal	(19, 8)		FALSE
Weight of Stones and Specimen	weight_stones_specimen	decimal	(19, 8)		FALSE

Determining Soil pH (DB-128-E)

Table Name: VALUE_DB128E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Soil pH	soil_ph	decimal	(19, 8)		TRUE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE

Measuring Resistivity of Soil Materials (DB-129-E)

Table Name: VALUE_DB129E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Resistance using resistivity meter	resistance_using_meter	decimal	(19, 8)		FALSE
Resistivity	resistivity_result	decimal	(19, 8)		TRUE
A= Area of one electrode	sbf_area	decimal	(19, 8)		FALSE
Distance between electrodes	sbf_distance	decimal	(19, 8)		FALSE
Soil Box Factor	sbf_factor	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE

Measuring Thickness of Pavement Layer (DB-140-E)

Table Name: VALUE_DB140E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Average Depth:	avg_depth	decimal	(19, 8)		TRUE
Depth 1:	depth_1	decimal	(19, 8)		FALSE
Depth 2:	depth_2	decimal	(19, 8)		FALSE
Depth 3:	depth_3	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

OVF HMAC Test Data: DB-200-F, DB-207-FPR, DB-227-F, DB-236-F, DB-207-F (DB-200/07/36)

Table Name: VALUE_DB207F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Specific Gravity of Asphalt Binder	specific_gravity	decimal	(19, 3)		FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	FALSE
Voids in Mineral Aggregate (VMA)	vma	decimal	(19, 1)		TRUE

Table Name: VALUE_DB207FPR **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Average Actual Specific Gravity (Ga):	GA	nvarchar	100		TRUE
Lab Molded Density, %:	LMD	decimal	(19, 8)		TRUE
Stamp Code	stamp_code	nvarchar	100	CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB227F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Rice Specific Gravity (Gr):	rice_specific_gravity	decimal	(19, 8)		TRUE
Stamp Code	stamp_code	nvarchar	100	CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB229F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Stamp Code	stamp_code	nvarchar	100	CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB229F_SIEVE **Maximum Rows: 10**

Field Description	Field Name	Datatype	Length	Values	Required
Current JMF	Current_JMF	nvarchar	100		FALSE
Design JMF	Design_JMF	nvarchar	100		FALSE
Adjusted Individual % Retained	pct	decimal	(19, 8)		TRUE
Sieve Size	sieve_size	nvarchar	100	CVL	TRUE

Table Name: VALUE_DB236F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Asphalt Content, %:	AC	decimal	(19, 8)		TRUE
Stamp Code	stamp_code	nvarchar	100	CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Sieve Analysis of Non-Surface Treatment Aggregates (DB-200-F)

Table Name: VALUE_DB200F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Cumulative Weight Retained Minusno14	cumulative_weight_retained_minusno14	decimal	(19, 8)		FALSE
Dry Weight After Washing	dry_weight_after_washing	decimal	(19, 8)		FALSE
Limit As Percent	limit_as_percent	nvarchar	100	{Passing, Retained}	FALSE
Original Dry Weight	original_dry_weight	decimal	(19, 8)		FALSE
Sieve Analysis Result 1	sieve_analysis_result1	nvarchar	100		FALSE
Sieve Analysis Result 2	sieve_analysis_result2	decimal	(19, 8)		FALSE
Sieve Analysis Result 3	sieve_analysis_result3	decimal	(19, 8)		FALSE
Sieve Analysis Result 4	sieve_analysis_result4	decimal	(19, 8)		FALSE
Sieving Loss	sieving_loss	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Total Weight	total_weight	decimal	(19, 8)		FALSE
Washing Loss	washing_loss	decimal	(19, 8)		FALSE

Table Name: VALUE_DB200F_SIEVE **Maximum Rows: 12**

Field Description	Field Name	Datatype	Length	Values	Required
Cumulative Percent Passing	cumulative_pct_passing	decimal	(19, 8)		TRUE
Cumulative Percent Retained	cumulative_pct_retained	decimal	(19, 8)		FALSE
Cumulative Weight Retained	cumulative_weight_retained	decimal	(19, 8)		FALSE
Individual Weight Retained	individual_weight_retained	decimal	(19, 8)		FALSE
Lower Limit Grading	lower_limit_grading	decimal	(19, 8)		FALSE
Sieve Size	sieve_size	nvarchar	100	{2", 1-3/4", 1-1/2", 1-1/4", 1", 7/8", 3/4", 5/8", 1/2", 7/16", 3/8", 5/16", 1/4", No. 4, No. 6, No. 8, No. 10, No. 14, No. 16, No. 20, No. 30, No. 40, No. 50, No. 80, No. 100, No. 200 }	TRUE
Upper Limit Grading	upper_limit_grading	decimal	(19, 8)		FALSE
Within Grading Limits	within_grading_limits	bit			TRUE

Sand Equivalent (DB-203-F)

Table Name: VALUE_DB203F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Average Sand Equivalent	average_sand_equivalent	decimal	(19, 8)		TRUE
Clay No.1 Reading	clay1_reading	decimal	(19, 8)		FALSE
Clay No.2 Reading	clay2_reading	decimal	(19, 8)		FALSE
Sand No.1 Calculated	sand1_calculated	decimal	(19, 8)		FALSE
Sand No.1 Reading	sand1_reading	decimal	(19, 8)		FALSE
Sand No.1 Reported	sand1_reported	decimal	(19, 8)		FALSE
Sand No.2 Calculated	sand2_calculated	decimal	(19, 8)		FALSE
Sand No.2 Reading	sand2_reading	decimal	(19, 8)		FALSE
Sand No.2 Reported	sand2_reported	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE

QC/QA Test Data (DB-207-FPL)

Table Name: VALUE_DB207FPL **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
In Place Air Void, %	air_void	decimal	(19, 8)		TRUE
Stamp Code	stamp_code	nvarchar	100	CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Deleterious Material & Decantation For Coarse Aggr (DB-217-F)

Table Name: VALUE_DB217F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Original Weight Retained	part1_orig_weight_retained	decimal	(19, 8)		FALSE
Percent Deterious Material	part1_pct_deleterious_material	decimal	(19, 8)		TRUE
Sieve Size	part1_sieve_size	nvarchar	100		FALSE
Weight Deleterious Material	part1_weight_deleterious_material	decimal	(19, 8)		FALSE
Dry Weight after Washing	part2_dry_weight_after_washing	decimal	(19, 8)		FALSE
Percent Loss By Decantation	part2_loss_by_decantation	decimal	(19, 8)		TRUE
Original Weight Retained	part2_orig_weight_retained	decimal	(19, 8)		FALSE
Sieve Size	part2_sieve_size	nvarchar	53		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Sieve Analysis for Fine & Coarse Aggregate (DB-401-A)

Table Name: VALUE_DB401A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Equivalent Exceed 85	equivalent_exceed_85	bit			FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Total	total	decimal	(19, 8)		FALSE

Table Name: VALUE_DB401A_SIEVE **Maximum Rows: 8**

Field Description	Field Name	Datatype	Length	Values	Required
Cumulative Percent Passing	cumulative_pct_passing	decimal	(19, 8)		FALSE
Cumulative Percent Retained	cumulative_pct_retained	decimal	(19, 8)		TRUE
Cumulative Weight Retained	cumulative_weight_retained	decimal	(19, 8)		FALSE
Individual Weight Retained	individual_weight_retained	decimal	(19, 8)		FALSE
Lower Spec Limit	lower_retained_spec_limit	decimal	(19, 8)		FALSE
Sieve Size	sieve_size	nvarchar	100		TRUE
Upper Spec Limit	upper_retained_spec_limit	decimal	(19, 8)		FALSE
Within Master Grading	within_master_grading	varchar	20		TRUE

Table Name: VALUE_DB402A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Fineness Modulus	fineness_modulus	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	FALSE

Decantation Test For Concrete Aggregates (DB-406-A)

Table Name: VALUE_DB406A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Dry Mass After Washing	dry_mass_after_washing	decimal	(19, 8)		FALSE
Mass of Pycnometer Containing Sample and Water To Fill After Washing	mass_of_pycnometer_after_washing	decimal	(19, 8)		FALSE
Mass of Pycnometer Containing Sample and Water To Fill Before Washing	mass_of_pycnometer_before_washing	decimal	(19, 8)		FALSE
Mass of Pycnometer Filled With Water at Approx. Same Temperature as above	mass_of_pycnometer_with_water	decimal	(19, 8)		FALSE
Original Dry Mass of Sample	original_dry_mass	decimal	(19, 8)		FALSE
% Loss	percent_loss_part1	decimal	(19, 8)		TRUE
Percent Loss	percent_loss_part2	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Test By:	test_by	nvarchar	100	{Part I - Lab Method, Part II - Field Method}	FALSE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested By - Part II	tested_by_part2	nvarchar	100	CVL	FALSE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Tested Date - Part II	tested_date_part2	datetime		MM/dd/yyyy	FALSE

Organic Impurities in Fine Aggregate for Concrete (DB-408-A)

Table Name: VALUE_DB408A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Color of the Supernatant Liquid	color_of_supernatant_liquid	nvarchar	100	{LIGHTER THAN STANDARD, EQUAL TO STANDARD, DARKER THAN STANDARD}	TRUE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE

Deleterious Material (DB-413-A)

Table Name: VALUE_DB413A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Clay	clay_value1	decimal	(19, 8)		FALSE
Clay Percentage	clay_value2	decimal	(19, 8)		TRUE
Friable	friable_value1	decimal	(19, 8)		FALSE
Friable Percentage	friable_value2	decimal	(19, 8)		TRUE
Laminated	laminated_value1	decimal	(19, 8)		FALSE
Laminated Percentage	laminated_value2	decimal	(19, 8)		TRUE
Other	other_value1	decimal	(19, 8)		FALSE
Othesr Percentage	other_value2	decimal	(19, 8)		FALSE
Deleterious Material Retained	percent_deleterious_material_retained	decimal	(19, 8)		TRUE
Shale	shale_value1	decimal	(19, 8)		FALSE
Shale Percentage	shale_value2	decimal	(19, 8)		TRUE
Sieve Size	sieve_size	nvarchar	100		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE
Total	total	decimal	(19, 8)		FALSE
Total Weight Sample	total_weight_sample	decimal	(19, 8)		FALSE

Field Form Concrete Sample - Cylinders (DB-418-A)

Table Name: VALUE_DB418A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Actual Water	actual_water	nvarchar	100		TRUE
Agg. Correction Factor	agg_correction_factor	nvarchar	100	CVL	TRUE
Agg. Size	agg_size	nvarchar	100	CVL	TRUE
Air Temperature	air_temperature	nvarchar	100		TRUE
Batch Size	batch_size	nvarchar	100		TRUE
Batch Time	batch_time	nvarchar	100		TRUE
Class of Concrete	class_of_concrete	nvarchar	100	CVL	TRUE
Concrete Temperature	concrete_temperature	nvarchar	100		TRUE
Corrected Air Content	corrected_air_content	decimal	(19, 8)		TRUE
Design Water	design_water	nvarchar	100		TRUE
Mix ID	mix_id	nvarchar	100		TRUE
Placement Air	placement_air	decimal	(19, 8)		TRUE
Placement Slump	placement_slump	decimal	(19, 8)	CVL	TRUE
Pump Air Loss	pump_air_loss	decimal	(19, 8)		TRUE
Pump Slump Loss	pump_slump_loss	decimal	(19, 8)		TRUE
Req. Strength	req_strength	nvarchar	100		TRUE
Sample Time	sample_time	nvarchar	100		TRUE
Average 7 Day Compressive Strength	seven_day_average	decimal	(19, 8)		FALSE
Slump	slump	decimal	(19, 8)		TRUE
Specimen Size	specimen_size	nvarchar	100	{4x8, 6x12}	TRUE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Ticket #	ticket_number	nvarchar	100		TRUE
Total Water	total_water	nvarchar	100		TRUE
Truck #	truck_number	nvarchar	100		TRUE
Average 28 Day Compressive Strength	twenty_eight_day_average	decimal	(19, 8)		FALSE
Unit Wt.	unit_weight	nvarchar	100		TRUE
Water Added	water_added	nvarchar	100		TRUE

Table Name: VALUE_DB418A_AVERAGE **Maximum Rows: 3**

Field Description	Field Name	Datatype	Length	Values	Required
Average Age	average_age	nvarchar	100		TRUE
Average Strength	average_strength	decimal	(19, 8)		TRUE

Table Name: VALUE_DB418A_SPECIMEN **Maximum Rows: 7**

Field Description	Field Name	Datatype	Length	Values	Required
Age(days)	age	nvarchar	100	CVL	TRUE
Area	area	decimal	(19, 8)		TRUE
Load(lbs)	load_lbs	decimal	(19, 8)		TRUE
Pass/Fail	pass_fail	nvarchar	5		FALSE
Specimen	specimen	nvarchar	100		FALSE
Strength	strength	decimal	(19, 8)		TRUE
Test Date	test_date	smalldatetime		MM/dd/yyyy	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Type Fracture	type_fracture	varchar	50	{A, B, C, D, E}	TRUE

Determining Pavement Thickness By Direct Measurement (DB-423-A)

Table Name: VALUE_DB423A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Measure Unit	measure_unit	nvarchar	100	{Inches, Millimeters}	FALSE
Pavement Depth	pavement_depth	decimal	(19, 8)		TRUE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB423A_LOCATION **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Average	average	decimal	(19, 8)		TRUE
Measurement 1	measurement_1	decimal	(19, 8)		FALSE
Measurement 2	measurement_2	decimal	(19, 8)		FALSE
Measurement 3	measurement_3	decimal	(19, 8)		FALSE
Measurement Identification / Location	measurement_id_location	nvarchar	100		FALSE

Soil-Cement, Soil-Lime Testing (DB-120-E) ** INACTIVE **

Table Name: VALUE_DB120E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Avg. Corrected Stress, psi:	avg_corrected_stress_psi	decimal	(19, 8)		FALSE
Percent Cement, (%)	percent_cement	decimal	(19, 8)		TRUE
Performed By DB-120-E:	performed_by	nvarchar	200		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Target Percent Cement, %:	target_percent_cement	decimal	(19, 8)		FALSE
Target Stress, psi:	target_stress_psi	decimal	(19, 8)		FALSE
Tested By	tested_by	nvarchar	200	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB120E_SPECIMEN **Maximum Rows: 3**

Field Description	Field Name	Datatype	Length	Values	Required
Area, in.^2:	area	decimal	(19, 8)		FALSE
Avg. Corrected Stress, psi:	avg_corrected_stress	decimal	(19, 8)		FALSE
Avg. Cross Sectional Area, in^2:	avg_cross_section_area	decimal	(19, 8)		FALSE
Average Diameter, in.:	avg_diameter	decimal	(19, 8)		FALSE
Circumference, in.:	circumference	decimal	(19, 8)		FALSE
Corrected Stress, psi.:	corrected_stress	decimal	(19, 8)		FALSE
Dead Load, lbs.:	dead_load	decimal	(19, 8)		FALSE
Deformation at Max Load, in.	deformation_at_max_load	decimal	(19, 8)		FALSE
Height of Stone 1, in.	height_stone1	decimal	(19, 8)		FALSE
Height of Stone 2, in.	height_stone2	decimal	(19, 8)		FALSE
I-Strain, in./in.:	i_strain	decimal	(19, 8)		FALSE
Initial Height of Specimen, in.:	initial_height_specimen	decimal	(19, 8)		FALSE
Lateral Pressure, psi.:	lateral_pressure	decimal	(19, 8)		FALSE
Max. Load Reading, div.	max_load_reading	decimal	(19, 8)		FALSE
New Height of Specimen, in.:	new_height_specimen	decimal	(19, 8)		FALSE
% Strain , in./in.:	pct_strain	decimal	(19, 8)		FALSE
Percent Cement, (%)	percent_cement	decimal	(19, 8)		FALSE
Ring Factor, lbs./div	ring_factor	decimal	(19, 8)		FALSE
Specimen Number:	specimen_no	int			FALSE
Uncorr'd Stress, psi.:	uncorrected_stress	decimal	(19, 8)		FALSE

Soil-Lime Testing: DB-121-E (DB-121-E) ** INACTIVE **

Table Name: VALUE_DB121E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Average Corrected Strength, 00 psi	average_corrected_strength_0psi	decimal	(19, 8)		TRUE
Average Corrected Strength, 15 psi	average_corrected_strength_15psi	decimal	(19, 8)		FALSE
Classification	classification	nvarchar	100		FALSE
Cohesion, psi	cohesion_psi	decimal	(19, 8)		FALSE
Correlation Factor	correlation_factor	decimal	(19, 8)		FALSE
Grade, 00 psi	grade_0psi	nvarchar	100		FALSE
Grade, 15 psi	grade_15psi	nvarchar	100		FALSE
Internal Angle of Friction	internal_angle_friction	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE

Table Name: VALUE_DB121E_SPECIMEN **Maximum Rows: 8**

Field Description	Field Name	Datatype	Length	Values	Required
Area, in.^2	area	decimal	(19, 8)		FALSE
Avg. Cross Sectional Area, in^2	avg_cross_sectional_area	decimal	(19, 8)		FALSE
Average Diameter, in.	avg_diameter	decimal	(19, 8)		FALSE
Corrected Stress, psi.	corrected_stress_psi	decimal	(19, 8)		FALSE
Dry Density of Specimen, pcf	dry_density_specimen_pcf	decimal	(19, 8)		FALSE
Final Weight of Stones	final_weight_stones	decimal	(19, 8)		FALSE
Height of Stone 1, in.	height_stone1	decimal	(19, 8)		FALSE
Height of Stone 2, in.	height_stone2	decimal	(19, 8)		FALSE
I-Strain, in./in.	i_strain	decimal	(19, 8)		FALSE
Initial Height of Specimen, in.	initial_height	decimal	(19, 8)		FALSE
Lateral Pressure, psi.	lateral_pressure_psi	decimal	(19, 8)		FALSE
New Height of Specimen, in.	new_height	decimal	(19, 8)		FALSE
Moisture of Specimen, %	pct_moisture_specimen	decimal	(19, 8)		FALSE
% Strain , in./in.	pct_strain	decimal	(19, 8)		FALSE
Uncorrected Stress, psi.	uncorrected_stress_psi	decimal	(19, 8)		FALSE
Weight of Specimen	weight_specimen	decimal	(19, 8)		FALSE
Weight of Stones and Specimen	weight_stones_specimen	decimal	(19, 8)		FALSE

Density of Asphalt Stabilized Base (DB-126-E) ** INACTIVE **

Table Name: VALUE_DB126E **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Percent Asphalt in Mix(max)	asphalt_pct_max	decimal	(19, 8)		FALSE
Percent Asphalt in Mix(min)	asphalt_pct_min	decimal	(19, 8)		FALSE
Broken Method	broken_method	nvarchar	20	{Fast Break, Slow Break}	FALSE
Date Broken(max)(max)	date_broken_max	smalldatetime		MM/dd/yyyy	FALSE
Date Broken(min)	date_broken_min	smalldatetime		MM/dd/yyyy	FALSE
Density of Specimen(max)	density_of_specimen_max	decimal	(19, 8)		FALSE
Density of Specimen(min)	density_of_specimen_min	decimal	(19, 8)		FALSE
Gauge Reading(max)	gague_reading_psi_max	decimal	(19, 8)		FALSE
Gauge Reading (min)	gague_reading_psi_min	decimal	(19, 8)		FALSE
Height of Specimen(max)	height_max	decimal	(19, 8)		FALSE
Height of Specimen(min)	height_min	decimal	(19, 8)		FALSE
Measured Weight(max)	measured_weight_max	decimal	(19, 8)		FALSE
Measured Weight(min)	measured_weight_min	decimal	(19, 8)		FALSE
Minimum Allowable Density	min_allowable_density	decimal	(19, 8)		FALSE
Minimum Percent Density	min_pct_density	decimal	(19, 8)		FALSE
Minimum Specimen Unconfined Compressive Strength	min_specimen_UCS	decimal	(19, 8)		FALSE
Mold Number(max)	mold_number_max	nvarchar	100		FALSE
Mold Number(min)	mold_number_min	nvarchar	100		FALSE
Date Molded(max)	molded_date_max	smalldatetime		MM/dd/yyyy	FALSE
Date Molded(min)	molded_date_min	smalldatetime		MM/dd/yyyy	FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	datetime		MM/dd/yyyy	FALSE
Unconfined Compressive Strength (max)	UCS_max	nvarchar	100		FALSE
Unconfined Compressive Strength (min)	UCS_min	nvarchar	100		FALSE
Volume of Mold(max)	volume_of_mold_max	decimal	(19, 8)		FALSE
Volume of Mold(min)	volume_of_mold_min	decimal	(19, 8)		FALSE
Volume of Specimen(max)	volume_of_specimen_max	decimal	(19, 8)		FALSE
Volume of Specimen(min)	volume_of_specimen_min	decimal	(19, 8)		FALSE
Weight of Filters(max)	weight_of_filters_max	decimal	(19, 8)		FALSE
Weight of Filters(min)	weight_of_filters_min	decimal	(19, 8)		FALSE
Weight of Material(max)	weight_of_mat_max	decimal	(19, 8)		FALSE
Weight of Material(min)	weight_of_mat_min	decimal	(19, 8)		FALSE
Weight of Plates(max)	weight_of_plates_max	decimal	(19, 8)		FALSE
Weight of Plates(min)	weight_of_plates_min	decimal	(19, 8)		FALSE
Weight of Specimen(max)	weight_of_specimen_max	decimal	(19, 8)		FALSE
Weight of Specimen(min)	weight_of_specimen_min	decimal	(19, 8)		FALSE

Sieve Analysis of Surface Treatment Aggregate (DB-200-ST) ** INACTIVE **

Table Name: VALUE_DB200ST **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Sphalt	asphalt_pct	decimal	(19, 8)		FALSE
Dry Weight After Washing	dry_weight_after_washing	decimal	(19, 8)		FALSE
Moisture	moisture_pct	decimal	(19, 8)		FALSE
Original Dry Weight	orig_dry_weight	decimal	(19, 8)		FALSE
Total	pan_weight	decimal	(19, 8)		FALSE
Percent Difference	percent_difference	decimal	(19, 8)		FALSE
Sieving Loss	sieving_loss	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	datetime		MM/dd/yyyy	FALSE
Total Weight	total_weight	decimal	(19, 8)		FALSE
Type	type	nvarchar	100	{A, B, C, D, E, L, PA, PB, PC, PD, PE, PL}	FALSE
Washing Loss	washing_loss	decimal	(19, 8)		FALSE
Weight Difference	weight_difference	decimal	(19, 8)		FALSE
PrePan	weight_retained	decimal	(19, 8)		FALSE

Table Name: VALUE_DB200ST_SIEVE **Maximum Rows: 8**

Field Description	Field Name	Datatype	Length	Values	Required
Cumulative Percent Passing	cumulative_percent_passing	decimal	(19, 8)		FALSE
Lower Retained Limit	lower_retained_limit	decimal	(19, 8)		FALSE
Cumulative Percent Retained	percent_retained_cumulative	decimal	(19, 8)		FALSE
Individual Percent Retained	percent_retained_individual	decimal	(19, 8)		FALSE
Sieve Size	sieve_size	nvarchar	100		FALSE
Upper Retained Limit	upper_retained_limit	decimal	(19, 8)		FALSE
Cumulative Weight Retained	weight_retained_cumulative	decimal	(19, 8)		FALSE
Individual weight Retained	weight_retained_individual	decimal	(19, 8)		FALSE
Within Master Grading	within_master_grading	nvarchar	100		FALSE

Determining Flakiness Index (DB-224-F) ** INACTIVE **

Table Name: VALUE_DB224F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Flakiness Index	flakiness_index	decimal	(19, 8)		TRUE
Number of Particles	num_particles_1	decimal	(19, 8)		FALSE
Number of Particles	num_particles_2	decimal	(19, 8)		FALSE
Number of Particles	num_particles_3	decimal	(19, 8)		FALSE
Number of Particles Passing for 1/4" slot	slot_1_4	decimal	(19, 8)		FALSE
Number of Particles Passing for 3/8" slot	slot_3_8	decimal	(19, 8)		FALSE
Number of Particles Passing for 5/32" slot	slot_5_32	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE
Total Particles	total_particles	decimal	(19, 8)		FALSE
Total Passing Particles	total_passing_particles	decimal	(19, 8)		FALSE

Determining Draindown Characteristics in Bituminous Materials (DB-235-F) ** INACTIVE **

Table Name: VALUE_DB235F **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Average Percent of Draindown for Two Samples	avg_pct_draindown	decimal	(19, 8)		FALSE
Final Weight Plate	final_weight_plate_1	decimal	(19, 8)		FALSE
Final Weight Plate	final_weight_plate_2	decimal	(19, 8)		FALSE
Initial Sample Weight	init_sample_weight_1	decimal	(19, 8)		FALSE
Initial Sample Weight	init_sample_weight_2	decimal	(19, 8)		FALSE
Initial Weight Plate	init_weight_plate_1	decimal	(19, 8)		FALSE
Initial Weight Plate	init_weight_plate_2	decimal	(19, 8)		FALSE
Percent Of Draindown	pct_draindown_1	decimal	(19, 8)		FALSE
Percent Of Draindown	pct_draindown_2	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	datetime		MM/dd/yyyy	TRUE

Resistance To Degradation By Abrasion & Impact in Los Angeles Machine (DB-410-A) ** INACTIVE **

Table Name: VALUE_DB410A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Final Weight	final_weight	decimal	(19, 8)		FALSE
Initial Weight	initial_weight	decimal	(19, 8)		FALSE
La Abrasion Type	la_abrasion_type	nvarchar	100	CVL	FALSE
La Abrasion Value	la_abrasion_value	decimal	(19, 8)		FALSE
Loss of Weight	loss_of_weight	decimal	(19, 8)		FALSE
Number of Spheres	number_of_spheres	int			FALSE
Percent Loss	percent_loss	decimal	(19, 8)		FALSE
Sieve	sieve	nvarchar	100		FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	datetime		MM/dd/yyyy	FALSE
Weight of Charge	weight_of_charge	nvarchar	100		FALSE

Table Name: VALUE_DB410A_SAMPLE **Maximum Rows: 4**

Field Description	Field Name	Datatype	Length	Values	Required
Actual Weight	actual_weight	decimal	(19, 8)		FALSE
Passing Sieve	passing_sieve	nvarchar	100		FALSE
Projected Weight	projected_weight	nvarchar	100		FALSE
Retained Sieve	retained_sieve	nvarchar	100		FALSE
Within Range	within_range	bit			FALSE

Magnesium Sulfate Soundness (DB-411-M) ** INACTIVE **

Table Name: VALUE_DB411M **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Normalized Individual Percent Retained Total	ni_pct_retained_total	decimal	(19, 8)		FALSE
% Loss Total	pct_loss_total	decimal	(19, 8)		FALSE
Soundness Loss	soundness_loss	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Weighted Average % Loss Total	weighted_avg_pct_loss_total	decimal	(19, 8)		FALSE

Table Name: VALUE_DB411M_CYCLE **Maximum Rows: 5**

Field Description	Field Name	Datatype	Length	Values	Required
Cycle	cycle	nvarchar	5		FALSE
In Oven Date	in_oven_date	smalldatetime		MM/dd/yyyy	FALSE
In Oven Time In	in_oven_time_in	smalldatetime		MM/dd/yyyy	FALSE
In Oven Time Out	in_oven_time_out	smalldatetime		MM/dd/yyyy	FALSE
In Solution Date	in_solution_date	smalldatetime		MM/dd/yyyy	FALSE
In Solution Time In	in_solution_time_in	smalldatetime		MM/dd/yyyy	FALSE
In Solution Time Out	in_solution_time_out	smalldatetime		MM/dd/yyyy	FALSE
Out Oven Date	out_oven_date	smalldatetime		MM/dd/yyyy	FALSE
Out Oven Time In	out_oven_time_in	smalldatetime		MM/dd/yyyy	FALSE
Out Oven Time Out	out_oven_time_out	smalldatetime		MM/dd/yyyy	FALSE
Out Solution Date	out_solution_date	smalldatetime		MM/dd/yyyy	FALSE
Out Solution Time In	out_solution_time_in	smalldatetime		MM/dd/yyyy	FALSE
Out Solution Time Out	out_solution_time_out	smalldatetime		MM/dd/yyyy	FALSE
Remarks	remarks	nvarchar	250		FALSE

Table Name: VALUE_DB411M_PARTICLE **Maximum Rows: 8**

Field Description	Field Name	Datatype	Length	Values	Required
Final Weight (g)	final_weight	decimal	(19, 8)		FALSE
Initial Weight (g)	initial_weight	decimal	(19, 8)		FALSE
Loss of Weight (g)	loss_of_weight	decimal	(19, 8)		FALSE
Normalized Individual Percent Retained	ni_pct_retained	decimal	(19, 8)		FALSE
% Loss	pct_loss	decimal	(19, 8)		FALSE
Particle Size Range Passing	size_range_passing	nvarchar	100		FALSE
Particle Size Range Retained	size_range_retained	nvarchar	100		FALSE
Weighted Average % Loss	weighted_avg_pct_loss	decimal	(19, 8)		FALSE

Testing Of Drilled Cores Of Portland Cement Concrete (DB-424-A, Part III) ** INACTIVE **

Table Name: VALUE_DB424A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested By - Part II	tested_by_part2	nvarchar	100	CVL	FALSE
Tested By - Part III	tested_by_part3	nvarchar	100	CVL	FALSE
Tested Date	tested_date	datetime		MM/dd/yyyy	FALSE
Tested Date - Part II	tested_date_part2	datetime		MM/dd/yyyy	FALSE
Tested Date - Part III	tested_date_part3	datetime		MM/dd/yyyy	FALSE

Table Name: VALUE_DB424A_CORE **Maximum Rows: 4**

Field Description	Field Name	Datatype	Length	Values	Required
Age (Days)	age	int			FALSE
Compressive Strength	compressive_strength1	decimal	(19, 8)		FALSE
Compressive Strength	compressive_strength2	decimal	(19, 8)		FALSE
Diameter of Core (inches)	core_diameter1	decimal	(19, 8)		FALSE
Diameter of Core (inches)	core_diameter2	decimal	(19, 8)		FALSE
Length of Core (inches)	core_length1	decimal	(19, 8)		FALSE
Length of Core (inches)	core_length2	decimal	(19, 8)		FALSE
Core Number	core_number1	nvarchar	100		FALSE
Core Number	core_number2	nvarchar	100		FALSE
Failure Type	failure_type1	nvarchar	100		FALSE
Failure Type	failure_type2	nvarchar	100		FALSE
Max Load (Lbs)	max_load1	decimal	(19, 8)		FALSE
Max Load (Lbs)	max_load2	decimal	(19, 8)		FALSE

Texture Depth By Sand Patch Method (DB-436-A) ** INACTIVE **

Table Name: VALUE_DB436A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Average Diameter	avg_diameter	decimal	(19, 8)		FALSE
Diameter 1	measurement_1	decimal	(19, 8)		FALSE
Diameter 2	measurement_2	decimal	(19, 8)		FALSE
Diameter 3	measurement_3	decimal	(19, 8)		FALSE
Diameter 4	measurement_4	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	varchar	200	CVL	FALSE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	FALSE
Thickness	thickness	decimal	(19, 8)		FALSE
Volume of Cylinder	vol_cylinder	decimal	(19, 8)		FALSE

Concrete Sample - Beams (DB-448-A) ** INACTIVE **

Table Name: VALUE_DB448A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Actual Water	act_water	decimal	(19, 8)		FALSE
Added Gal	added_gal	decimal	(19, 8)		FALSE
Agg. Correction Factor	agg_corr_factor	decimal	(19, 8)	CVL	FALSE
Agg Size	agg_size	nvarchar	100	CVL	FALSE
Air Temperature	air_temp	decimal	(19, 8)		FALSE
Batch Size	batch_size	decimal	(19, 8)		FALSE
Batch Time	batch_time	smalldatetime		MM/dd/yyyy	FALSE
Class of Concrete	class_concrete	nvarchar	100	CVL	FALSE
Concrete Temperature	concrete_temp	decimal	(19, 8)		FALSE
Corrected Air Content	corrected_air_content	decimal	(19, 8)	CVL	FALSE
Design Water	des_water	decimal	(19, 8)		FALSE
Mix ID	mix_id	nvarchar	100	CVL	FALSE
Qty Load	qty_load	decimal	(19, 8)		FALSE
Req. Strength, psi	req_strength	decimal	(19, 8)		FALSE
Sample Time	sample_time	smalldatetime		MM/dd/yyyy	FALSE
Slump	slump	decimal	(19, 8)	CVL	FALSE
Specimen Dimensions	spec_dimensions	nvarchar	100	CVL	FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	datetime		MM/dd/yyyy	FALSE
Ticket Number	ticket_num	decimal	(19, 8)		FALSE
Total Water	total_water	decimal	(19, 8)		FALSE
Truck Number	truck_num	decimal	(19, 8)		FALSE
Unit Weight	unit_weight	decimal	(19, 8)		FALSE

Table Name: VALUE_DB448A_SPECIMEN **Maximum Rows: 6**

Field Description	Field Name	Datatype	Length	Values	Required
Age	age	nvarchar	100	CVL	FALSE
Avg Depth	avg_depth	decimal	(19, 8)		FALSE
Avg. Width	avg_width	decimal	(19, 8)		FALSE
Correction Factor	corr_factor	decimal	(19, 8)		FALSE
Max Load, lbs	max_load_psi	decimal	(19, 8)		FALSE
Mod Rupture	mod_rupture	decimal	(19, 8)		FALSE
Pass Fail	pass_fail	nvarchar	100		FALSE
Specimen	specimen	nvarchar	100		FALSE
Test Date	test_date	smalldatetime		MM/dd/yyyy	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE

Coarse Aggregate Angularity By Fractured Faces Count (DB-460-A) ** INACTIVE **

Table Name: VALUE_DB460A **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Number of Particles w/ one or no FF	number_of_particles_with_one	int			FALSE
Number of Particles w/ 2 or more FF	number_of_particles_with_two	int			FALSE
Number of Questionable Particles	number_of_questionable_particles	int			FALSE
Percent Crushed Particles	percent_crushed_particles	decimal	(19, 8)		FALSE
Percent Crushed Particles	percent_crushed_particles_result	decimal	(19, 8)		TRUE
Sieve Size	sieve_size	nvarchar	100		FALSE
Stamp Code	stamp_code	int		CVL	TRUE
Tested By	tested_by	nvarchar	100	CVL	TRUE
Tested Date	tested_date	smalldatetime		MM/dd/yyyy	TRUE
Total Number of Particles	total_number_of_particles	int			FALSE

Effect of Water On Bituminous Paving Mixtures (DB-530-C) ** INACTIVE **

Table Name: VALUE_DB530C **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Estimated Percent of Stripping	est_pct_stripping	nvarchar	100		FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	datetime		MM/dd/yyyy	FALSE

Determining Chloride and Sulfate Content in Soils (DB-620-J) ** INACTIVE **

Table Name: VALUE_DB620J **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values	Required
Chloride (CL) (PPM)	chloride_ppm	decimal	(19, 8)		FALSE
Crucible + Residue Weight	crucible_residue_weight	decimal	(19, 8)		FALSE
Crucible Weight	crucible_weight	decimal	(19, 8)		FALSE
Ending	ending	decimal	(19, 8)		FALSE
Normality of AgNO3	normality_of_agno3	decimal	(19, 8)		FALSE
Residue Weight	residue_weight	decimal	(19, 8)		FALSE
Sample Weight	sample_weight_chloride	decimal	(19, 8)		FALSE
Sample Weight	sample_weight_sulfate	decimal	(19, 8)		FALSE
Stamp Code	stamp_code	int		CVL	FALSE
Starting	starting	decimal	(19, 8)		FALSE
Sulfate (SO4) (PPM)	sulfate_ppm	decimal	(19, 8)		FALSE
Tested By	tested_by	nvarchar	100	CVL	FALSE
Tested Date	tested_date	nvarchar	100		FALSE
Total	total	decimal	(19, 8)		FALSE

CQAF Sample

File: CQAFSample.xml
File Type: XML (Extensible Markup Language). The de facto standard for transferring data.
File Description: An example of an electronic submission that can be read into I2MS. The example provided was used for a previous project and passed the verification process for that particular project's inputs. This file can be submitted to I2MS via a web service run on I2MS using SOAP (Simple Object Access Protocol), which is a standard programming protocol by which software developers send data between systems.

CQAF Sample

```
<?xml version='1.0' encoding='UTF-8'?>
<form name="DB-115-1" version_no="1.0" key="0020905270501151" date="2009-05-27T00:00:00" display_key="00209052705">
	<owner_name value="CQAF" />
	<security username="CQAFDataXfer" password="as9-3958$h@" />
	<header>
		<column name="sample_id" value="00209052705" />
		<column name="sampled_date" value="5/27/2009 12:00:00 AM" />
		<column name="sample_type" value="Random-Independent" />
		<column name="split_sample_id" />
		<column name="report_type" value="Original" />
		<column name="section" value="5.1" />
		<column name="sampled_by" value="Al Jones" />
		<column name="spec_year" value="2004" />
		<column name="material" value="14" />
		<column name="spec_item" value="247" />
		<column name="supplier" value="Pit" />
		<column name="special_provision" />
		<column name="structure_number" />
		<column name="grade" value="1" />
		<column name="sample_location" />
		<column name="feature" value="Mainlane" />
		<column name="course_lift" value="2" />
		<column name="station" value="342+49" />
		<column name="dist_from_cl" value="5' LT" />
		<column name="misc" />
		<column name="roadway" value="Loop 375" />
		<column name="direction" value="NB" />
	</header>
	<test name="DB-115-1">  <!-- This can be the same value as the form name. -->
		<table name="VALUE_DB115_1">
			<row>
				<column  name="determined_by_test_method"  value="DB-113-E" />
				<column name="max_dry_density_pcf" value="132.5" />
				<column name="optimum_moisture_content_pct" value="7.7" />
				<column name="density_standard" value="4200" />
				<column name="moisture_standard" value="420" />
				<column name="density_count" value="1045" />
				<column name="moisture_count" value="231" />
				<column name="probe_depth" value="10" />
				<column name="wet_density_pcf" value="140.5" />
				<column name="dry_density_pcf" value="133.5" />
				<column name="moisture_content_pct" value="5.2" />
				<column name="gauge_no" value="3242" />
				<column name="moisture_content_pct_pass_fail" />
				<column name="density_pct" value="100.7" />
				<column name="density_pct_pass_fail" />
```

CQAF Sample

```
                        <column name="density_specification_req_max" />
                        <column name="moisture_specification_req_max" />
                        <column name="soil_desc" />
                        <column name="density_specification_req_min" value="100" />
                        <column name="moisture_specification_req_min" value="5.2" />
                        <column name="tested_by" value="Al Jones" />
                        <column name="tested_date" value="5/27/2009 12:00:00 AM" />
                        <column name="stamp_code" value="1" />
                    </row>
                </table>
            </test>
            <footer>
                <column name="remarks" />
                <column name="reviewed_by" />
                <column name="completed_date" />
                <column name="authorized_by" />
                <column name="authorized_date" />
            </footer>
</form>
```

Web Form Validation

File: WebFormValidation.xsd
File Type: XSD (XML Schema Document). Describes a schema used for an XML document.
File Description: Describes elements, annotations, and documentation used in the aforementioned XML. XSD files are the standard used to describe XML file formats and are often used to assist in developing XML files with added features such as intellisense (which is an added type ahead feature used by developers).

Web Form Validation

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema id="FormValidation" xmlns:xs="http://www.w3.org/2001/XMLSchema">
   <xs:element name="form">
      <xs:complexType>
         <xs:sequence>
            <xs:choice minOccurs="1" maxOccurs="1" id="owner">
                  <xs:annotation>
                        <xs:documentation>
                              The owner of the record must be supplied to upload successfully. The user login provided in the security element
                              must have permission to add a record for the owner as part of the validation process.

                              The record owner can be identified by a variety of properties.  In general, when submitting XML from an external source,
                              the owner_name attribute is the preferred method.
                        </xs:documentation>
                  </xs:annotation>
               <xs:element name="owner_name" minOccurs="1" maxOccurs="1">
                  <xs:annotation>
                        <xs:documentation>
                              The name of the owner of this record.  For example, "OVF" or "CQAF".
                        </xs:documentation>
                  </xs:annotation>
                  <xs:complexType>
                     <xs:attribute name="value" type="xs:string" use="required" />
                  </xs:complexType>
               </xs:element>
               <xs:element name="owner_guid" minOccurs="1" maxOccurs="1">
                  <xs:complexType>
                     <xs:attribute name="value" type="xs:string" use="required" />
                  </xs:complexType>
               </xs:element>
               <xs:element name="owner_id" minOccurs="1" maxOccurs="1">
                  <xs:complexType>
                     <xs:attribute name="value" type="xs:int" use="required" />
                  </xs:complexType>
               </xs:element>
            </xs:choice>
            <xs:element name="security" minOccurs="1" maxOccurs="1">
                  <xs:annotation>
                        <xs:documentation>
                              User login credentials must be provided to upload a record. Supply a username and password.
                        </xs:documentation>
                  </xs:annotation>
               <xs:complexType>
```

```
            <xs:attribute name="user_guid" type="xs:string" />
            <xs:attribute name="username" type="xs:string" />
            <xs:attribute name="password" type="xs:string" />
         </xs:complexType>
      </xs:element>
      <xs:element name="header" minOccurs="0" maxOccurs="1">
         <xs:annotation>
            <xs:documentation>
               The collection of header column values common to multiple forms.
            </xs:documentation>
         </xs:annotation>
         <xs:complexType>
            <xs:sequence>
               <xs:element name="column" type="ColumnType" maxOccurs="unbounded" />
            </xs:sequence>
         </xs:complexType>
      </xs:element>
      <xs:element name="test" minOccurs="0" maxOccurs="unbounded">
         <xs:annotation>
            <xs:documentation>
               Container element for Body Table elements, which contain the data specific to the form type being uploaded.
               This element can be used to logically group the body tables by the test method they represent, but it is not required to do so.
               All body table elements can be placed under one test element, and the test name attribute is inconsequential.
            </xs:documentation>
         </xs:annotation>
         <xs:complexType>
            <xs:sequence>
               <xs:element name="table" minOccurs="1" maxOccurs="unbounded">
                  <xs:annotation>
                     <xs:documentation>
                        A collection of rows of form data for a specific table.

                        The number of rows permitted for each table depends on the form and table name. For testing forms, the number of rows allowed for each table can be found in the I2MS Test Form Fields report.
                     </xs:documentation>
                  </xs:annotation>
                  <xs:complexType>
                     <xs:sequence>
                        <xs:element name="row" minOccurs="0" maxOccurs="unbounded">
                           <xs:annotation>
                              <xs:documentation>
                                 A collection of body column values.
                              </xs:documentation>
                           </xs:annotation>
```

Web Form Validation

```
                                    <xs:complexType>
                                    <xs:sequence>
                                       <xs:element name="column" type="ColumnType"
minOccurs="0" maxOccurs="unbounded" />
                                    </xs:sequence>
                                 </xs:complexType>
                              </xs:element>
                           </xs:sequence>
                           <xs:attribute name="name" type="xs:string" use="required">
                                 <xs:annotation>
                                       <xs:documentation>
                                             The name of the body table.

                                             For testing forms, the list of supported table names
can be found in the I2MS Test Form Fields report.
                                       </xs:documentation>
                                 </xs:annotation>
                           </xs:attribute>
                        </xs:complexType>
                     </xs:element>
                  </xs:sequence>
                  <xs:attribute name="name" type="xs:string" use="required" />
               </xs:complexType>
            </xs:element>
            <xs:element name="footer" minOccurs="0" maxOccurs="1">
               <xs:annotation>
                     <xs:documentation>
                           The collection of footer column values common to multiple forms.
                     </xs:documentation>
               </xs:annotation>
               <xs:complexType>
                  <xs:sequence>
                     <xs:element name="column" type="ColumnType" minOccurs="0"
maxOccurs="unbounded" />
                  </xs:sequence>
               </xs:complexType>
            </xs:element>
         </xs:sequence>
         <xs:attribute name="name" form="unqualified" type="xs:string" use="required" >
               <xs:annotation>
                     <xs:documentation>
                           The short name of the I2MS form for which data is being
submitted.  This value determines the data columns that are supported and required
                           for the header, body, and footer elements.

                           For testing forms, the list of supported form names can be found
in the I2MS Test Form Fields report.
```

Web Form Validation

The form name is the value in parentheses for each subheading under the Body Fields section.

```
                </xs:documentation>
            </xs:annotation>
        </xs:attribute>
        <xs:attribute name="key" form="unqualified" use="required">
            <xs:annotation>
                <xs:documentation>
                    A value representing the test record in I2MS.  This value is required to be unique for each owner (OVF/CQAF).
                    The same key is used for all revisions of the record.  To add a new revision, supply the same key with the new form data and a
                    new value for the version_no attribute.
                </xs:documentation>
            </xs:annotation>
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:maxLength value="100"></xs:maxLength>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="version_no" use="required">
            <xs:annotation>
                <xs:documentation>
                    The version number of this revision within the series of revisions identified by the key attribute.
                    The revision in the series with the greatest version number will be considered the latest revision regardless of the order in which revisions were submitted to I2MS.
                    Submitting a record with the same key and version number as another record in the system is an error.
                </xs:documentation>
            </xs:annotation>
            <xs:simpleType>
                <xs:restriction base="xs:decimal">
                    <xs:totalDigits value="19" />
                    <xs:fractionDigits value="9" />
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="display_key">
            <xs:annotation>
                <xs:documentation>
                    The value displayed to users as the ID value of the record (for example, Sample ID for testing forms).
                    This value is not required to be unique.
                </xs:documentation>
            </xs:annotation>
            <xs:simpleType>
                <xs:restriction base="xs:string">
```

```
                        <xs:maxLength value="100"></xs:maxLength>
                    </xs:restriction>
                </xs:simpleType>
            </xs:attribute>
            <xs:attribute name="version_key">
                <xs:annotation>
                    <xs:documentation>
                        An optional identifier for this revision.  For example, when submitting XML to I2MS from an external source,
                        this could be the Version ID of the record in the external system.
                    </xs:documentation>
                </xs:annotation>
                <xs:simpleType>
                    <xs:restriction base="xs:string">
                        <xs:maxLength value="100"></xs:maxLength>
                    </xs:restriction>
                </xs:simpleType>
            </xs:attribute>
            <xs:attribute name="action_name" type="xs:string">
                <xs:annotation>
                    <xs:documentation>
                        The name of a custom workflow action to execute when submitting the form.  The user login submitting the form
                        must have permissions in I2MS for the action and validation rules must pass before allowing the action.

                        When submitting XML to I2MS from an external source, this attribute should generally be omitted unless other
                        instructions have been provided.
                    </xs:documentation>
                </xs:annotation>
            </xs:attribute>
            <xs:attribute name="date" type="xs:dateTime">
                <xs:annotation>
                    <xs:documentation>
                        The value displayed to users as the date of the record (for example, Sampled Date for testing forms).
                    </xs:documentation>
                </xs:annotation>
            </xs:attribute>
        </xs:complexType>
    </xs:element>

            <xs:complexType name="ColumnType">
            <xs:attribute name="name" type="xs:string" use="required">
                <xs:annotation>
                    <xs:documentation>
                        The name of the column for which a value is being provided.
```

Web Form Validation

For testing forms, the list of supported data columns can be found in the I2MS Test Form Fields report.

```
                    </xs:documentation>
                </xs:annotation>
            </xs:attribute>
        <xs:attribute name="value" type="xs:string" use="optional">
            <xs:annotation>
                <xs:documentation>
                    The value of the column.
                </xs:documentation>
            </xs:annotation>
        </xs:attribute>
            </xs:complexType>

</xs:schema>
```

Form Submission Service

File: FormSubmissionService.wsdl
File Type: WSDL (Web Services Description Language). Describes a web service and its respective protocols in XML format.
File Description: Describes the web service used by I2MS for submitting data electronically for the purposes of Validation (i.e. Verification) and Submission. The I2MS system takes in data electronically via a web service (often via the SOAP protocol), for the purposes of verifying or submitting a test (submitted in XML format).

Form Submission Service

```
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:s="http://www.w3.org/2001/XMLSchema"
xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/" xmlns:tns="http://tempuri.org/"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tm="http://microsoft.com/wsdl/mime/textMatching/"
xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
targetNamespace="http://tempuri.org/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:types>
    <s:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/">
      <s:element name="SubmitForm">
        <s:complexType>
          <s:sequence>
            <s:element minOccurs="0" maxOccurs="1" name="xmlForm" type="s:string" />
          </s:sequence>
        </s:complexType>
      </s:element>
      <s:element name="SubmitFormResponse">
        <s:complexType>
          <s:sequence>
            <s:element minOccurs="1" maxOccurs="1" name="SubmitFormResult" type="s:int" />
          </s:sequence>
        </s:complexType>
      </s:element>
      <s:element name="ValidateForm">
        <s:complexType>
          <s:sequence>
            <s:element minOccurs="0" maxOccurs="1" name="xmlForm" type="s:string" />
          </s:sequence>
        </s:complexType>
      </s:element>
      <s:element name="ValidateFormResponse">
        <s:complexType>
          <s:sequence>
            <s:element minOccurs="0" maxOccurs="1" name="ValidateFormResult" type="s:string"
/>
          </s:sequence>
        </s:complexType>
      </s:element>
    </s:schema>
  </wsdl:types>
  <wsdl:message name="SubmitFormSoapIn">
    <wsdl:part name="parameters" element="tns:SubmitForm" />
  </wsdl:message>
  <wsdl:message name="SubmitFormSoapOut">
    <wsdl:part name="parameters" element="tns:SubmitFormResponse" />
  </wsdl:message>
```

Form Submission Service

```
 <wsdl:message name="ValidateFormSoapIn">
   <wsdl:part name="parameters" element="tns:ValidateForm" />
  </wsdl:message>
  <wsdl:message name="ValidateFormSoapOut">
   <wsdl:part name="parameters" element="tns:ValidateFormResponse" />
  </wsdl:message>
  <wsdl:portType name="FormSubmissionServiceSoap">
   <wsdl:operation name="SubmitForm">
    <wsdl:input message="tns:SubmitFormSoapIn" />
    <wsdl:output message="tns:SubmitFormSoapOut" />
   </wsdl:operation>
   <wsdl:operation name="ValidateForm">
    <wsdl:input message="tns:ValidateFormSoapIn" />
    <wsdl:output message="tns:ValidateFormSoapOut" />
   </wsdl:operation>
  </wsdl:portType>
  <wsdl:binding                                          name="FormSubmissionServiceSoap"
type="tns:FormSubmissionServiceSoap">
   <soap:binding transport="http://schemas.xmlsoap.org/soap/http" />
   <wsdl:operation name="SubmitForm">
    <soap:operation soapAction="http://tempuri.org/SubmitForm" style="document" />
    <wsdl:input>
     <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
     <soap:body use="literal" />
    </wsdl:output>
   </wsdl:operation>
   <wsdl:operation name="ValidateForm">
    <soap:operation soapAction="http://tempuri.org/ValidateForm" style="document" />
    <wsdl:input>
     <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
     <soap:body use="literal" />
    </wsdl:output>
   </wsdl:operation>
  </wsdl:binding>
  <wsdl:binding                                        name="FormSubmissionServiceSoap12"
type="tns:FormSubmissionServiceSoap">
   <soap12:binding transport="http://schemas.xmlsoap.org/soap/http" />
   <wsdl:operation name="SubmitForm">
    <soap12:operation soapAction="http://tempuri.org/SubmitForm" style="document" />
    <wsdl:input>
     <soap12:body use="literal" />
    </wsdl:input>
    <wsdl:output>
     <soap12:body use="literal" />
```

Form Submission Service

```
  </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="ValidateForm">
      <soap12:operation soapAction="http://tempuri.org/ValidateForm" style="document" />
      <wsdl:input>
        <soap12:body use="literal" />
      </wsdl:input>
      <wsdl:output>
        <soap12:body use="literal" />
      </wsdl:output>
    </wsdl:operation>
  </wsdl:binding>
  <wsdl:service name="FormSubmissionService">
    <wsdl:port                                          name="FormSubmissionServiceSoap"
binding="tns:FormSubmissionServiceSoap">
      <soap:address                                                  location="https://i2ms-
sh130.txdot.gov/i2ms/i2ms/formsubmissionservice.asmx" />
    </wsdl:port>
    <wsdl:port                                        name="FormSubmissionServiceSoap12"
binding="tns:FormSubmissionServiceSoap12">
      <soap12:address                                                location="https://i2ms-
sh130.txdot.gov/i2ms/i2ms/formsubmissionservice.asmx" />
    </wsdl:port>
  </wsdl:service>
</wsdl:definitions>
```

Texas Department of Transportation
Book 2 – Technical Provisions

Grand Parkway Project

Attachment 6-1
Utility Forms

May 3, 2012

Utility Forms

- PUAA – Developer Managed
- PUAA – Owner Managed
- SH 99 – UAA – Developer Managed
- SH 99 – UAA – Owner Manage

PROJECT UTILITY ADJUSTMENT AGREEMENT
(Developer Managed)
Agreement No.: -U-_____

THIS AGREEMENT, by and between , hereinafter identified as the "**Developer**", and _____, hereinafter identified as the "**Owner**", is as follows:

WITNESSETH

WHEREAS, the STATE OF TEXAS, acting by and through the Texas Department of Transportation, hereinafter identified as "TxDOT", is authorized to design, construct, operate, maintain, and improve turnpike projects as part of the state highway system throughout the State of Texas, all in conformance with the provisions of Chapters 201, 203, 222, 223, 224, and 228 Texas Transportation Code, as amended; and

WHEREAS, the TxDOT proposes to construct a toll project identified as (the "Project"); and

WHEREAS, pursuant to that certain Comprehensive Development Agreement by and between TxDOT and the Developer with respect to the Project (the "CDA"), the Developer has undertaken the obligation to design, construct, finance, operate and maintain the Project and adhere to all requirements in the CDA; and

WHEREAS, the Developer's duties pursuant to the CDA include causing the relocation, removal or other necessary adjustment of existing utilities impacted by the Project (collectively, "Adjustment"), subject to the provisions herein; and

WHEREAS, the Project may receive Federal funding, financing and/or credit assistance; and

WHEREAS, the Developer has notified the Owner that certain of its facilities and appurtenances (the "Owner Utilities") are in locational conflict with the Project (and/or with the "Ultimate Configuration" of the Project), and the Owner has requested that the Developer undertake the Adjustment of the Owner Utilities as necessary to accommodate the Project (and the Ultimate Configuration) and Owner agrees that the "Project" will be constructed in accordance with §203.092, Texas Transportation Code, as amended, Rule 21.23 of Title 43 Tex. Admin. Code, and 23 CFR 645 Subpart A (Utility Relocations, Adjustments and Reimbursement); and

WHEREAS, the Owner Utilities and the proposed Adjustment of the Owner Utilities are described as follows *[insert below a description of the affected facilities (by type, size and location) as well as a brief description of the nature of the Adjustment work to be performed (e.g., "adjust 12" waterline from approximately Highway Station 100+00 to approximately Highway Station 200+00")]:*
_____*;* and

WHEREAS, the Owner recognizes that time is of the essence in completing the work contemplated herein; and

WHEREAS, the Developer and the Owner desire to implement the Adjustment of the Owner Utilities by entering into this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of these premises and of the mutual covenants and agreements of the parties hereto and other good and valuable consideration, the receipt and sufficiency of which being hereby acknowledged, the Developer and the Owner agree as follows:

1. **Preparation of Plans.** [Check one box that applies:]

☐ The Developer has hired engineering firm(s) acceptable to the Owner to perform all engineering services needed for the preparation of plans, required specifications, and cost estimates, attached hereto as Exhibit A (collectively, the "Plans"), for the proposed Adjustment of the Owner Utilities. The Developer represents and warrants that the Plans conform to the most recent Utility Accommodation Rules issued by the Texas Department of Transportation ("TxDOT"), set forth in 43 Tex. Admin. Code Part 1, Chapter 21, Subchapter C *et seq*., (the "UAR"). By its execution of this Agreement or by the signing of the Plans, the Owner hereby approves the Plans and confirms that the Plans are in compliance with the "standards" described in Paragraph 3(a)(4).

☐ The Owner has provided plans, required specifications and cost estimates, attached hereto as Exhibit A (collectively, the "Plans"), for the proposed Adjustment of the Owner Utilities. The Owner represents and warrants that the Plans conform to the UAR. By its execution of this Agreement, the Developer and the Owner hereby approve the Plans. The Owner also has provided to the Developer a utility plan view map illustrating the location of existing and proposed utility facilities on the Developer's right of way map of the Project. With regard to its preparation of the Plans, the Owner represents as follows *[check one box that applies]*:

☐ The Owner's employees were utilized to prepare the Plans, and the charges therefore do not exceed the Owner's typical costs for such work.

☐ The Owner utilized consulting engineers to prepare the Plans, and the fees for such work are not based upon a percentage of construction costs. Further, such fees encompass only the work necessary to prepare the Plans for Adjustment of the Owner Utilities described herein, and do not include fees for work done on any other project. The fees of the consulting engineers are reasonable and are comparable to the fees typically charged by consulting engineers in the locale of the Project for comparable work for the Owner.

2. **Review by TxDOT.** The parties hereto acknowledge and agree as follows:

(a) Upon execution of this Agreement by the Developer and the Owner, the Developer will submit this Agreement, together with the attached Plans, to TxDOT for its review and approval as part of a package referred to as a "Utility Assembly". The parties agree to cooperate in good faith to modify this Agreement and/or the Plans, as necessary and mutually acceptable to all parties, to respond to any comments made by TxDOT thereon. Without limiting the generality of the foregoing, (i) the Owner agrees to respond (with comment and/or acceptance) to any modified Plans and/or Agreement prepared by the Developer in response to TxDOT comments within **fourteen (14) business days** after receipt of such modifications; and (ii) if the Owner originally prepared the Plans, the Owner agrees to modify the Plans in response to TxDOT comments and to submit such modified Plans to the Developer for its comment and/or approval (and re-submittal to

TxDOT for its comment and/or approval) within **fourteen (14) business days** after receipt of TxDOT's comments. The Owner's failure to timely respond to any modified Plans submitted by the Developer pursuant to this paragraph shall be deemed the Owner's approval of same. If the Owner fails to timely prepare modified Plans which are its responsibility hereunder, then the Developer shall have the right to modify the Plans for the Owner's approval as if the Developer had originally prepared the Plans. The process set forth in this paragraph will be repeated until the Owner, Developer and TxDOT have all approved this Agreement and accepted the Plans.

(b) The parties hereto acknowledge and agree that TxDOT's review, comments, and/or approval of a Utility Assembly or any component thereof shall constitute TxDOT's approval of the location and manner in which a Utility Assembly will be installed, adjusted, or relocated within the state highway right of way(the "ROW"), subject to the Developer's and Owner's satisfactory performance of the Adjustment work in accordance with the approved Plans. TxDOT has no duty to review Owner Facilities or components for their quality or adequacy to provide the intended utility service.

3. **Design and Construction Standards**.

(a) All design and construction performed for the Adjustment work which is the subject of this Agreement shall comply with and conform to the following:

(1) All applicable local and state laws, regulations, decrees, ordinances and policies, including the UAR, the Utility Manual issued by TxDOT (to the extent its requirements are mandatory for the Adjustment necessitated by the Project, as communicated to the Owner by the Developer, or TxDOT), the requirements of the CDA, and the policies of TxDOT;

(2) All Federal laws, regulations, decrees, ordinances and policies applicable to projects receiving Federal funding, financing and/or credit assistance, including without limitation 23 CFR 645 Subparts A and B;

(3) The terms of all governmental permits or other approvals, as well as any private approvals of third parties necessary for such work; and

(4) The standard specifications, standards of practice, and construction methods (collectively, "standards") which the Owner customarily applies to utility facilities comparable to the Owner Utilities that are constructed by the Owner or for the Owner by its contractors at the Owner's expense, which standards are current at the time this Agreement is signed by the Owner, and which the Owner has submitted to the Developer in writing.

(5) Owner agrees that all service meters must be placed outside of the State ROW.

(b) Such design and construction also shall be consistent and compatible with (i) the Developer's 's current design and construction of the Project, (ii) the "Ultimate Configuration" for the Project, and (iii) any other utilities being installed in the same vicinity. The Owner acknowledges receipt from the Developer of Project plans and Ultimate Configuration documents as necessary to comply with the foregoing. In case of any

inconsistency among any of the standards referenced in this Agreement, the most stringent standard shall apply.

(c) The plans, specifications, and cost estimates contained in Exhibit A shall identify and detail all utility facilities that the Owner intends to abandon in place rather than remove, including material type, quantity, size, age, and condition. No facilities containing hazardous or contaminated materials may be abandoned, but shall be specifically identified and removed in accordance with the requirements of subparagraph (a). It is understood and agreed that the Developer shall not pay for the assessment and remediation or other corrective action relating to soil and ground water contamination caused by the utility facility prior to the removal.

4. **Responsibility for Costs of Adjustment Work**. With the exception of any Betterment (hereinafter defined), the parties shall allocate the cost of any Adjustment between themselves as identified in Exhibit A and in accordance with § 203.092, Texas Transportation Code. An allocation percentage may be determined by application of an eligibility ratio, if appropriate, as detailed in Exhibit A.

5. **Construction by the Developer**.

(a) The Owner hereby requests that the Developer perform the construction necessary to adjust the Owner Utilities and the Developer hereby agrees to perform such construction. All construction work hereunder shall be performed in a good and workmanlike manner, and in accordance with the Plans (except as modified pursuant to Paragraph 16).

(b) The Developer shall retain such contractor or contractors as are necessary to adjust the Owner Utilities.

(c) The Developer shall obtain all permits necessary for the construction to be performed by the Developer hereunder, and the Owner shall cooperate in that process as needed.

6. **Reimbursement of Owner's Indirect Costs**.

(a) Developer agrees to reimburse the Owner its share of the Owner's indirect costs (e.g., engineering, inspection, testing, ROW) as identified in Exhibit A. When requested by the Owner, monthly progress payments will be made. The monthly payment will not exceed 80% of the estimated indirect work done to date. Once the indirect work is complete, final payment of the eligible indirect costs will be made. Intermediate payments shall not be construed as final payment for any items included in the intermediate payment.

(b) The Owner's indirect costs associated with Adjustment of the Owner Utilities shall be developed pursuant to the method checked and described below *[check only one box]*:

☐ (1) Actual related indirect costs accumulated in accordance with (i) a work order accounting procedure prescribed by the applicable Federal or State regulatory body, or (ii) established accounting procedure developed by the Owner and which the Owner uses in its regular operations (either (i) or (ii) referred to as "Actual Cost") or,

☐ (2) The agreed sum of $_____ ("Agreed Sum") as supported by the analysis of the Owner's estimated costs attached hereto as part of Exhibit A.

(c) All indirect costs charged to the Developer by the Owner shall be reasonable and shall be computed using rates and schedules not exceeding those applicable to similar work performed by or for the Owner at the Owner's expense. Developer's performance of the Adjustment work hereunder and payment of the Developer's share of the Owner's costs pursuant to this Agreement, if applicable, shall be full compensation to the Owner for all costs incurred by the Owner in Adjusting the Owner Utilities (including without limitation costs of relinquishing and/or acquiring right of way).

7. **Advancement of Funds by Owner for Construction Costs**.

(a) Advancement of Owner's share, if any, of estimated costs

Exhibit A shall identify all estimated engineering and construction-related costs, including labor, material, equipment and other miscellaneous construction items. Exhibit A shall also identify the Owner's and Developer's respective shares of the estimated costs.

The Owner shall advance to the Developer its allocated share, if any, of the estimated costs for construction and engineering work to be performed by the Developer, in accordance with the following terms:

☐ The adjustment of the Owner's Utilities does not require advancement of funds.

☐ The adjustment of the Owner's Utilities does require advancement of funds and the terms agreed to between the Developer and Owner are listed below.

[Insert terms of advance funding to be agreed between Developer and Owner.]

(b) Adjustment Based on Actual Costs or Agreed Sum

[Check the <u>one</u> appropriate provision, if advancement of funds is required]:

☐ The Owner is responsible for its share of the Developer's actual cost for the Adjustment, including the identified Betterment. Accordingly, upon completion of all Adjustment work to be performed by both parties pursuant to this Amendment, (i) the Owner shall pay to the Developers the amount, if any, by which the actual cost of the Betterment (as determined in Paragraph 9(b)) plus the actual cost of Owner's share of the Adjustment (based on the allocation set forth in Exhibit A) exceeds the estimated cost advanced by the Owner, or (ii) the Developer shall refund to the Owner the amount, if any, by which such advance exceeds such actual cost, as applicable.

☐ The Agreed Sum is the agreed and final amount due for the Adjustment, including any Betterment, under this Amendment. Accordingly, no adjustment (either up or down) of such amount shall be made based on actual costs.

8. **Invoices.** On invoices prepared by either the Owner or the Developer, all costs developed using the "Actual Cost" method described in Section 6(b)(1) shall be itemized in a format allowing for comparisons to the approved estimates, including listing each of the services performed, the amount of time spent and the date on which the service was performed. The original and three (3) copies of each invoice, together with (1) such supporting information to substantiate all invoices as reasonably requested, and (2) such waivers and releases of liens as the other party may reasonably require, shall be submitted to the other party at the address for notices stated in Paragraph 22, unless otherwise directed pursuant to Paragraph 22. The Owner and the Developer shall make commercially reasonable efforts to submit final invoices not later than one hundred twenty (120) days after completion of work. The Owner and the Developer hereby acknowledge

and agree that any costs not submitted to the other party within eighteen months following completion of all Adjustment work to be performed by the parties pursuant to this Agreement shall be deemed to have been abandoned and waived.

9. **Betterment and Salvage**

(a) For purposes of this Agreement, the term "Betterment" means any upgrading of an Owner Utility being adjusted that is not attributable to the construction of the Project and is made solely for the benefit of and at the election of the Owner, including but not limited to an increase in the capacity, capability, efficiency or function of the adjusted Utility over that provided by the existing Utility facility or an expansion of the existing Utility facility; provided, however, that the following are not considered Betterments:

(i) any upgrading which is required for accommodation of the Project;

(ii) replacement devices or materials that are of equivalent standards although not identical;

(iii) replacement of devices or materials no longer regularly manufactured with the next highest grade or size;

(iv) any upgrading required by applicable laws, regulations or ordinances;

(v) replacement devices or materials which are used for reasons of economy (e.g., non-stocked items may be uneconomical to purchase); or

(vi) any upgrading required by the Owner's written "standards" meeting the requirements of Paragraph 3(d).

[Include the following for fiber optic Owner Utilities only:] Extension of an Adjustment to the nearest splice boxes shall not be considered a Betterment if required by the Owner in order to maintain its written telephony standards.

Any upgrading required by the Owner's written "standards" meeting the requirements of Paragraph 3(a)(4) shall be deemed to be of direct benefit to the Project.

(b) It is understood and agreed that the Developer shall not pay for any Betterments and that the Owner shall be solely responsible therefor. No Betterment may be performed hereunder which is incompatible with the Project or the Ultimate Configuration or which cannot be performed within the other constraints of applicable law, any applicable governmental approvals, including without limitation the scheduling requirements thereunder. Accordingly, the parties agree as follows *[check one box that applies, and complete if appropriate]*:

☐ The Adjustment of the Owner Utilities pursuant to the Plans does not include any Betterment.

☐ The Adjustment of the Owner Utilities pursuant to the Plans includes Betterment to the Owner Utilities by reason of *[insert explanation, e.g. "replacing 12" pipe with 24" pipe]*:_____. The Developer has provided to the Owner comparative estimates for (i) all work to be performed by the Developer pursuant to this Agreement, including work attributable to the Betterment, and (ii) the cost to

perform such work without the Betterment, which estimates are hereby approved by the Owner. The estimated cost of the Developer's work hereunder which is attributable to Betterment is $_____, calculated by subtracting (ii) from (i). The percentage of the total cost of the Developer's work hereunder which is attributable to Betterment is _____%, calculated by subtracting (ii) from (i), which remainder is divided by (i).

(c) If Paragraph 9(b) identifies Betterment, the Owner shall advance to the Developer, at least **fourteen (14) business days** prior to the date scheduled for commencement of construction for Adjustment of the Owner Utilities, the estimated cost attributable to Betterment as set forth in Paragraph 9(b). Should the Owner fail to advance payment to the Developer fourteen (14) business days prior to commencement of the Adjustment construction, the Developer shall have the option of commencing and completing (without delay) the Adjustment work without installation of the applicable Betterment. *[If Paragraph 9(b) identifies Betterment, check the one appropriate provision]*:

☐ The estimated cost stated in Paragraph 9(b) is the agreed and final amount due for Betterment hereunder, and accordingly no adjustment (either up or down) of such amount shall be made based on actual costs.

☐ The Owner is responsible for the Developer's actual cost for the identified Betterment. Accordingly, upon completion of all Adjustment work to be performed by both parties pursuant to this Agreement, (i) the Owner shall pay to the Developer the amount, if any, by which the actual cost of the Betterment (determined as provided below in this paragraph) exceeds the estimated cost advanced by the Owner, or (ii) the Developer shall refund to the Owner the amount, if any, by which such advance exceeds such actual cost, as applicable. Any additional payment by the Owner shall be due within **sixty (60) calendar days** after the Owner's receipt of the Developer's invoice therefor, together with supporting documentation; any refund shall be due within **sixty (60) calendar days** after completion of the Adjustment work hereunder. The actual cost of Betterment incurred by the Developer shall be calculated by multiplying (i) the Betterment percentage stated in Paragraph 9(b), by (ii) the actual cost of all work performed by the Developer pursuant to this Agreement (including work attributable to the Betterment), as invoiced by the Developer to the Owner.

(d) If Paragraph 9(b) identifies Betterment, the amount allocable to Betterment in Owner's indirect costs shall be determined by applying the percentage of the Betterment calculated in Paragraph 9(b) to the Owner's indirect costs. The Owner's invoice to the Developer for the Developer's share of the Owner's indirect costs shall credit the Developer with any Betterment amount determined pursuant to this Paragraph 9(d).

(e) For any Adjustment from which the Owner recovers any materials and/or parts and retains or sells the same, after application of any applicable Betterment credit, the Owner's invoice to the Developer for its costs shall credit the Developer with the salvage value for such materials and/or parts..

(f) The determinations and calculations of Betterment described in this Paragraph 9 shall exclude right of way acquisition costs. Betterment in connection with right-of-way acquisition is addressed in Paragraph 15.

10. **Management of the Adjustment Work.** The Developer will provide project management during the Adjustment of the Owner Utilities.

11. **Utility Investigations.** At the Developer's request, the Owner shall assist the Developer in locating any Utilities (including appurtenances) which are owned and/or operated by Owner and may be impacted by the Project. Without limiting the generality of the foregoing, in order to help assure that neither the adjusted Owner Utilities nor existing, unadjusted utilities owned or operated by the Owner are damaged during construction of the Project, the Owner shall mark in the field the location of all such utilities horizontally on the ground in advance of Project construction in the immediate area of such utilities.

12. **Inspection and Acceptance by the Owner**.

(a) Throughout the Adjustment construction hereunder, the Owner shall provide adequate inspectors for such construction. The work shall be inspected by the Owner's inspector(s) at least once each working day, and more often if such inspections are deemed necessary by Owner. Further, upon request by the Developer or its contractors, the Owner shall furnish an inspector at any reasonable time in which construction is underway pursuant to this Agreement, including occasions when construction is underway in excess of the usual forty (40) hour work week and at such other times as reasonably required. The Owner agrees to promptly notify the Developer of any concerns resulting from any such inspection.

(b) The Owner shall perform a final inspection of the adjusted Owner Utilities, including conducting any tests as are necessary or appropriate, within **five (5) business days** after completion of construction hereunder. The Owner shall accept such construction if it is consistent with the performance standards described in Paragraph 3, by giving written notice of such acceptance to the Developer within said **five (5) day** period. If the Owner does not accept the construction, then the Owner shall, not later than the expiration of said **five (5) day** period, notify the Developer in writing of its grounds for non-acceptance and suggestions for correcting the problem, and if the suggested corrections are justified, the Developer will comply. The Owner shall re-inspect any revised construction (and re-test if appropriate) and give notice of acceptance, not later than **five (5) business days** after completion of corrective work. The Owner's failure to inspect and/or to give any required notice of acceptance or non-acceptance within the specified time period shall be deemed acceptance.

(c) From and after the Owner's acceptance (or deemed acceptance) of an adjusted Owner Utility, the Owner agrees to accept ownership of, and full operation and maintenance responsibility for, such Owner Utility.

13. **Design Changes.** The Developer will be responsible for additional Adjustment design and construction costs necessitated by design changes to the Project, upon the terms specified herein.

14. **Field Modifications.** The Developer shall provide the Owner with documentation of any field modifications, including Utility Adjustment Field Modifications as well as minor changes described in Paragraph 16(b), occurring in the Adjustment of the Owner Utilities.

15. **Real Property Interests.**

(a) The Owner has provided, or upon execution of this Agreement shall promptly provide to the Developer, documentation acceptable to TxDOT indicating any right, title or interest

in real property claimed by the Owner with respect to the Owner Utilities in their existing location(s). Such claims are subject to TxDOT's approval as part of its review of the Developer Utility Assembly as described in Paragraph 2. Claims approved by TxDOT as to rights or interests are referred to herein as "Existing Interests".

(b) If acquisition of any new easement or other interest in real property ("New Interest") is necessary for the Adjustment of any Owner Utilities, then the Owner shall be responsible for undertaking such acquisition. The Owner shall implement each acquisition hereunder expeditiously so that related Adjustment construction can proceed in accordance with the Developer's Project schedules. The Developer shall be responsible for its share (as specified in Paragraph 4) of the actual and reasonable acquisition costs of any such New Interest (including without limitation the Owner's reasonable overhead charges and reasonable legal costs as well as compensation paid to the landowner), excluding any costs attributable to Betterment as described in Paragraph 15(c), and subject to the provisions of Paragraph 15(e); provided, however, that all acquisition costs shall be subject to the Developer's prior written approval. Eligible acquisition costs shall be segregated from other costs on the Owner's estimates and invoices. Any such New Interest shall have a written valuation and shall be acquired in accordance with applicable law.

(c) The Developer shall pay its share only for a replacement in kind of an Existing Interest (e.g., in width and type), unless a New Interest exceeding such standard (i) is required in order to accommodate the Project or by compliance with applicable law, or (ii) is called for by the Developer in the interest of overall Project economy. Any New Interest which is not the Developer's responsibility pursuant to the preceding sentence shall be considered a Betterment to the extent that it upgrades the Existing Interest which it replaces, or in its entirety if the related Owner Utility was not installed pursuant to an Existing Interest. Betterment costs shall be solely the Owner's responsibility.

(d) For each Existing Interest located within the final Project right of way, upon completion of the related Adjustment work and its acceptance by the Owner, the Owner agrees to execute a quitclaim deed or other appropriate documentation relinquishing such Existing Interest to TxDOT, unless the affected Owner Utility is remaining in its original location or is being reinstalled in a new location within the area subject to such Existing Interest. All quitclaim deeds or other relinquishment documents shall be subject to TxDOT's approval as part of its review of the Utility Assembly as described in Paragraph 2. For each such Existing Interest relinquished by the Owner, the Developer shall do one of the following to compensate the Owner for such Existing Interest, as appropriate:

(e) (i) If the Owner acquires a New Interest for the affected Owner Utility, the Developer shall reimburse the Owner for the Developer's share of the Owner's actual and reasonable acquisition costs in accordance with Paragraph 15(b), subject to Paragraph 15(c); or

(ii) If the Owner does not acquire a New Interest for the affected Owner Utility, the Developer shall compensate the Owner for the Developer's share of the fair market value of such relinquished Existing Interest, as mutually agreed between the Owner and the Developer and supported by a written valuation.

The compensation provided to the Owner pursuant to either subparagraph (i) or subparagraph (ii) above shall constitute complete compensation to the Owner for the relinquished Existing Interest and any New Interest, and no further compensation shall be

due to the Owner from the Developer or TxDOT on account of such Existing Interest or New Interest(s).

(f) The Owner shall execute a Utility Joint Use Acknowledgment (TxDOT-U-80A) for each Adjustment where required pursuant to TxDOT policies. All Utility Joint Use Acknowledgments shall be subject to TxDOT approval as part of its review of the Utility Assembly as described in Paragraph 2.

16. **Amendments and Modifications.** This Agreement may be amended or modified only by a written instrument executed by the parties hereto, in accordance with Paragraph 16(a) or Paragraph 16(b) below.

(a) Except as otherwise provided in Paragraph 16(b), any amendment or modification to this Agreement or the Plans attached hereto shall be implemented by a Utility Adjustment Agreement Amendment ("UAAA") in the form of Exhibit B hereto (TxDOT-CDA-U-35A-DM). The UAAA form can be used for a new scope of work with concurrence of the Developer and TxDOT as long as the design and construction responsibilities have not changed. Each UAAA is subject to the review and approval of TxDOT, prior to its becoming effective for any purpose and prior to any work being initiated thereunder. The Owner agrees to keep and track costs for each UAAA separately from other work being performed.

(b) For purposes of this Paragraph 16(b), "Utility Adjustment Field Modification" shall mean any horizontal or vertical design change from the Plans included in a Utility Assembly previously approved by TxDOT, due either to design of the Project or to conditions not accurately reflected in the approved Utility Assembly (e.g., shifting the alignment of an 8 in. water line to miss a modified or new roadway drainage structure). A Utility Adjustment Field Modification agreed upon by the Developer and Owner does not require a UAAA, provided that the modified Plans have been submitted to TxDOT for its review and comment. A minor change (e.g., an additional water valve, an added utility marker at a ROW line, a change in vertical bend, etc.) will not be considered a Utility Adjustment Field Modification and will not require a UAAA, but shall be shown in the documentation required pursuant to Paragraph 14.

(c) This Agreement does not alter and shall not be construed in any way to alter the obligations, responsibilities, benefits, rights, remedies, and claims between the Developer and TxDOT to design and construct the Project, including the Adjustment.

17. **Entire Agreement.** This Agreement embodies the entire agreement between the parties and there are no oral or written agreements between the parties or any representations made which are not expressly set forth herein.

18. **Assignment; Binding Effect; TxDOT as Third Party Beneficiary.** Neither the Owner or the Developer may assign any of its rights or delegate any of its duties under this Agreement without the prior written consent of the other party and of TxDOT, which consent may not be unreasonably withheld or delayed; provided, however, that the Developer may assign any of its rights and/or delegate any of its duties to TxDOT or to any other entity engaged by TxDOT to fulfill the Developer's obligations, at any time without the prior consent of the Owner.

This Agreement shall bind the Owner, the Developer and their successors and permitted assigns, and nothing in this Agreement nor in any approval subsequently provided by any party hereto shall be construed as giving any benefits, rights, remedies, or claims to any other person, firm,

corporation or other entity, including, without limitation, any contractor or other party retained for the Adjustment work or the public in general; provided, however, that the Owner and the Developer agree that although TxDOT is not a party to this Agreement, TxDOT is intended to be a third-party beneficiary to this Agreement.

19. **Breach by the Parties.**

(a) If the Owner claims that the Developer has breached any of its obligations under this Agreement, the Owner will notify the Developer and TxDOT in writing of such breach, and the Developer shall have 30 days following receipt of such notice in which to cure such breach, before the Owner may invoke any remedies which may be available to it as a result of such breach; provided, however, that both during and after such period TxDOT shall have the right, but not the obligation, to cure any breach by the Developer. Without limiting the generality of the foregoing, (a) TxDOT shall have no liability to the Owner for any act or omission committed by the Developer in connection with this Agreement, including without limitation any claimed defect in any design or construction work supplied by the Developer or by its contractors, and (b) in no event shall TxDOT be responsible for any repairs or maintenance to the Owner Utilities Adjusted pursuant to this Agreement.

(b) If the Developer claims that the Owner has breached any of its obligations under this Agreement, the Developer will notify the Owner and TxDOT in writing of such breach, and the Owner shall have 30 days following receipt of such notice in which to cure such breach, before the Developer may invoke any remedies which may be available to it as a result of such breach.

20. **Traffic Control.** The Developer shall provide traffic control or shall reimburse the Owner for the Developer's share (if any, as specified in Paragraph 4) of the costs for traffic control made necessary by the Adjustment work performed by either the Developer or the Owner pursuant to this Agreement, in compliance with the requirements of the Texas Manual on Uniform Traffic Control Devices. Betterment percentages calculated in Paragraph 9 shall also apply to traffic control costs.

21. **Notices.** Except as otherwise expressly provided in this Agreement, all notices or communications pursuant to this Agreement shall be sent or delivered to the following:

The Owner:

Phone:
Fax:

The Developer:

Phone:
Fax:

A party sending a notice of default of this Agreement to another party shall also send a copy of such notice to TxDOT and the CDA Utility Manager at the following addresses:

TxDOT: TxDOT Department of Transportation

Attention: Donald C. Toner, Jr., SR/WA
125 E. 11th Street
Austin, Texas 78701-2483
Phone: (512) 936-0980

CDA Utility Manager:

Any notice or demand required herein shall be given (a) personally, (b) by certified or registered mail, postage prepaid, return receipt requested, or (c) by reliable messenger or overnight courier to the appropriate address set forth above. Any notice served personally shall be deemed delivered upon receipt, and any notice served by certified or registered mail or by reliable messenger or overnight courier shall be deemed delivered on the date of receipt as shown on the addressee's registry or certification of receipt or on the date receipt is refused as shown on the records or manifest of the U.S. Postal Service or such courier. Any party may from time to time designate any other address for this purpose by written notice to all other parties; TxDOT may designate another address by written notice to all parties.

22. **Approvals.** Any acceptance, approval, or any other like action (collectively "Approval") required or permitted to be given by either the Developer, , the Owner or TxDOT pursuant to this Agreement:

(a) Must be in writing to be effective (except if deemed granted pursuant hereto),

(b) Shall not be unreasonably withheld or delayed; and if Approval is withheld, such withholding shall be in writing and shall state with specificity the reason for withholding such Approval, and every effort shall be made to identify with as much detail as possible what changes are required for Approval, and

(c) Except for approvals by TxDOT, and except as may be specifically provided otherwise in this Agreement, shall be deemed granted if no response is provided to the party requesting an Approval within the time period prescribed by this Agreement (or if no time period is prescribed, then fourteen (14) calendar days), commencing upon actual receipt by the party from which an Approval is requested or required, of a request for Approval from the requesting party. All requests for Approval shall be sent out by the requesting party to the other party in accordance with Paragraph 21.

23. **Time**.

(a) Time is of the essence in the performance of this Agreement.

(b) All references to “days” herein shall be construed to refer to calendar days, unless otherwise stated.

(c) No party shall be liable to another party for any delay in performance under this Agreement from any cause beyond its control and without its fault or negligence (“Force Majeure”), such as acts of God, acts of civil or military authority, fire, earthquake, strike, unusually severe weather, floods or power blackouts.

24. **Continuing Performance.** In the event of a dispute, the Owner and the Developer agree to continue their respective performance hereunder to the extent feasible in light of the dispute,

including paying billings, and such continuation of efforts and payment of billings shall not be construed as a waiver of any legal right.

25. **Equitable Relief.** The Developer and the Owner acknowledge and agree that delays in Adjustment of the Owner Utilities will impact the public convenience, safety and welfare, and that (without limiting the parties' remedies hereunder) monetary damages would be inadequate to compensate for delays in the construction of the Project. Consequently, the parties hereto (and TxDOT as well, as a third party beneficiary) shall be entitled to specific performance or other equitable relief in the event of any breach of this Agreement which threatens to delay construction of the Project; provided, however, that the fact that specific performance or other equitable relief may be granted shall not prejudice any claims for payment or otherwise related to performance of the Adjustment work hereunder.

26. **Authority.** The Owner and the Developer each represent and warrant to the other party that the warranting party possesses the legal authority to enter into this Agreement and that it has taken all actions necessary to exercise that authority and to lawfully authorize its undersigned signatory to execute this Agreement and to bind such party to its terms. Each person executing this Agreement on behalf of a party warrants that he or she is duly authorized to enter into this Agreement on behalf of such party and to bind it to the terms hereof.

27. **Cooperation.** The parties acknowledge that the timely completion of the Project will be influenced by the ability of the Owner (and its contractors) and the Developer to coordinate their activities, communicate with each other, and respond promptly to reasonable requests. Subject to the terms and conditions of this Agreement, the Owner and the Developer agree to take all steps reasonably required to coordinate their respective duties hereunder in a manner consistent with the Developer's current and future construction schedules for the Project.

28. **Termination.** If the Project is canceled or modified so as to eliminate the necessity of the Adjustment work described herein, then the Developer shall notify the Owner in writing and the Developer reserves the right to thereupon terminate this Agreement. Upon such termination, the parties shall negotiate in good faith an amendment that shall provide mutually acceptable terms and conditions for handling the respective rights and liabilities of the parties relating to such termination.

29. **Nondiscrimination**. Each party hereto agrees, with respect to the work performed by such party pursuant to this Agreement, that such party shall not discriminate on the grounds of race, color, sex, national origin or disability in the selection and/or retention of contractors and consultants, including procurement of materials and leases of equipment.

30. **Applicable Law, Jurisdiction and Venue**. This Agreement shall be governed by the laws of the State of Texas, without regard to the conflict of laws principles thereof. Venue for any action brought to enforce this Agreement or relating to the relationship between any of the parties shall be the District Court of Travis County, Texas or the United States District Court for the Western District of Texas (Austin).

31. **Waiver of Consequential Damages.** No party hereto shall be liable to any other party to this Agreement, whether in contract, tort, equity, or otherwise (including negligence, warranty, indemnity, strict liability, or otherwise,) for any punitive, exemplary, special, indirect, incidental, or consequential damages, including, without limitation, loss of profits or revenues, loss of use, claims of customers, or loss of business opportunity.

32. **Captions**. The captions and headings of the various paragraphs of this Agreement are for convenience and identification only, and shall not be deemed to limit or define the content of their respective paragraphs.

33. **Counterparts.** This Agreement may be executed in any number of counterparts. Each such counterpart hereof shall be deemed to be an original instrument but all such counterparts together shall constitute one and the same instrument.

34. **Effective Date.** This Agreement shall become effective upon the later of (a) the date of signing by the last party (either the Owner or Developer) signing this Agreement, and (b) the date of TxDOT's approval as indicated by the signature of TxDOT's representative, below.

APPROVED BY:
TEXAS DEPARTMENT OF TRANSPORTATION

By: _____
Authorized Signature

Printed
Name: Donald C. Toner, Jr., SR/WA

Texas Turnpike Authority Division

Date: _____

OWNER

_____
[Print Owner Name]

By: _____
Duly Authorized Representative

Printed
Name: _____

Title: _____

Date: _____

DEVELOPER

By: _____
Duly Authorized Representative

Printed
Name: _____

Title: _____

Date: _____

County:
ROW CSJ No.:
Const. CSJ No.:
Highway:
Limits:
Fed. Proj. No.:

EXHIBIT A

PLANS, SPECIFICATIONS, COST ESTIMATES AND ALLOCATION

County:
ROW CSJ No.:
Const. CSJ No.:
Highway:
Limits:
Fed. Proj. No.:

EXHIBIT B

UTILITY ADJUSTMENT AGREEMENT AMENDMENT
(TxDOT-CDA-U-35A-DM)

County:
ROW CSJ No.:

Const. CSJ No.:

Highway:
Limits:
Fed. Proj. No.:

PROJECT UTILITY ADJUSTMENT AGREEMENT
(Owner Managed)
Agreement No.: -U-_____

THIS AGREEMENT, by and between _____, hereinafter identified as the "**Developer**",, and _____, hereinafter identified as the "**Owner**", is as follows:

WITNESSETH

WHEREAS, the STATE OF TEXAS, acting by and through the Texas Department of Transportation, hereinafter identified as "TxDOT", is authorized to design, construct, operate, maintain, and improve turnpike projects as part of the state highway system throughout the State of Texas, all in conformance with the provisions of Chapters 201, 203, 222, 223, 224 and 228, Texas Transportation Code, as amended; and

WHEREAS, TxDOT proposes to construct a toll project identified as the _____ Project (the "Project"); and

WHEREAS, pursuant to that certain Comprehensive Development Agreement by and between TxDOT and the Developer with respect to the Project (the "CDA"), the Developer has undertaken the obligation to design, construct, finance, operate and maintain the Project and adhere to all requirements in the CDA; and

WHEREAS, the Developer's duties pursuant to the CDA include causing the relocation, removal, or other necessary adjustment of existing utilities impacted by the Project (collectively, "Adjustment"), subject to the provisions herein; and

WHEREAS, the Project may receive Federal funding, financing and/or credit assistance; and

WHEREAS, the Developer has notified the Owner that certain of its facilities and appurtenances (the "Owner Utilities") are in locational conflict with the Project (and/or the "Ultimate Configuration" of the Project), and the Owner has decided to undertake the Adjustment of the Owner Utilities and agrees that the "Project" will be constructed in accordance with §203.092, Texas Transportation Code, as amended, Rule 21.23 of Title 43 Tex. Admin. Code, and 23 CFR 645A (Utility Relocations, Adjustments and Reimbursement); and

WHEREAS, the Owner Utilities and the proposed Adjustment of the Owner Utilities are described as follows *[insert below a description of the affected facilities (by type, size and location) as well as a brief description of the nature of the Adjustment work to be performed (e.g., "adjust 12" waterline from approximately Highway Station 100+00 to approximately Highway Station 200+00")]:*

_____; and

WHEREAS, the Owner recognizes that time is of the essence in completing the work contemplated herein; and

WHEREAS, the Developer and the Owner desire to implement the Adjustment of the Owner Utilities by entering into this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of these premises and of the mutual covenants and agreements of the parties hereto and other good and valuable consideration, the receipt and sufficiency of which being hereby acknowledged, the Developer and the Owner agree as follows:

1. **Preparation of Plans.** *[Check one box that applies:]*

☐ The Developer has hired engineering firm(s) acceptable to the Owner to perform all engineering services needed for the preparation of plans, required specifications, and cost estimates, attached hereto as Exhibit A (collectively, the "Plans"), for the proposed Adjustment of the Owner Utilities. The Developer represents and warrants that the Plans conform to the most recent Utility Accommodation Rules issued by the Texas Department of Transportation ("TxDOT"), set forth in 43 Tex. Admin. Code, Part 1, Chapter 21, Subchapter C, *et seq*. (the "UAR"). By its execution of this Agreement or by the signing of the Plans, Owner hereby approves and confirms that the Plans are in compliance with the "standards" described in Paragraph 3(d).

☐ The Owner has provided plans, required specifications and cost estimates, attached hereto as Exhibit A (collectively, the "Plans"), for the proposed Adjustment of the Owner Utilities. The Owner represents and warrants that the Plans conform to the UAR. By its execution of this Agreement theDeveloper hereby approves the Plans. The Owner also has provided to the Developer a utility plan view map illustrating the location of existing and proposed utility facilities on the Developer's right of way map of the Project. With regard to its preparation of the Plans, Owner represents as follows *[check one box that applies]*:

☐ The Owner's employees were utilized to prepare the Plans, and the charges therefore do not exceed the Owner's typical costs for such work.

☐ The Owner utilized consulting engineers to prepare the Plans, and the fees for such work are not based upon a percentage of construction costs. Further, such fees encompass only the work necessary to prepare the Plans for Adjustment of the Owner Utilities described herein, and do not include fees for work done on any other project. The fees of the consulting engineers are reasonable and are comparable to the fees typically charged by consulting engineers in the locale of the Project for comparable work for the Owner.

2. **Review by TxDOT.** The parties hereto acknowledge and agree as follows:

(a) Upon execution of this Agreement by the Developer and the Owner, the Developer will submit this Agreement, together with the attached Plans, to TxDOT for its review and approval as part of a package referred to as a "Utility Assembly". The parties agree to cooperate in good faith to modify this Agreement and/or the Plans, as necessary and

mutually acceptable to all parties, to respond to any comments made by TxDOT thereon. Without limiting the generality of the foregoing, (i) the Owner agrees to respond (with comment and/or acceptance) to any modified Plans and/or Agreement prepared by the Developer in response to TxDOT comments within **fourteen (14) business days** after receipt of such modifications; and (ii) if the Owner originally prepared the Plans, the Owner agrees to modify the Plans in response to TxDOT comments and to submit such modified Plans to the Developer for its comment and/or approval (and re-submittal to TxDOT for its comment and/or approval) within **fourteen (14) business days** after receipt of TxDOT's comments. The Owner's failure to timely respond to any modified Plans submitted by the Developer pursuant to this paragraph shall be deemed the Owner's approval of same. If the Owner fails to timely prepare modified Plans which are its responsibility hereunder, then the Developer shall have the right to modify the Plans for the Owner's approval as if the Developer had originally prepared the Plans. The Developer shall be responsible for providing Plans to and obtaining comments on and approval of the Plans from the Developer. The process set forth in this paragraph will be repeated until the Owner, the Developer and TxDOT have all approved this Agreement and the Plans.

(b) The parties hereto acknowledge and agree that TxDOT's review, comments, and/or approval of a Utility Assembly or any component thereof shall constitute TxDOT's approval of the location and manner in which a Utility Assembly will be installed, adjusted, or relocated within the state highway right of way, subject to the Developer's and Owner's satisfactory performance of the Adjustment work in accordance with the approved Plans. TxDOT has no duty to review Owner facilities or components for their quality or adequacy to provide the intended utility service.

3. **Design and Construction Standards.**

(a) All design and construction performed for the Adjustment work which is the subject of this Agreement shall comply with and conform to the following:

(1) All applicable local and state laws, regulations, decrees, ordinances and policies, including the UAR, the Utility Manual issued by TxDOT (to the extent its requirements are mandatory for Utility Adjustments necessitated by the Project, communicated to the Owner by the Developer or TxDOT), the requirements of the CDA, and the policies of TxDOT;

(2) All Federal laws, regulations, decrees, ordinances and policies applicable to projects receiving Federal funding, financing and/or credit assistance, including without limitation 23 CFR 645 Subparts A and B;

(3) The terms of all governmental permits or other approvals, as well as any private approvals of third parties necessary for such work; and

(4) The standard specifications, standards of practice, and construction methods (collectively, "standards") which the Owner customarily applies to facilities comparable to the Owner Utilities that are constructed by the Owner or for the Owner by its contractors at the Owner's expense, which standards are current at the time this Agreement is signed by the Owner, and which the Owner has submitted to the Developer in writing.

(5) Owner agrees that all service meters must be placed outside of the State ROW.

(b) Such design and construction also shall be consistent and compatible with (i) the Developer's current design and construction of the Project, (ii) the "Ultimate Configuration" for the Project, and (iii) any other utilities being installed in the same vicinity. The Owner acknowledges receipt from the Developer of Project plans and Ultimate Configuration documents as necessary to comply with the foregoing. In case of any inconsistency among any of the standards referenced in this Agreement, the most stringent standard shall apply.

(c) The plans, specifications, and cost estimates contained in Exhibit A shall identify and detail all utility facilities that the Owner intends to abandon in place rather than remove, including material type, quantity, size, age, and condition. No facilities containing hazardous or contaminated materials may be abandoned, but shall be specifically identified and removed in accordance with the requirements of subparagraph (a). It is understood and agreed that the Developer shall not pay for the assessment and remediation or other corrective action relating to soil and ground water contamination caused by the utility facility prior to the removal.

4. **Construction by the Owner; Scheduling.**

(a) The Owner hereby agrees to perform the construction necessary to adjust the Owner Utilities. All construction work hereunder shall be performed in a good and workmanlike manner, and in accordance with the Plans (except as modified pursuant to Paragraph 17). The Owner agrees that during the Adjustment of the Owner Utilities, the Owner and its contractors will coordinate their work with the Developer so as not to interfere with the performance of work on the Project by the Developer or by any other party. "Interfere" means any action or inaction that interrupts, interferes, delays or damages Project work.

(b) The Owner may utilize its own employees or may retain such contractor or contractors as are necessary to adjust the Owner Utilities, through the procedures set forth in Form TxDOT-U-48 "Statement Covering Contract Work" attached hereto as Exhibit C. If the Owner utilizes its own employees for the Construction work portion of the Adjustment of Owner Utilities, a Form TxDOT-U-48 is not required. If the Adjustment of the Owner Utilities is undertaken by the Owner's contractor under a competitive bidding process, all bidding and contracting shall be conducted in accordance with all federal and state laws and regulations applicable to the Owner and the Project.

(c) The Owner shall obtain all permits necessary for the construction to be performed by the Owner hereunder, and the Developer shall cooperate in that process as needed. The Owner shall submit a traffic control plan to the Developer as required for Adjustment work to be performed on existing road rights of way.

(d) The Owner shall commence its construction for Adjustment of each Owner Utility hereunder promptly after (i) receiving written notice to proceed therewith from the Developer, and (ii) any Project right of way necessary for such Adjustment has been acquired either by Developer (for adjusted facilities to be located within the Project right of way) or by the Owner (for adjusted facilities to be located outside of the Project right of way), or a right-of-entry permitting Owner's construction has been obtained from the landowner by the Developer or by the Owner with the Developer's prior approval. The Owner shall notify the Developer at least 72 hours prior to commencing construction for the Adjustment of each Owner Utility hereunder.

(e) The Owner shall expeditiously stake the survey of the proposed locations of the Owner Utilities being adjusted, on the basis of the final approved Plans. The Developer shall verify that the Owner's Utilities, whether moving to a new location or remaining in place, clear the planned construction of the Project as staked in the field as well as the Ultimate Configuration.

(f) The Owner shall complete all of the Utility reconstruction and relocation work, including final testing and acceptance thereof *[check one box that applies]*:

☐ on or before _____, 20___.

☐ a duration not to exceed _____ calendar days upon notice to proceed by the Developer.

(g) The amount of reimbursement due to the Owner pursuant to this Agreement for the affected Adjustment(s) shall be reduced by ten percent (10%) for each 30-day period (and by a pro rata amount of said ten percent (10%) for any portion of a 30-day period) by which the final completion and acceptance date for the affected Adjustment(s) exceeds the applicable deadline. The provisions of this Paragraph 4(g) shall not limit any other remedy available to the Developer at law or in equity as a result of the Owner's failure to meet any deadline hereunder.

The above reduction applies except to the extent due to (i) Force Majeure as described in Paragraph 24(c), (ii) any act or omission of the Developer, if the Owner fails to meet any deadline established pursuant to Paragraph 4(f), or (iii) if the Developer and/or TxDOT determine, in their sole discretion, that a delay in the relocation work is the result of circumstances beyond the control of the Owner or Owner's contractor and the Developer will not reduce the reimbursement.

5. **Costs of the Work.**

(a) The Owner's costs for Adjustment of each Owner Utility shall be derived from (i) the accumulated total of costs incurred by the Owner for design and construction of such Adjustment, plus (ii) the Owner's other related costs to the extent permitted pursuant to Paragraph 5(c) (including without limitation the eligible engineering costs incurred by the Owner for design prior to execution of this Agreement), plus (iii) the Owner's right of way acquisition costs, if any, which are reimbursable pursuant to Paragraph 16.

(b) The Owner's costs associated with Adjustment of the Owner Utilities shall be developed pursuant to the method checked and described below *[check only one box]*:

☐ (1) Actual costs accumulated in accordance with a work order accounting procedure prescribed by the applicable Federal or State regulatory body ("Actual Cost"); or

☐ (2) Actual costs accumulated in accordance with an established accounting procedure developed by the Owner and which the Owner uses in its regular operations ("Actual Cost"); or

☐ (3) The agreed sum of $ _____ ("Agreed Sum"), as supported by the analysis of estimated costs attached hereto as part of Exhibit A.

6. **Responsibility for Costs of Adjustment Work.**

The Agreed Sum or Actual Cost, as applicable, of all work to be performed pursuant to this Agreement shall be allocated between the Developer and the Owner as identified in Exhibit A and in accordance with §203.092, Texas Transportation Code. An allocation percentage may be determined by application of an eligibility ratio, if appropriate, as detailed in Exhibit A; provided, however, that any portion of an Agreed Sum or Actual Cost attributable to Betterment shall be allocated 100% to the Owner in accordance with Paragraph 10. All costs charged to the Developer by the Owner shall be reasonable and shall be computed using rates and schedules not exceeding those applicable to similar work performed by or for the Owner at the Owner's expense. Payment of the costs allocated to the Developer pursuant to this Agreement (if any) shall be full compensation to the Owner for all costs incurred by the Owner in Adjusting the Owner Utilities (including without limitation costs of relinquishing and/or acquiring right of way).

7. **Billing, Payment, Records and Audits: Actual Cost Method.** The following provisions apply if the Owner's costs are developed under procedure (1) or (2) described in Paragraph 5(b):

(a) After (i) completion of all Adjustment work to be performed pursuant to this Agreement, (ii) the Developer's final inspection of the Adjustment work by Owner hereunder (and resolution of any deficiencies found), and (iii) receipt of an invoice complying with the applicable requirements of Paragraph 9, the Developer shall pay to the Owner an amount equal to ninety percent (90%) of the Developer's share of the Owner's costs as shown in such final invoice (less amounts previously paid, and applicable credits). After completion of the Developer's audit referenced in Paragraph 7(c) and the parties' mutual determination of any necessary adjustment to the final invoice resulting therefrom, the Developer shall make any final payment due so that total payments will equal the total amount of the Developer's share reflected on such final invoice (as adjusted, if applicable).

(b) When requested by the Owner and properly invoiced in accordance with Paragraph 9, the Developer shall make intermediate payments to the Owner based upon the progress of the work completed at not more than monthly intervals, and such payments shall not exceed eighty percent (80%) of the Developer's share of the Owner's eligible costs as shown in each such invoice (less applicable credits). Intermediate payments shall not be construed as final payment for any items included in the intermediate payment.

(c) The Owner shall maintain complete and accurate cost records for all work performed pursuant to this Agreement,. The Owner shall maintain such records for four (4) years after receipt of final payment hereunder. The Developer and their respective representatives shall be allowed to audit such records during the Owner's regular business hours. Unsupported charges will not be considered eligible for reimbursement. The parties shall mutually agree upon (and shall promptly implement by payment or refund, as applicable) any financial adjustment found necessary by the Developer's audit. TxDOT, the Federal Highway Administration, and their respective representatives also shall be allowed to audit such records upon reasonable notice to the Owner, during the Owner's regular business hours.

8. **Billing and Payment: Agreed Sum Method.** If the Owner's costs are developed under procedure (3) described in Paragraph 5(b), then the Developer shall pay its share of the Agreed Sum to the Owner after (a) completion of all Adjustment work to be performed pursuant to this Agreement, (b) the Developer's final inspection of the Adjustment work by Owner hereunder

(and resolution of any deficiencies found), and (c) receipt of an invoice complying with the applicable requirements of Paragraph 9.

9. **Invoices.** If the Owner's costs are developed under procedure (1) or (2) described in Paragraph 5(b), then Owner shall list each of the services performed, the amount of time spent and the date on which the service was performed. The original and three (3) copies of each invoice shall be submitted to the Developer at the address for notices stated in Paragraph 22, unless otherwise directed by the Developer pursuant to Paragraph 22, together with (1) such supporting information to substantiate all invoices as reasonably requested by the Developer, and (2) such waivers or releases of liens as the Developer may reasonably require. The Owner shall make commercially reasonable efforts to submit final invoices not later than one hundred twenty (120) days after completion of work. Final invoices shall include any necessary quitclaim deeds pursuant to Paragraph 16, and all applicable record drawings accurately representing the Adjustment as installed. The Owner hereby acknowledges and agrees that any right it may have for reimbursement of any of its costs not submitted to the Developer within eighteen months following completion of all Adjustment work to be performed by both parties pursuant to this Agreement shall be deemed to have been abandoned and waived. Invoices shall clearly delineate total costs, and those costs that are reimbursable pursuant to the terms of this Agreement.

10. **Betterment.**

(a) For purposes of this Agreement, the term "Betterment" means any upgrading of an Owner Utility being adjusted that is not attributable to the construction of the Project and is made solely for the benefit of and at the election of the Owner, including but not limited to an increase in the capacity, capability, efficiency or function of the adjusted Utility over that provided by the existing Utility facility or an expansion of the existing Utility facility; provided, however, that the following are not considered Betterments:

(i) any upgrading which is required for accommodation of the Project;

(ii) replacement devices or materials that are of equivalent standards although not identical;

(iii) replacement of devices or materials no longer regularly manufactured with the next highest grade or size;

(iv) any upgrading required by applicable laws, regulations or ordinances;

(v) replacement devices or materials which are used for reasons of economy (e.g., non-stocked items may be uneconomical to purchase); or

(vi) any upgrading required by the Owner's written "standards" meeting the requirements of Paragraph 3(a)(4).

[Include the following for fiber optic Owner Utilities only:] Extension of an Adjustment to the nearest splice boxes shall not be considered a Betterment if required by the Owner in order to maintain its written telephony standards.

Any upgrading required by the Owner's written "standards" meeting the requirements of Paragraph 3(a)(4) shall be deemed to be of direct benefit to the Project.

(b) It is understood and agreed that the Developer will not pay for any Betterments and that the Owner shall not be entitled to payment therefor. No Betterment may be performed in connection with the Adjustment of the Owner Utilities which is incompatible with the Project or the Ultimate Configuration or which cannot be performed within the other constraints of applicable law, any applicable governmental approvals, including without limitation the scheduling requirements thereunder. Accordingly, the parties agree as follows *[check the one box that applies, and complete if appropriate]*:

☐ (i) The Adjustment of the Owner Utilities pursuant to the Plans does not include any Betterment.

☐ The Adjustment of the Owner Utilities pursuant to the Plans includes Betterment to the Owner Utilities by reason of *[insert explanation, e.g. "replacing 12" pipe with 24" pipe]*: _____. The Owner has provided to the Developer comparative estimates for (i) all costs for work to be performed by the Owner pursuant to this Agreement, including work attributable to the Betterment, and (ii) the cost to perform such work without the Betterment, which estimates are hereby approved by the Developer. The estimated amount of the Owner's costs for work hereunder which is attributable to Betterment is $_____, calculated by subtracting (ii) from (i). The percentage of the total cost of the Owner's work hereunder which is attributable to Betterment is _____%, calculated by subtracting (ii) from (i), which remainder shall be divided by (i).

(c) If Paragraph 10(b) identifies Betterment, then the following shall apply:

(i) If the Owner's costs are developed under procedure (3) described in Paragraph 5(b), then the Agreed Sum stated in that Paragraph includes any credits due to the Developer on account of the identified Betterment, and no further adjustment shall be made on account of same.

(ii) If the Owner's costs are developed under procedure (1) or (2) described in Paragraph 5(b), the parties agree as follows *[If Paragraph 10(b) identifies Betterment <u>and</u> the Owner's costs are developed under procedure (1) or (2), check the <u>one</u> appropriate provision]*:

☐ The estimated cost stated in Paragraph 10(b) is the agreed and final amount due for Betterment hereunder. Accordingly, each intermediate invoice submitted pursuant to Paragraph 7(b) shall include a credit for an appropriate percentage of the agreed Betterment amount, proportionate to the percentage of completion reflected in such invoice. The final invoice submitted pursuant to Paragraph 7(a) shall reflect the full amount of the agreed Betterment credit. For each invoice described in this paragraph, the credit for Betterment shall be applied before calculating the Developer's share (pursuant to Paragraph 6) of the cost of the Adjustment work. No other adjustment (either up or down) shall be made based on actual Betterment costs.

☐ The Owner is responsible for the actual cost of the identified Betterment, determined by multiplying (a) the Betterment percentage stated in Paragraph 10(b), by (b) the actual cost of all work performed by the Owner pursuant to this Agreement (including work attributable to the Betterment), as invoiced by the Owner to the Developer. Accordingly, each invoice submitted pursuant to either Paragraph 7(a) or Paragraph 7(b) shall credit the Developer

with an amount calculated by multiplying (x) the Betterment percentage stated in Paragraph 10(b), by (y) the amount billed on such invoice.

(d) The determinations and calculations of Betterment described in this Paragraph 10 shall exclude right of way acquisition costs. Betterment in connection with right-of-way acquisition is addressed in Paragraph 16.

11. **Salvage.** For any Adjustment from which the Owner recovers any materials and/or parts and retains or sells the same, after application of any applicable Betterment credit, the Developer is entitled to a credit for the salvage value of such materials and/or parts. If the Owner's costs are developed under procedure (1) or (2) described in Paragraph 5(b), then the final invoice submitted pursuant to Paragraph 7(a) shall credit the Developer with the full salvage value. If the Owner's costs are developed under procedure (3) described in Paragraph 5(b), then the Agreed Sum includes any credit due to the Developer on account of salvage.

12. **Utility Investigations.** At the Developer's request, the Owner shall assist the Developer in locating any Utilities (including appurtenances) which are owned and/or operated by Owner and may be impacted by the Project. Without limiting the generality of the foregoing, in order to help assure that neither the adjusted Owner Utilities nor existing, unadjusted utilities owned or operated by the Owner are damaged during construction of the Project, the Owner shall mark in the field the location of all such utilities horizontally on the ground in advance of Project construction in the immediate area of such utilities.

13. **Inspection and Ownership of Owner Utilities.**

(a) The Developer shall have the right, at its own expense, to inspect the Adjustment work performed by the Owner or its contractors, during and upon completion of construction. All inspections of work shall be completed and any comment provided within **five (5) business days** after request for inspection is received.

(b) The Owner shall accept full responsibility for all future repairs and maintenance of said Owner Utilities. In no event shall the Developer or TxDOT become responsible for making any repairs or maintenance, or for discharging the cost of same. The provisions of this Paragraph 13(b) shall not limit any rights which the Owner may have against the Developer if either party respectively damages any Owner Utility as a result of its respective Project activities.

14. **Design Changes.** The Developer will be responsible for additional Adjustment design and responsible for additional construction costs necessitated by design changes to the Project made after approval of the Plans, upon the terms specified herein.

15. **Field Modifications.** The Owner shall provide the Developer with documentation of any field modifications, including Utility Adjustment Field Modifications as well as minor changes as described in Paragraph 17(b), occurring in the Adjustment of the Owner Utilities.

16. **Real Property Interests.**

(a) The Owner has provided, or upon execution of this Agreement shall promptly provide to the Developer, documentation acceptable to TxDOT indicating any right, title or interest in real property claimed by the Owner with respect to the Owner Utilities in their existing location(s). Such claims are subject to TxDOT's approval as part of its review of the Developer's Utility Assembly as described in Paragraph 2. Claims approved by TxDOT as to rights or interests are referred to herein as "Existing Interests".

(b) If acquisition of any new easement or other interest in real property ("New Interest") is necessary for the Adjustment of any Owner Utilities, then the Owner shall be responsible for undertaking such acquisition. The Owner shall implement each acquisition hereunder expeditiously so that related Adjustment construction can proceed in accordance with the Developer's Project schedules. The Developer shall be responsible for its share (if any, as specified in Paragraph 6) of the actual and reasonable acquisition costs of any such New Interest (including without limitation the Owner's reasonable overhead charges and reasonable legal costs as well as compensation paid to the landowner), excluding any costs attributable to Betterment as described in Paragraph 16(c), and subject to the provisions of Paragraph 16(e); provided, however, that all acquisition costs shall be subject to the Developer's prior written approval. Eligible acquisition costs shall be segregated from other costs on the Owner's estimates and invoices. Any such New Interest shall have a written valuation and shall be acquired in accordance with applicable law.

(c) The Developer shall pay its share only for a replacement in kind of an Existing Interest (e.g., in width and type), unless a New Interest exceeding such standard (i) is required in order to accommodate the Project or by compliance with applicable law, or (ii) is called for by the Developer in the interest of overall Project economy. Any New Interest which is not the Developer's cost responsibility pursuant to the preceding sentence shall be considered a Betterment to the extent that it upgrades the Existing Interest which it replaces, or in its entirety if the related Owner Utility was not installed pursuant to an Existing Interest. Betterment costs shall be solely the Owner's responsibility.

(d) For each Existing Interest located within the final Project right of way, upon completion of the related Adjustment work and its acceptance by the Owner, the Owner agrees to execute a quitclaim deed or other appropriate documentation relinquishing such Existing Interest to TxDOT, unless the affected Owner Utility is remaining in its original location or is being reinstalled in a new location within the area subject to such Existing Interest. All quitclaim deeds or other relinquishment documents shall be subject to TxDOT's approval as part of its review of the Utility Assembly as described in Paragraph 2. For each such Existing Interest relinquished by the Owner, the Developer shall do one of the following to compensate the Owner for such Existing Interest, as appropriate:

(i) If the Owner acquires a New Interest for the affected Owner Utility, the Developer shall reimburse the Owner for the Developer's share of the Owner's actual and reasonable acquisition costs in accordance with Paragraph 16(b) and subject to Paragraph 16(c); or

(ii) If the Owner does not acquire a New Interest for the affected Owner Utility, the Developer shall compensate the Owner for the Developer's share of the fair market value of such relinquished Existing Interest, as mutually agreed between the Owner and the Developer and supported by a written valuation.

The compensation, if any, provided to the Owner pursuant to either subparagraph (i) or subparagraph (ii) above shall constitute complete compensation to the Owner for the relinquished Existing Interest and any New Interest, and no further compensation shall be due to the Owner from the Developer or TxDOT on account of such Existing Interest or New Interest(s).

(e) The Owner shall execute a Utility Joint Use Acknowledgment (TxDOT-U-80A) for each Adjustment where required pursuant to TxDOT policies. All Utility Joint Use

Acknowledgments shall be subject to TxDOT approval as part of its review of the Utility Assembly as described in Paragraph 2.

17. **Amendments and Modifications.** This Agreement may be amended or modified only by a written instrument executed by the parties hereto, in accordance with Paragraph 17(a) or Paragraph 17(b) below.

(a) Except as otherwise provided in Paragraph 17(b), any amendment or modification to this Agreement or the Plans attached hereto shall be implemented by a Utility Adjustment Agreement Amendment ("UAAA") in the form of Exhibit B hereto (TxDOT-CDA-U-35A-OM). The UAAA form can be used for a new scope of work with concurrence of the Developer and TxDOT as long as the Design and Construction responsibilities have not changed. Each UAAA is subject to the review and approval of TxDOT, prior to its becoming effective for any purpose and prior to any work being initiated thereunder. The Owner agrees to keep and track costs for each UAAA separately from other work being performed.

(b) For purposes of this Paragraph 17(b), "Utility Adjustment Field Modification" shall mean any horizontal or vertical design change from the Plans included in a Utility Assembly previously approved by TxDOT, due either to design of the Project or to conditions not accurately reflected in the approved Utility Assembly (e.g., shifting the alignment of an 8 in. water line to miss a modified or new roadway drainage structure). A Utility Adjustment Field Modification agreed upon by the Developer and the Owner does not require a UAAA, provided that the modified Plans have been submitted to TxDOT for its review and comment. A minor change (e.g., an additional water valve, an added Utility marker at a ROW line, a change in vertical bend, etc.) will not be considered a Utility Adjustment Field Modification and will not require a UAAA, but shall be shown in the documentation required pursuant to Paragraph 15.

18. **Entire Agreement.** This Agreement embodies the entire agreement between the parties and there are no oral or written agreements between the parties or any representations made which are not expressly set forth herein.

19. **Assignment; Binding Effect; TxDOT as Third Party Beneficiary.** The Owner and the Developer may not assign any of its rights or delegate any of its duties under this Agreement without the prior written consent of the other parties and of TxDOT, which consent may not be unreasonably withheld or delayed; provided, however, that the Developer may assign any of its rights and/or delegate any of its duties to TxDOT or to any other entity with which TxDOT contracts to fulfill the Developer's obligations at any time without the prior consent of the Owner.

This Agreement shall bind the Owner, the Developer and their successors and permitted assigns, and nothing in this Agreement nor in any approval subsequently provided by any party hereto shall be construed as giving any benefits, rights, remedies, or claims to any other person, firm, corporation or other entity, including, without limitation, any contractor or other party retained for the Adjustment work or the public in general; provided, however, that the Owner and the Developer agree that although TxDOT is not a party to this Agreement, TxDOT is intended to be a third-party beneficiary to this Agreement.

20. **Breach by the Parties.**

(a) If the Owner claims that the Developer has breached any of its obligations under this Agreement, the Owner will notify the Developer and TxDOT in writing of such breach, and the Developer shall have 30 days following receipt of such notice in which to cure such breach, before the Owner may invoke any remedies which may be available to it as a

result of such breach; provided, however, that both during and after such period TxDOT shall have the right, but not the obligation, to cure any breach by the Developer. Without limiting the generality of the foregoing, (a) TxDOT shall have no liability to the Owner for any act or omission committed by the Developer in connection with this Agreement, and (b) in no event shall TxDOT be responsible for any repairs or maintenance to the Owner Utilities adjusted pursuant to this Agreement.

(b) If the Developer claims that the Owner has breached any of its obligations under this Agreement, the Developer will notify the Owner and TxDOT in writing of such breach, and the Owner shall have 30 days following receipt of such notice in which to cure such breach, before the Developer or the Developer may invoke any remedies which may be available to it as a result of such breach.

21. **Traffic Control.** The Developer shall provide traffic control or shall reimburse the Owner for the Developer's share (if any, as specified in Paragraph 6) of the costs for traffic control made necessary by the Adjustment work performed by either the Developer or the Owner pursuant to this Agreement, in compliance with the requirements of the Texas Manual on Uniform Traffic Control Devices. Betterment percentages calculated in Paragraph 10 shall also apply to the traffic control costs.

22. **Notices.** Except as otherwise expressly provided in this Agreement, all notices or communications pursuant to this Agreement shall be sent or delivered to the following:

The Owner:

Phone:
Fax:

The Developer:

Phone:
Fax:

A party sending a notice of default of this Agreement to another party shall also send a copy of such notice to TxDOT and to the CDA Utility Manager at the following addresses:

TxDOT: TxDOT Department of Transportation
Attention: Donald C. Toner, Jr., SR/WA
125 E. 11th Street
Austin, Texas 78701-2483
Phone: (512) 936-0980

CDA Utility Manager

Any notice or demand required herein shall be given (a) personally, (b) by certified or registered mail, postage prepaid, return receipt requested, or (c) by reliable messenger or overnight courier to the appropriate address set forth above. Any notice served personally shall be deemed delivered upon receipt and served by certified or registered mail or by reliable messenger or

overnight courier shall be deemed delivered on the date of receipt as shown on the addressee's registry or certification of receipt or on the date receipt is refused as shown on the records or manifest of the U.S. Postal Service or such courier. Any party may from time to time designate any other address for this purpose by written notice to all other parties; TxDOT may designate another address by written notice to all parties.

23. **Approvals.** Any acceptance, approval, or any other like action (collectively "Approval") required or permitted to be given by either the Developer or the Owner pursuant to this Agreement:

(a) Must be in writing to be effective (except if deemed granted pursuant hereto),

(b) Shall not be unreasonably withheld or delayed; and if Approval is withheld, such withholding shall be in writing and shall state with specificity the reason for withholding such Approval, and every effort shall be made to identify with as much detail as possible what changes are required for Approval, and

(c) Except for approvals by TxDOT, and except as may be specifically provided otherwise in this Agreement, shall be deemed granted if no response is provided to the party requesting an Approval within the time period prescribed by this Agreement (or if no time period is prescribed, then fourteen (14) calendar days), commencing upon actual receipt by the party from which an Approval is requested or required, of a request for Approval from the requesting party. All requests for Approval shall be sent out by the requesting party to the other party in accordance with Paragraph 22.

24. **Time; Force Majeure.**

(a) Time is of the essence in the performance of this Agreement.

(b) All references to “days” herein shall be construed to refer to calendar days, unless otherwise stated.

(c) No party shall be liable to another party for any delay in performance under this Agreement from any cause beyond its control and without its fault or negligence (“Force Majeure”), such as acts of God, acts of civil or military authority, fire, earthquake, strike, unusually severe weather, floods or power blackouts. If any such event of Force Majeure occurs, the Owner agrees, if requested by the Developer, to accelerate its efforts hereunder if reasonably feasible in order to regain lost time, so long as the Developer agrees to reimburse the Owner for the reasonable and actual costs of such efforts.

25. **Continuing Performance.** In the event of a dispute, the Owner and the Developer agree to continue their respective performance hereunder to the extent feasible in light of the dispute, including paying billings, and such continuation of efforts and payment of billings shall not be construed as a waiver of any legal right.

26. **Equitable Relief**. The Developer and the Owner acknowledge and agree that delays in Adjustment of the Owner Utilities will impact the public convenience, safety and welfare, and that (without limiting the parties’ remedies hereunder) monetary damages would be inadequate to compensate for delays in the construction of the Project. Consequently, the parties hereto (and TxDOT as well, as a third party beneficiary) shall be entitled to specific performance or other equitable relief in the event of any breach of this Agreement which threatens to delay construction of the Project; provided, however, that the fact that specific performance or other equitable relief may be granted shall not prejudice any claims for payment or otherwise related to performance of the Adjustment work hereunder.

27. **Authority.** The Owner and the Developer each represent and warrant to the other party that the warranting party possesses the legal authority to enter into this Agreement and that it has taken all actions necessary to exercise that authority and to lawfully authorize its undersigned signatory to execute this Agreement and to bind such party to its terms. Each person executing this Agreement on behalf of a party warrants that he or she is duly authorized to enter into this Agreement on behalf of such party and to bind it to the terms hereof.

28. **Cooperation.** The parties acknowledge that the timely completion of the Project will be influenced by the ability of the Owner (and its contractors) and the Developer to coordinate their activities, communicate with each other, and respond promptly to reasonable requests. Subject to the terms and conditions of this Agreement, the Owner and the Developer agree to take all steps reasonably required to coordinate their respective duties hereunder in a manner consistent with the Developer's current and future construction schedules for the Project. The Owner further agrees to require its contractors to coordinate their respective work hereunder with the Developer.

29. **Termination.** If the Project is canceled or modified so as to eliminate the necessity of the Adjustment work described herein, then the Developer shall notify the Owner in writing and the Developer reserves the right to thereupon terminate this Agreement. Upon such termination, the parties shall negotiate in good faith an amendment that shall provide mutually acceptable terms and conditions for handling the respective rights and liabilities of the parties relating to such termination.

30. **Nondiscrimination**. Each party hereto agrees, with respect to the work performed by such party pursuant to this Agreement, that such party shall not discriminate on the grounds of race, color, sex, national origin or disability in the selection and/or retention of contractors and consultants, including procurement of materials and leases of equipment.

31. **Applicable Law, Jurisdiction and Venue**. This Agreement shall be governed by the laws of the State of Texas, without regard to the conflict of laws principles thereof. Venue for any action brought to enforce this Agreement or relating to the relationship between any of the parties shall be the District Court of Travis County, Texas or the United States District Court for the Western District of Texas (Austin).

32. **Waiver of Consequential Damages**. No party hereto shall be liable to any other party to this Agreement, whether in contract, tort, equity, or otherwise (including negligence, warranty, indemnity, strict liability, or otherwise), for any punitive, exemplary, special, indirect, incidental, or consequential damages, including, without limitation, loss of profits or revenues, loss of use, claims of customers, or loss of business opportunity.

33. **Captions**. The captions and headings of the various paragraphs of this Agreement are for convenience and identification only, and shall not be deemed to limit or define the content of their respective paragraphs.

34. **Counterparts.** This Agreement may be executed in any number of counterparts. Each such counterpart hereof shall be deemed to be an original instrument but all such counterparts together shall constitute one and the same instrument.

35. **Effective Date.** This Agreement shall become effective upon the later of (a) the date of signing by the last party (either the Owner or the Developer) signing this Agreement, and (b) the date of TxDOT's approval as indicated by the signature of TxDOT's representative, below.

APPROVED BY:
TEXAS DEPARTMENT OF TRANSPORTATION

By: _____
Authorized Signature

Printed
Name: Donald C. Toner, Jr., SR/WA

Date: _____

OWNER

[Print Owner Name]

By: _____
Duly Authorized Representative

Printed
Name: _____

Title: _____

Date: _____

DEVELOPER

By: _____
Duly Authorized Representative

Printed
Name: _____

Title: _____

Date: _____

County:
ROW CSJ No.:

Const. CSJ No.:

Highway:
Limits:
Fed. Proj. No.:

EXHIBIT A

PLANS, SPECIFICATIONS, COST ESTIMATES AND ALLOCATION

County:
ROW CSJ No.:

Const. CSJ No.:

Highway:
Limits:
Fed. Proj. No.:

EXHIBIT B

UTILITY ADJUSTMENT AGREEMENT AMENDMENT
(TxDOT-CDA-U-35A-OM)

County:
ROW CSJ No.:

Const. CSJ No.:

Highway:
Limits:
Fed. Proj. No.:

EXHIBIT C

STATEMENT COVERING CONTRACT WORK
(TxDOT-U-48)

County:
Highway:
Limits:
Fed. Proj. No.:
ROW CSJ No.:
Const. CSJ No.:

UTILITY ADJUSTMENT AGREEMENT AMENDMENT (Developer Managed)

(Amendment No. to Agreement No.: -U-_____)

THIS AMENDMENT TO PROJECT UTILITY ADJUSTMENT AGREEMENT (this "Amendment"), by and between , hereinafter identified as the "**Developer**", and _____, hereinafter identified as the "**Owner**", is as follows:

WITNESSETH

WHEREAS, the STATE of TEXAS, acting by and through the Texas Department of Transportation, hereinafter identified as "TxDOT", proposes to construct the toll project identified above (the "Project", as more particularly described in the "Original Agreement", defined below); and

WHEREAS, pursuant to that certain Comprehensive Development Agreement ("CDA") by and between TxDOT and the Developer with respect to the Project, the Developer has undertaken the obligation to design, construct, and potentially maintain the Project, including causing the removal, relocation, or other necessary adjustment of existing utilities impacted by the Project (collectively, "Adjustment"); and

WHEREAS, the Owner and Developer are parties to that certain executed Project Utility Adjustment Agreement designated by the "Agreement No." indicated above, as amended by previous amendments, if any (the "Original Agreement"), which provides for the adjustment of certain utilities owned and/or operated by the Owner (the "Utilities"); and

WHEREAS, the parties are required to utilize this Amendment form in order to modify the Original Agreement to add the adjustment of Owner facilities not covered by the Original Agreement; and

WHEREAS, the parties desire to amend the Original Agreement to add additional Owner utility facility(ies), on the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the agreements contained herein, the parties hereto agree as follows:

1. **Amendment.** The Original Agreement is hereby amended as follows:

1.1 **Plans.**

(a) The description of the Owner Utilities and the proposed Adjustment of the Owner Utilities in the Original Agreement is hereby amended to add the following utility facility(ies) ("Additional Owner Utilities") and proposed Adjustment(s) to the Owner Utilities described in the Original Agreement *[insert below a description of the affected facilities (by type, size and location) as well as a brief description of the nature of the Adjustment work to be performed (e.g., "adjust 12" waterline from approximately Highway Station 100+00 to approximately Highway Station 200+00)];* and

(b) The Plans, as defined in Paragraph 1 of the Original Agreement, are hereby amended to add thereto the plans, specifications and cost estimates attached hereto as Exhibit A.

(c) The Plans attached hereto as Exhibit A, along with this Amendment, shall be submitted upon execution to TxDOT in accordance with Paragraph 2 of the Original Agreement, and Paragraph 2 shall apply to this Amendment and the Plans attached hereto in the same manner as if this Amendment were the Original Agreement. If the Owner claims an Existing Interest for any of the Additional Owner Utilities, documentation with respect to such claim shall be submitted to TxDOT as part of this Amendment and the attached Plans, in accordance with Paragraph 15(a) of the Original Agreement.

1.2 **Reimbursement of Owner's Indirect Costs.** For purposes of Paragraph 6 of the Original Agreement, the following terms apply to the Additional Owner Utilities and proposed Adjustment:

(a) Developer agrees to reimburse the Owner its share of the Owner's indirect costs (e.g., engineering, inspection, testing, ROW) as identified in Exhibit A. When requested by the Owner, monthly progress payments will be made. The monthly payment will not exceed 80% of the estimated indirect work done to date. Once the indirect work is complete, final payment of the eligible indirect costs will be made. Intermediate payments shall not be construed as final payment for any items included in the intermediate payment.

(b) The Owner's indirect costs associated with Adjustment of the Owner Utilities shall be developed pursuant to the method checked and described below *[check only one box]*:

☐ (1) Actual related indirect costs accumulated in accordance with (i) a work order accounting procedure prescribed by the applicable Federal or State regulatory body, or (ii) established accounting procedure developed by the Owner and which the Owner uses in its regular operations (either (i) or (ii) referred to as "Actual Cost") or,

☐ (2) The agreed sum of $_____ ("Agreed Sum") as supported by the analysis of the Owner's estimated costs attached hereto as part of Exhibit A.

1.3 **Advancement of Funds by Owner for Construction Costs.**

(a) Advancement of Owner's Share, if any, of estimated costs

Exhibit A shall identify all estimated engineering and construction-related costs, including labor, material, equipment and other miscellaneous construction items. Exhibit A shall also identify the Owner's and Developer's respective shares of the estimated costs.

The Owner shall advance to the Developer its allocated share, if any, of the estimated costs for construction and engineering work to be performed by Developer, in accordance with the following terms:

☐ The adjustment of the Owner's Utilities does not require advancement of funds.

☐ The adjustment of the Owner's Utilities does require advancement of funds and the terms agreed to between the Developer and Owner are listed below.

[Insert terms of advance funding to be agreed between Developer and Owner.]

(b) Adjustment Based on Actual Costs or Agreed Sum

[Check the <u>one</u> appropriate provision, if advancement of funds is required]:

☐ The Owner is responsible for its share of the Developer actual cost for the Adjustment, including the identified Betterment. Accordingly, upon completion of all Adjustment work to be performed by both parties pursuant to this Amendment, (i) the Owner shall pay to the Developer the amount, if any, by which the actual cost of the Betterment (as determined in Paragraph 9(b)) plus the actual cost of Owner's share of the Adjustment (based on the allocation set forth in Exhibit A) exceeds the estimated cost advanced by the Owner, or (ii) the Developer shall refund to the Owner the amount, if any, by which such advance exceeds such actual cost, as applicable.

☐ The Agreed Sum is the agreed and final amount due for the Adjustment, including any Betterment, under this Amendment. Accordingly, no adjustment (either up or down) of such amount shall be made based on actual costs.

1.4 **<u>Reimbursement of Owner's Indirect Costs</u>.** For purposes of Paragraph 6 of the Original Agreement, the following terms apply to the Additional Owner Utilities and proposed Adjustment:

(a) Developer agrees to reimburse the Owner its share of the Owner's indirect costs (e.g., engineering, inspection, testing, ROW) as identified in Exhibit A. When requested by the Owner, monthly progress payments will be made. The monthly payment will not exceed 80% of the estimated indirect work done to date. Once the indirect work is complete, final payment of the eligible indirect costs will be made. Intermediate payments shall not be construed as final payment for any items included in the intermediate payment.

(b) The Owner's indirect costs associated with Adjustment of the Owner Utilities shall be developed pursuant to the method checked and described below *[check only one box]*:

☐ (1) Actual related indirect costs accumulated in accordance with (i) a work order accounting procedure prescribed by the applicable Federal or State regulatory body, or (ii) established accounting procedure developed by the Owner and which the Owner uses in its regular operations (either (i) or (ii) referred to as "Actual Cost") or,

☐ (2) The agreed sum of $_____ ("Agreed Sum") as supported by the analysis of the Owner's estimated costs attached hereto as part of Exhibit A.

1.5 **Responsibility for Costs of Adjustment Work.** For purposes of Paragraph 4 of the Original Agreement, responsibility for the Agreed Sum or Actual Cost, as applicable, of all Adjustment work to be performed pursuant to this Amendment shall be allocated between the Developer and the Owner as identified in Exhibit A hereto and in accordance with §203.092, Texas Transportation Code. An allocation percentage may be determined by application of an eligibility ratio, if appropriate, as detailed in Exhibit A, provided however, that any portion of an Agreed Sum or Actual Cost attributable to Betterment shall be allocated 100% to the Owner in accordance with Paragraph 9 of the Original Agreement.

1.6 **Betterment.**

(a) Paragraph 9(b) (Betterment and Salvage) of the Original Agreement is hereby amended to add the following *[Check the one box that applies, and complete if appropriate]*:

☐ The Adjustment of the Additional Owner Utilities, pursuant to the Plans as amended herein, does not include any Betterment.

☐ The Adjustment of the Additional Owner Utilities, pursuant to the Plans as amended herein, includes Betterment to the Additional Owner Utilities by reason of *[insert explanation, e.g. "replacing 12" pipe with 24" pipe]*: _____. The Developer has provided to the Owner comparative estimates for (i) all work to be performed by the Developer pursuant to this Amendment, including work attributable to the Betterment, and (ii) the cost to perform such work without the Betterment, which estimates are hereby approved by the Owner. The estimated cost of the Developer work under this Amendment which is attributable to Betterment is $_____, calculated by subtracting (ii) from (i). The percentage of the total cost of the Developer work under this Amendment which is attributable to Betterment is _____ %, calculated by subtracting (ii) from (i), which remainder is divided by (i).

(b) If the above Paragraph 1.6(a) identifies Betterment, the Owner shall advance to the Developer, at least **fourteen (14) days** prior to the date scheduled for commencement of construction for Adjustment of the Additional Owner Utilities, the estimated cost attributable to Betterment as set forth in Paragraph 1.6(a) of this Amendment. If the Owner fails to advance payment to the Developer on or before the foregoing deadline, the Developer shall have the option of commencing and completing (without delay) the Adjustment work without installation of the applicable Betterment. *[Check the <u>one</u> appropriate provision]*:

☐ The estimated cost stated in Paragraph 1.6(a) of this Amendment is the agreed and final amount due for Betterment under this Amendment, and accordingly no adjustment (either up or down) of such amount shall be made based on actual costs.

☐ The Owner is responsible for the Developer Actual Cost for the identified Betterment. Accordingly, upon completion of all Adjustment work to be performed by both parties pursuant to this Amendment, (i) the Owner shall pay to the Developer the amount, if any, by which the actual cost of the Betterment (determined as provided below in this paragraph) exceeds the estimated cost

advanced by the Owner, or (ii) the Developer shall refund to the Owner the amount, if any, by which such advance exceeds such actual cost, as applicable. Any additional payment by the Owner shall be due within **sixty (60) days** after the Owner's receipt of the Developers invoice therefor, together with supporting documentation; any refund shall be due within **sixty (60) days** after completion of the Adjustment work under this Amendment. The Actual Cost of Betterment incurred by the Developer shall be calculated by multiplying (i) the Betterment percentage stated in Paragraph 1.6(a) of this Amendment, by (ii) the Actual Cost of all work performed by the Developer pursuant to this Amendment (including work attributable to the Betterment), as invoiced by the Developer to the Owner.

(c) The determinations and calculations of Betterment described in this Amendment shall exclude right-of-way acquisition costs. Betterment in connection with right-of-way acquisition is addressed in Paragraph 15 of the Original Agreement.

1.7 **Miscellaneous.**

(a) Owner and Developer agree to refer to this Amendment, designated by the "Amendment No." and "Agreement Number" indicated on page 1 above, on all future correspondence regarding the Adjustment work that is the subject of this Amendment and to track separately all costs relating to this Amendment and the Adjustment work described herein.

(b) [*Include any other proposed amendments allowed by applicable law.*]

2. **General.**

(a) All capitalized terms used in this Amendment shall have the meanings assigned to them in the Original Agreement, except as otherwise stated herein.

(b) This Amendment may be executed in any number of counterparts. Each such counterpart hereof shall be deemed to be an original instrument but all such counterparts together shall constitute one and the same instrument.

(c) Except as amended hereby, the Original Agreement shall remain in full force and effect. In no event shall the responsibility, as between the Owner and the Developer, for the preparation of the Plans and the Adjustment of the Owner Utilities be deemed to be amended hereby.

(d) This Amendment shall become effective upon the later of (a) the date of signing by the last party (either the Owner or the Developer) signing this Amendment, and (b) the completion of TxDOT's review and approval as indicated by the signature of TxDOT's representative, below.

APPROVED BY:

TEXAS DEPARTMENT OF TRANSPORTATION

By: _____
Authorized Signature

Printed Name: _____

Title: _____

Date: _____

OWNER

_____
[Print Owner Name]

By: _____
Duly Authorized Representative

Printed Name: _____

Title: _____

Date: _____

DEVELOPER

By: _____
Duly Authorized Representative

Printed Name: _____

Title: _____

Date: _____

County:
Highway:
Limits:
Fed. Proj. No.:
ROW CSJ No.:

Const. No.: **UTILITY ADJUSTMENT AGREEMENT AMENDMENT (Owner Managed)**

(Amendment No. to Agreement No.: -U-)

THIS AMENDMENT TO PROJECT UTILITY ADJUSTMENT AGREEMENT (this "Amendment"), by and between, hereinafter identified as the "**Developer**", and _____, hereinafter identified as the "**Owner**", is as follows:

WITNESSETH

WHEREAS, the STATE of TEXAS, acting by and through the Texas Department of Transportation, hereinafter identified as "TxDOT", proposes to construct the toll project identified above (the "Project", as more particularly described in the "Original Agreement", defined below); and

WHEREAS, pursuant to that certain Comprehensive Development Agreement ("CDA") by and between TxDOT and the Developer with respect to the Project, the Developer has undertaken the obligation to design, construct, and potentially maintain the Project, including causing the removal, relocation, or other necessary adjustment of existing utilities impacted by the Project (collectively, "Adjustment"); and

WHEREAS, the Owner and Developer are parties to that certain executed Project Utility Adjustment Agreement designated by the "Agreement No." indicated above, as amended by previous amendments, if any (the "Original Agreement"), which provides for the adjustment of certain utilities owned and/or operated by the Owner (the "Utilities"); and

WHEREAS, the parties are required to utilize this Amendment form in order to modify the Original Agreement to add the adjustment of Owner utilities facilities not covered by the Original Agreement; and

WHEREAS, the parties desire to amend the Original Agreement to add additional Owner utility facility(ies), on the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the agreements contained herein, the parties hereto agree as follows:

1. **Amendment.** The Original Agreement is hereby amended as follows:

   (a) The description of the Owner Utilities and the proposed Adjustment of the Owner Utilities in the Original Agreement is hereby amended to add the following facility(ies) ("Additional Owner Utilities") and proposed Adjustment(s) *[insert below a description of the affected facilities (by type, size and location) as well as a brief description of the nature of the Adjustment work to be performed (e.g., "adjust 12" waterline from approximately Highway Station 100+00 to approximately Highway Station 200+00")]*:

(b) The Plans, as defined in Paragraph 1 of the Original Agreement, are hereby amended to add thereto the plans, specifications and cost estimates attached hereto as Exhibit A.

(c) The Plans attached hereto as Exhibit A, along with this Amendment, shall be submitted upon execution to TxDOT in accordance with Paragraph 2 of the Original Agreement, and Paragraph 2 shall apply to this Amendment and the Plans attached hereto in the same manner as if this Amendment were the Original Agreement. If the Owner claims an Existing Interest for any of the Additional Owner Utilities, documentation with respect to such claim shall be submitted to TxDOT as part of this Amendment and the attached Plans, in accordance with Paragraph 16(a) of the Original Agreement.

(d) Paragraph 4(f) of the Original Agreement is hereby amended to add the following deadline for the Adjustment of the Additional Owner Utilities *[check one box that applies]*:

☐ Owner shall complete all of the utility reconstruction and relocation work, including final testing and acceptance thereof, on or before _____, 20_____.

☐ Owner shall complete all of the utility reconstruction and relocation work, including final testing and acceptance thereof, within _____ calendar days after delivery to Owner of a notice to proceed by Developer.

(e) For purposes of Paragraph 5(b) of the Original Agreement, the Owner's costs associated with Adjustment of the Additional Owner Utilities shall be developed pursuant to the method checked and described below, *[check only one box]*:

☐ (1) Actual costs accumulated in accordance with a work order accounting procedure prescribed by the applicable Federal or State regulatory body ("Actual Cost"); or

☐ (2) Actual costs accumulated in accordance with an established accounting procedure developed by the Owner and which the Owner uses in its regular operations ("Actual Cost"); or

☐ (3) The agreed sum of $_____("Agreed Sum"), as supported by the analysis of estimated costs attached hereto as part of Exhibit A

(f) For purposes of Paragraph 6 of the Original Agreement, responsibility for the Agreed Sum or Actual Cost, as applicable, of all Adjustment work to be performed pursuant to this Amendment shall be allocated between the Developer and the Owner as identified in Exhibit A and in accordance with §203.092 of the Texas Transportation Code. An allocation percentage may be determined by application of an eligibility ratio, if appropriate, as detailed in Exhibit A; provided, however, that any portion of an Agreed Sum or Actual Cost attributable to Betterment shall be allocated 100% to the Owner in accordance with Paragraph 10 of the Original Agreement.

(g) Paragraph 10(b) of the Original Agreement is hereby amended to add the following *[Check the one box that applies]*:

☐ The Adjustment of the Additional Owner Utilities, pursuant to the Plans as amended herein, does not include any Betterment.

☐ The Adjustment of the Additional Owner Utilities, pursuant to the Plans as amended herein, includes Betterment to the Additional Owner Utilities by reason of *[insert explanation, e.g. "replacing 12" pipe with 24" pipe]*: _____. The Owner has provided to the Developer comparative estimates for (i) all costs for work to be performed by the Owner pursuant to this Amendment, including work attributable to the Betterment, and (ii) the cost to perform such work without the Betterment, which estimates are hereby approved by the Developer. The estimated amount of the Owner's costs for work under this Agreement which is attributable to Betterment is $_____, calculated by subtracting (ii) from (i). The percentage of the total cost of the Owner's work hereunder which is attributable to Betterment is _____%, calculated by subtracting (ii) from (i) which remainder shall be divided by (i).

(h) The following shall apply to any Betterment described in Paragraph 1(g) of this Amendment:

(i) If the Owner's costs are developed under procedure (3) described in Paragraph 1(e) of this Amendment, then the agreed sum stated in that Paragraph includes any credits due to the Developer on account of the identified Betterment, and no further adjustment shall be made on account of same.

(ii) If the Owner's costs are developed under procedure (1) or (2) described in Paragraph 1(e) of this Amendment, the parties agree as follows *[check the <u>one</u> appropriate provision]*:

☐ The estimated cost stated in Paragraph 1(g) of this Amendment is the agreed and final amount due for Betterment under this Amendment. Accordingly, each intermediate invoice submitted for Adjustment(s) of the Additional Owner Utilities pursuant to Paragraph 7(b) of the Original Agreement shall credit the Developer with an appropriate amount of the agreed Betterment amount, proportionate to the percentage of completion reflected in such invoice. The final invoice submitted for Adjustment(s) of the Additional Owner Utilities pursuant to Paragraph 7(a) of the Original Agreement shall reflect the full amount of the agreed Betterment credit. For each invoice described in this paragraph, the credit for Betterment shall be applied before calculating the Developer's share (pursuant to Paragraph 1(e) of this Amendment) of the cost of the Adjustment work. No other adjustment (either up or down) shall be made based on actual Betterment costs.

☐ The Owner is responsible for the actual cost of the identified Betterment, determined by multiplying (a) the Betterment percentage stated in Paragraph 1(g) of this Amendment, by (b) the actual cost of all work performed by the Owner pursuant to this Amendment (including work attributable to the Betterment), as invoiced by the Owner to the Developer. Accordingly, each invoice submitted for Adjustment of the Additional Owner Utilities pursuant to either Paragraph 7(a) or Paragraph 7(b) of the Original Agreement shall credit the Developer with an amount calculated by multiplying (x) the Betterment percentage stated in Paragraph 1(g) of this Amendment, by (y) the amount billed on such invoice.

(i) The determinations and calculations of Betterment described in this Amendment shall exclude right-of-way acquisition costs. Betterment in connection with right-of-way acquisition is addressed in Paragraph 16 of the Original Agreement.

(j) Owner and the Developer agree to refer to this Amendment, designated by the "Amendment No." and "Agreement number" indicated on page 1 above, on all future correspondence regarding the Adjustment work that is the subject of this Amendment and to track separately all costs relating to this Amendment and the Adjustment work described herein.

(k) [*Include any other proposed amendments in compliance with the applicable law*.]

2. **General.**

(a) All capitalized terms used in this Amendment shall have the meanings assigned to them in the Original Agreement, except as otherwise stated herein.

(b) This Amendment may be executed in any number of counterparts. Each such counterpart hereof shall be deemed to be an original instrument but all such counterparts together shall constitute one and the same instrument.

(c) Except as amended hereby, the Original Agreement shall remain in full force and effect. In no event shall the responsibility, as between the Owner and the Developer, for the preparation of the Plans and the Adjustment of the Owner Utilities be deemed to be amended hereby.

(d) This Amendment shall become effective upon the later of (a) the date of signing by the last party (either the Owner or the Developer) signing this Amendment, and (b) the completion of TxDOT's review and approval as indicated by the signature of TxDOT's representative, below.

APPROVED BY:

TEXAS DEPARTMENT OF TRANSPORTATION

By: _____
Authorized Signature

Printed Name: _____

Date: _____

OWNER

_____
[Print Owner Name]

By: _____
Duly Authorized Representative

Printed Name: _____

Title: _____

Date: _____

DEVELOPER

By: _____
Duly Authorized Representative

Printed Name: _____

Title: _____

Date: _____

Texas Department of Transportation
Book 2 – Technical Provisions

Grand Parkway Project

Attachment 8-1
Houston District Guidelines for Foundation Design

May 3, 2012

September 12, 1988

MEMORANDUM TO: District 12 Bridge Designers and Laboratory Geotechnical Engineers

FROM: E. J. Suchicki, P.E.
Michael Ho, P.E.

SUBJECT: Guidelines for Foundation Design

The purpose of this memo is to record the foundation practices and design assumptions used over the years in this district and to standardize guidelines for foundation design.

Square Concrete Piles

Precast prestressed square concrete piles have become the standard, most used, pile in this district. The main reasons being economy and durability. The most commonly used sizes are the 16", 18", and 20" square pile. The 14" sq. pile is not recommended for use because of frequent breakage during driving and handling. The 16" sq. is the most frequently used pile and is recommended for general use. The 18" sq. and 20"sq. are used for high loads and/or when slenderness is a factor. The 24" sq. pile is seldom used and the fabricators do not stock the forms which leads to higher unit cost.

1. Maximum Design Loads & Total Length

Concrete Piling Max Service Load & Lengths				
	At Abutments & Trestle Bents		Under Footings	
Size	Max Load	Max Length	Max Load	Max Length
16" Sq.	75 Tons	75 Ft.	125 Tons	75 Ft.
18" Sq.	90 Tons	90 Ft.	175 Tons	90 Ft.
20" Sq.	110 Tons	100 Ft.	225 Tons	100 Ft.

2. Piling Lengths

Abutment Bents:

All fill material should be disregarded for load carrying capacity. Minimum length of 20 ft. At least 15 ft. penetration into natural ground except for wingwall piles.

Interior Bents:

Dry Crossings: Minimum effective penetration 20 ft. Discount the top 5 ft. of pile to allow for moisture fluctuation.

Wet Crossings: Minimum effective penetration 20 ft. below scour line. Discount the top 10 ft. below flow line for scouring. If a stream has a history of turbulent flow, more footage should be discounted for scouring.

3. Piling Length for Stability

Trestle pile bents:
Piling below scour line shall not be less than 70% of pile and cap above scour line.

Individual or strapped column footing on piling: Minimum length 30' below scour line.

One homogenous footing as under a river bridge pier: Minimum length 30' below scour line.

4. Skin friction is used in the design of a pile foundation. Point bearing is neglected in the capacity calculation.

Drilled Shafts

The amount of footage to be disregarded due to moisture fluctuations and non-reliable friction transfer is 10 ft. from finished grade.

Total capacity is based on skin friction and point bearing on soils.

For shafts with or without casing, drilled dry or with drilling mud and concrete placed normally, use soil reduction factor (S_R) of 0.7.

Maximum skin friction is 1.25 tons/sq. ft. which is further reduced by the 0.7 reduction factor.

In general, use 2 tons/sq. ft. for point bearing, regardless of soil type where the shaft is tipped in. No point bearing capacity is assumed for drilled shafts with diameter equal to or less than 24". For drilled shafts with diameters over 5 ft., the allowable point bearing load is based on Cone Penetrometer tests (Blow counts) and Figure 2 in the Foundation Exploration and Design Manual.

General Information

Piling/drilled shafts should not tip into or just above soft stratum.

When soil condition varies quite considerably from one test hole to another, the designer should consider the use of test piling. He/She shall discuss this matter with the Laboratory Engineer before making any final decision.

If the piling/drilled shafts are located in the vicinity between two test holes, a weaker hole design curve should be used for calculating the capacity.

The above are intended as guidelines only. If you have any questions on foundation design, please contact either Michael Ho, District laboratory Engineer, at extension 619 or Stanley Yin at extension 620.

All foundation designs are to be sent to the District lab for design and/or final review prior to submission to D-5. The District Laboratory is also responsible for any discussion with D-5 Geotechnical Division pertaining to foundation design matters.

Ed Sucharski
District Bridge Engineer

Michael C. Ho
District Laboratory Engineer

EJS:ach

Texas Department of Transportation
Book 2 – Technical Provisions

Grand Parkway Project

Attachment 9-1
Survey Controls

Segment F-1 (From South of US 290 to North of SH 249)

All bearings and coordinates are based on the Texas Coordinate System, South Central Zone, North American Datum of 1983 (NAD 83), (1993 adj.) All distances and coordinates are expressed in U.S. survey feet. All distances and coordinates are surface and may be converted to grid by dividing a combined adjustment factor of 1.00013, control provided by Brown & Gay. Points F14, F19, F30, F40, F65 and F71 were held fixed.

F -1 Project Elevation Datum

All Project Elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88), 1995/1996 Adjustment, and were based on Houston Galveston Coastal Subsidence District (HGCSD) Monuments.
Monuments were originally set by Brown & Gay Engineers, Inc. Additional monuments were set by Weisser Engineering Co. and RODS Surveying, Inc. All elevations were adjusted by RODS Surveying, inc., based on the most stable monuments set by Brown & Gay Engineers, Inc.
TSARP conversion

It was determined that TSARP Monuments were at an average of 0.28 feet below the Project Elevation Datum.

Segment F-2 (From North of SH 249 to East of IH 45)

All bearings and coordinates are based on the Texas Coordinate System, South Central Zone, North American Datum of 1983 (NAD 83), 1993 Adj. All distances and coordinates shown are surface values and may be converted to grid by dividing by a combined adjustment factor of 1.00013. NGS Monuments HGCSD-1, HGCSD-24, and Clevport were held for horizontal control as provided by TxDOT.

F-2 Project Elevation Datum

All project elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88), 1995/1996 Adjustment, and were based on Houston Galveston Coastal Subsidence District (HGCSD) monuments.
Monuments were originally set by Brown & Gay Engineers, Inc. Additional monuments were set by Weisser Engineering Co. and Landtech Consultants, Inc. All elevations were adjusted by Landtech Consultants, Inc., based on the most stable monuments set by Brown & Gay Engineers, Inc.

TSARP conversion

TSARP Monuments are at an average of 0.64 feet below the project elevation datum.

Segment G-1 (From East of IH 45 to West of Montgomery County Line)

All bearings and coordinates are based on the Texas Coordinate System, South Central Zone, North American Datum of 1983, 1993 Adjustment. All distances and coordinates shown are surface and may be converted to grid by dividing by a combined adjustment factor of 1.00013.

G-1 Project Elevation Datum:

All project elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88), 1995/1996 Adjustment, and were based on Houston Galveston Coastal Subsidence District (HGCSD) Monuments.
Monuments were originally set by Brown & Gay Engineers, Inc. Additional Monuments were set by Baseline Corporation.
All elevations were adjusted by Baseline Corporation based on the most stable monuments set by Brown & Gay Engineers, Inc.

Segment G-2 (From West of Montgomery County Line to US 59)

All bearings and coordinates and based on the Texas Coordinate System, South Central Zone, North American Datum of 1983 (NAD 83), 1993 Adjustment. All distances and coordinates shown are surface and may be converted to grid by dividing by a combined scale factor of 1.0000437.

G-2 Project Elevation Datum:

All project elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88), 1995/1996 Adjustment, and were based on Houston Galveston Coastal Subsidence District (HGCSD) Monuments.
Monuments were originally set by Brown & Gay Engineers, Inc. Additional Monuments were set by Transystems Corporation, Inc. All elevations were adjusted by Transystems, based on the most stable monuments set by Brown & Gay Engineers, Inc.

TSARP conversion

TSARP Monuments are at an average of 0.40 feet below the project elevation datum.

FEMA conversion

It was determined that FEMA Monuments were at an average of 0.66 feet above the project elevation datum.

Texas Department of Transportation
Book 2 – Technical Provisions

Grand Parkway Project

Attachment 11-1
Cross-Street Design Criteria Matrices

GRAND PARKWAY
SEGMENT F1

			INITIAL BUILD															
							EASTBOUND						WESTBOUND					
Intersecting Street	Ultimate Typical Section	Jurisdiction	Roadway Classification	Design Speed (mph)	Position (over/under)	Design Vehicle	U-Turn (each)	Clear Zone for Cross Street Thru Lanes	Sidewalk and Min. Usable Width (LF)	Curb and Gutter	Through Lanes	Turn Lanes	Through Lanes	Curb and Gutter	Sidewalk and Min. Usable Width (LF)	Clear Zone for Cross Street Thru Lanes	U-Turn (each)
Future Cypresswood Dr.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	2 (12')	2 (12')	2 (12')	Y	5'	6'	1
Future Cumberland Ridge Dr.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	3 (12')	2 (12')	3 (12')	Y	5'	6'	0
Schiel Rd.	C	Harris Co.	Local Rural	40	under SH 99	WB-50	0	10'	No Initial Build Accommodate Ultimate Typical Section							10'	0
Future Mason Rd.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	No Initial Build Accommodate Ultimate Typical Section							6'	0
Mueschke Rd.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	5'	Y	2 (12')	N	2 (12')	Y	5'	6'	0
Cypress-Rosehill Rd.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	5'	Y	2 (12')	2 (12') with 8' curbed median	2 (12')	Y	5'	6'	0
Lindsey Ln.	D	Harris Co.	Local Rural	40	under SH 99	WB-50	0	10'	N/A	N	1 (12')	N	1 (12')	N	N/A	10'	0
Cedar Lane	A	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	No Initial Build Accommodate Ultimate Typical Section							6'	0
Telge Rd.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	5'	Y	2 (12')	2 (12') with 8' curbed median	2 (12')	Y	5'	6'	0
Boudreaux Rd.	B	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	5'	Y	1 (12')	2 (12')	1 (12')	Y	5'	6'	1

Assumptions:

Urban - Minimum 5' sidewalk and curb and gutter on all urban roadways. Ped accommodations only on Urban Facilities. If columns are placed in the median, use 3' minimum offset from face of column.

Rural - No curb and gutter and sidewalk on all rural roadways.

GRAND PARKWAY
SEGMENT F2

			INITIAL BUILD														
						EASTBOUND						WESTBOUND					
Intersecting Street	Ultimate Typical Section	Jurisdiction	Roadway Classification	Design Speed (mph)	Position (over/under)	Design Vehicle	U-Turn (each)	Clear Zone for Cross Street Thru Lanes	Sidewalk and Min. Usable Width (LF)	Curb and Gutter	Through Lanes	Turn Lanes	Through Lanes	Curb and Gutter	Sidewalk and Min. Usable Width (LF)	Clear Zone for Cross Street Thru Lanes	U-Turn (each)
Future Boudreaux Rd.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	2 (12')	(2) 12' with 6' curbed median	2 (12')	Y	5'	6'	0
Huffsmith-Kohrville Rd.	C	Harris Co.	Local Rural	40	under SH 99	WB-50	0	10'	No Initial Build Accommodate Ultimate Typical Section							10'	0
Gleannloch Forest Dr.	A	Harris Co.	Local Urban	40	under SH 99	WB-50	0	6'	5'	Y	2 (12')	N	2 (12')	Y	5'	6'	1
Champions Forest Dr.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	3 (12')	49' curbed median	3 (12')	Y	5'	6'	1
FM 2920	A	TxDOT	Arterial Urban	45	over SH 99	WB-50	1	6'	5'	Y	2 (12')	2 (12') with 12' curbed median	2 (12')	Y	5'	6'	1
Boudreaux Rd.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	2 (12')	1 (12') with 2' curbed median	2 (12')	Y	5'	6'	0
Boudreaux Rd.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	2 (12')	2 (12') with 6' curbed median	2 (12')	Y	5'	6'	0
Kuykendahl Rd.	A	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	5'	Y	2 (12')	2 (12') with 6' curbed median	2 (12')	Y	5'	6'	1
Hildebrandt Rd.	D	Harris Co.	Local Rural	40	under SH 99	WB-50	0	10'	N/A	N	1 (13')	N	N	N	N/A	10'	0
Northcrest Dr.	C	Harris Co.	Local Rural	40	under SH 99	WB-50	0	10'	No Initial Build Accommodate Ultimate Typical Section							10'	0
Gosling Rd.	A	Harris Co.	Local Urban	40	under SH 99	WB-50	0	6'	5'	Y	3 (12')	6' curbed median	3 (12')	Y	5'	6'	0
Rothwood Rd.	C	Harris Co.	Local Rural	40	under SH 99	WB-50	0	10'	No Initial Build Accommodate Ultimate Typical Section							10'	0
Mossy Oaks Rd.	D	Harris Co.	Local Rural	40	under SH 99	WB-50	0	10'	No Initial Build Accommodate Ultimate Typical Section							10'	0
Springwoods Village Pkwy	N/A	Harris Co.	Local Urban	45	over SH 99	WB-50	0	N/A	Overall Bridge Width = 79' Lane Assignments to be Coordinated with County							N/A	0
Holzwarth Rd	N/A	Harris Co.	Local Urban	45	over SH 99	WB-50	0	N/A	By Others							N/A	0
Energy Drive	N/A	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	By Others SH 99 bridge bents to clear a 100' span centered about Energy Drive							6'	0

Assumptions:

Urban - Minimum 5' sidewalk and curb and gutter on all urban roadways. Ped accommodations only on Urban Facilities. If columns are placed in the median, use 3' minimum offset from face of column.

Rural - No curb and gutter and sidewalk on all rural roadways.

GRAND PARKWAY
SEGMENT G

			INITIAL BUILD																
							EASTBOUND						WESTBOUND						
Intersecting Street	Ultimate Typical Section	Jurisdiction	Roadway Classification	Design Speed (mph)	Position (over/under)	Design Vehicle	U-Turn (each)	Clear Zone for Cross Street Thru Lanes	Sidewalk and Min. Usable Width (LF)	Curb and Gutter	SB Turn Lanes	Turn Lanes	NB Turn Lanes	Curb and Gutter	Sidewalk and Min. Usable Width (LF)	Clear Zone for Cross Street Thru Lanes	U-Turn (each)
Northgate Crossing Blvd.	B	Harris Co.	Local Urban	45	under SH 99	WB-50	0	6'	No Initial Build Accommodate Ultimate Typical Section							6'	0
Nelson St.	D	Harris Co.	Local Rural	45	under SH 99	WB-50	0	10'	No Initial Build Accommodate Ultimate Typical Section							10'	0
East Hardy Rd.	D	Harris Co.	Local Rural	45	under SH 99	WB-50	0	10'	No Initial Build Accommodate Ultimate Typical Section							10'	0
Riley Fuzzel Rd	D	Montgomery Co.	Local Rural	40	under SH 99	WB-50	1	10'	N/A	N	2 (12')	N	2 (12')	N	N/A	10'	0
Future Rayford Rd	A	Montgomery Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	2 (12')	2 (12') with 4' curbed median	2 (12')	Y	5'	6'	1
Birnham Woods Dr.	A	Montgomery Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	2 (12')	2 (12') with 4' curbed median	2 (12')	Y	5'	6'	1
Future Townsen Blvd.	A	Montgomery Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	2 (12')	2 (12') with 4' curbed median	2 (12')	Y	5'	6'	0
Future Riverwalk Dr.	A	Montgomery Co.	Local Urban	45	under SH 99	WB-50	0	6'	5'	Y	2 (12')	2 (12') with 4' curbed median	2 (12')	Y	5'	6'	0
FM 1314	E	TxDOT	Arterial Rural	45	under SH 99	WB-50	0	10'	N/A	N	2 (12')	2 (12') with 4' curbed median	2 (12')	N	N/A	10'	0
Future Rd.	C	Montgomery Co.	Local Rural	45	under SH 99	WB-50	0	10'	No Initial Build Accommodate Ultimate Typical Section							10'	0
Valley Ranch Blvd.	A	Montgomery Co.	Local Urban	45	under SH 99	WB-50	0	6'	5'	Y	2 (12')	2 (12') with 4' curbed median	2 (12')	Y	5'	6'	1
Future Rd.	A	Montgomery Co.	Local Urban	45	under SH 99	WB-50	1	6'	5'	Y	2 (12')	2 (12') with 4' curbed median	2 (12')	Y	5'	6'	1

Assumptions:

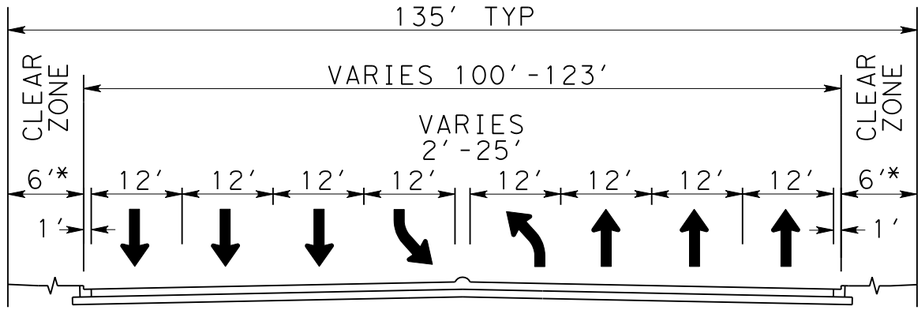
Urban - Minimum 5' sidewalk and curb and gutter on all urban roadways. Ped accommodations only on Urban Facilities. If columns are placed in the median, use 3' minimum offset from face of column.

Rural - No curb and gutter and sidewalk on all rural roadways.

Texas Department of Transportation
Book 2 – Technical Provisions

Grand Parkway Project

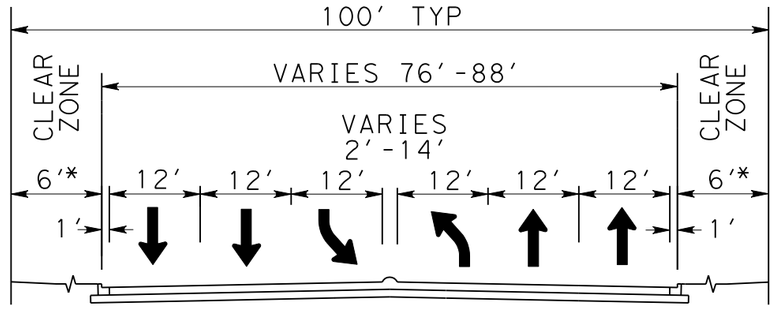
Attachment 11-2
Ultimate Cross-Street Typical Sections



SECTION A

*INCLUDES 5' SIDEWALK

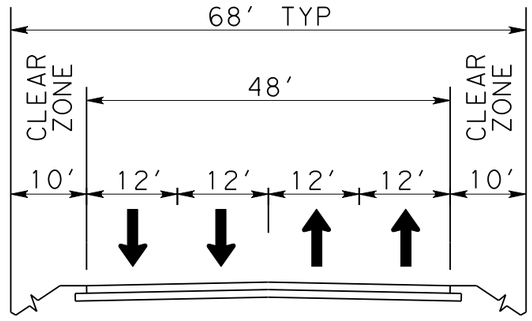
NOTE: IF A BARRIER CURB IS USED ON CENTER MEDIAN, A 1' CURB OFFSET WILL BE REQUIRED.



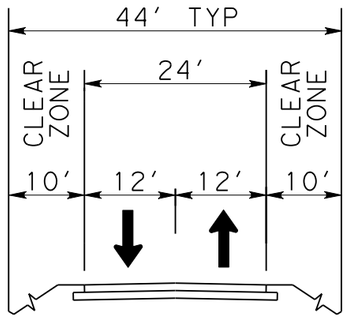
SECTION B

*INCLUDES 5' SIDEWALK

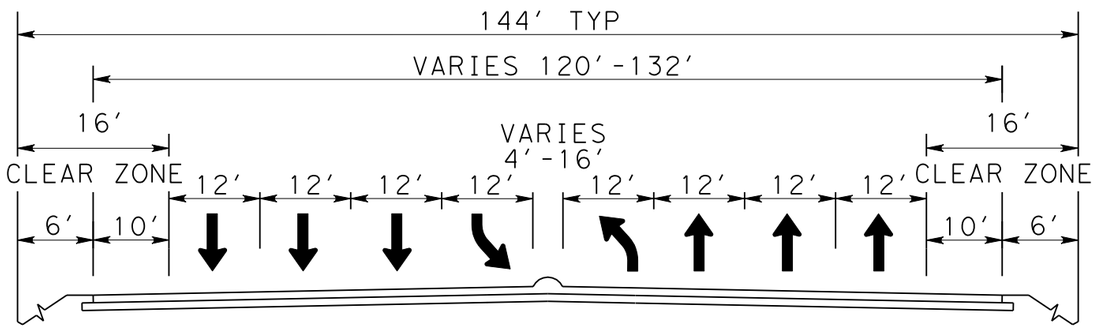
NOTE: IF A BARRIER CURB IS USED ON CENTER MEDIAN, A 1' CURB OFFSET WILL BE REQUIRED.



SECTION C



SECTION D



SECTION E

GENERAL NOTE

THE PURPOSE OFTHESE TYPICAL SECTIONS IS TO SHOW CROSS STREET INFORMATION ONLY.

SCALE = N.T.S

PRELIMINARY SUBJECT TO CHANGE

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Texas Department of Transportation

ATKINS
1250 WOOD BRANCH PARK DRIVE
SUITE 300
HOUSTON, TEXAS 77079
281-493-5100
TBPE REG. #F-474

GRAND PARKWAY (SH 99)

PROPOSED ULTIMATE CROSS STREET TYPICAL SECTIONS

Texas Department of Transportation
Book 2 – Technical Provisions

Grand Parkway Project

Attachment 12-1
Vertical Datum Adjustment Information

Monument	Northing	Easting	TSARP_Elev_pub_2001	Elev (GPS)	Level_Adj	Elev_Leveled_1995	2001 to 1995 Adjustment	Surveyor
RM 120055	13949300.00	3047300.00	149.43	150.32	-0.08	150.24	0.81	WEISSER
RM 120050	13951880.48	3051954.87	149.56	150.42	-0.11	150.31	0.75	WEISSER
RM 120135	13962374.57	3068347.51	146.73	147.48	-0.17	147.31	0.58	WEISSER
RM 100315	13961359.36	3082083.98	134.36	134.86	-0.09	134.77	0.41	WEISSER
RM 111000	13931719.76	2992127	186.90			187.10	0.20	RODS
RM 111005	13935352.61	2989595.01	188.66			188.95	0.29	RODS
RM 111055	13941229.08	2990234.11	196.71			197.06	0.35	RODS
RM 111070	13944928.6	2995861.71	212.30			212.60	0.30	RODS
RM 120080	13944594.14	3025081.01	161.86			162.18	0.32	RODS
RM 120220	13947486.25	3013202.36	178.42			178.62	0.20	RODS
RM 100060	13963342.47	3101720.41	95.86	96.44		96.33	0.47	WEISSER-Estimated
RM 100060	13965157.71	3102123.634	95.86			96.23	0.37	TranSystems
RM 100053	13962381.03	3103121.963	103.30			104.02	0.72	TranSystems
RM 100055	13963762.04	3105388.348	129.83			129.86	0.03	TranSystems
RM 070245	13957348.28	3164901.174	69.66			70.05	0.39	TranSystems
RM 070265	13950765.46	3162407.22	74.46			74.97	0.51	TranSystems
RM 070390	13967658.41	3172957.401	73.30			73.61	0.31	TranSystems
RM 070555	14001590.49	3172075.696	112.95			113.43	0.48	TranSystems

Harris County 2001 to 1995/1996 Adjustment						
Monument	TSARP Elevation	Leveled Elevation	Surveyor	Grand Parkway Station	2001 to 1995 Adjustment	Adjustment Used for Grand Parkway
RM 111000	186.9	187.1	RODS	2490+00	0.2	0.2
RM 111005	188.66	188.95	RODS	2520+00	0.29	0.2
RM 111055	196.71	197.06	RODS	2570+00	0.35	0.2
RM 111070	212.3	212.6	RODS	2623+00	0.3	0.2
RM 120220	178.42	178.62	RODS	2788+00	0.2	0.2
RM 120080	161.86	162.18	RODS	2912+00	0.32	0.32
RM 120055	149.43	150.24	WEISSER	3150+00	0.81	0.81
RM 120050	149.56	150.31	WEISSER	3230+00	0.75	0.75
RM 120135	146.73	147.31	WEISSER	3425+00	0.58	0.58
RM 100315	134.36	134.77	WEISSER	3558+00	0.41	0.41
RM 100060	95.86	96.23	TranSystems	3747+00	0.37	0.4
RM 100053	103.3	104.02	TranSystems	3755+00	0.72	0.4
RM 100055	129.83	129.86	TranSystems	3776+00	0.03	0.4
RM 070265	74.46	74.97	TranSystems	4235+00	0.51	0.4
RM 070245	69.66	70.05	TranSystems	4445+00	0.39	0.4
RM 070390	73.3	73.61	TranSystems	4465+00	0.31	0.4
RM 070555	112.95	113.43	TranSystems	4545+00	0.48	0.4

Montgomery County FIS to 1995/1996 Adjustment						
Monument	Effective FIS Elevation	Leveled Elevation	Surveyor	Grand Parkway Station	FIS to 1995 Adjustment	Adjustment Used for Grand Parkway
RM 850	117.59	117.05	TranSystems	4225+00	-0.54	-0.54
RM 848	118.48	117.96	TranSystems	3965+00	-0.52	-0.52
RM 676	130.61	129.86	TranSystems	3650+00	-0.75	-0.75
RM 677	138.37	137.56	TranSystems	3680+00	-0.81	-0.81

Segment	Station	NUSA Adjustment (2001 - 2008)	2001 to 1995 Adjustment	2008 LiDAR to to 1995 Adj (1995 - 2008)
E	2380+00	0.36	0.2	0.56
E	2385+00	0.36	0.2	0.56
E	2390+00	0.36	0.2	0.56
E	2395+00	0.36	0.2	0.56
E	2400+00	0.36	0.2	0.56
E	2405+00	0.36	0.2	0.56
E	2410+00	0.36	0.2	0.56
E	2415+00	0.36	0.2	0.56
E	2420+00	0.35	0.2	0.55
E	2425+00	0.35	0.2	0.55
E	2430+00	0.35	0.2	0.55
E	2435+00	0.36	0.2	0.56
E	2440+00	0.36	0.2	0.56
E	2445+00	0.35	0.2	0.55
E	2450+00	0.35	0.2	0.55
E	2455+00	0.35	0.2	0.55
E	2460+00	0.35	0.2	0.55
F1	2460+00	0.35	0.2	0.55
F1	2465+00	0.35	0.2	0.55
F1	2470+00	0.35	0.2	0.55
F1	2475+00	0.35	0.2	0.55
F1	2480+00	0.34	0.2	0.54
F1	2485+00	0.34	0.2	0.54
F1	2490+00	0.35	0.2	0.55
F1	2495+00	0.35	0.2	0.55
F1	2500+00	0.35	0.2	0.55
F1	2505+00	0.35	0.2	0.55
F1	2510+00	0.35	0.2	0.55
F1	2515+00	0.35	0.2	0.55
F1	2520+00	0.35	0.2	0.55
F1	2525+00	0.34	0.2	0.54
F1	2530+00	0.34	0.2	0.54
F1	2535+00	0.34	0.2	0.54
F1	2540+00	0.34	0.2	0.54
F1	2545+00	0.34	0.2	0.54
F1	2550+00	0.34	0.2	0.54
F1	2555+00	0.34	0.2	0.54
F1	2560+00	0.34	0.2	0.54
F1	2565+00	0.34	0.2	0.54
F1	2570+00	0.34	0.2	0.54
F1	2575+00	0.34	0.2	0.54
F1	2580+00	0.34	0.2	0.54

Segment	Station	NUSA Adjustment (2001 - 2008)	2001 to 1995 Adjustment	2008 LiDAR to to 1995 Adj (1995 - 2008)
F1	2585+00	0.34	0.2	0.54
F1	2590+00	0.34	0.2	0.54
F1	2595+00	0.34	0.2	0.54
F1	2600+00	0.34	0.2	0.54
F1	2605+00	0.34	0.2	0.54
F1	2610+00	0.34	0.2	0.54
F1	2615+00	0.34	0.2	0.54
F1	2620+00	0.34	0.2	0.54
F1	2625+00	0.34	0.2	0.54
F1	2630+00	0.34	0.2	0.54
F1	2635+00	0.34	0.2	0.54
F1	2640+00	0.34	0.2	0.54
F1	2645+00	0.34	0.2	0.54
F1	2650+00	0.34	0.2	0.54
F1	2655+00	0.34	0.2	0.54
F1	2660+00	0.34	0.2	0.54
F1	2665+00	0.34	0.2	0.54
F1	2670+00	0.35	0.2	0.55
F1	2675+00	0.35	0.2	0.55
F1	2680+00	0.35	0.2	0.55
F1	2685+00	0.35	0.2	0.55
F1	2690+00	0.35	0.2	0.55
F1	2695+00	0.35	0.2	0.55
F1	2700+00	0.35	0.2	0.55
F1	2705+00	0.35	0.2	0.55
F1	2710+00	0.35	0.2	0.55
F1	2715+00	0.35	0.2	0.55
F1	2720+00	0.35	0.2	0.55
F1	2725+00	0.35	0.2	0.55
F1	2730+00	0.35	0.2	0.55
F1	2735+00	0.35	0.2	0.55
F1	2740+00	0.35	0.2	0.55
F1	2745+00	0.35	0.2	0.55
F1	2750+00	0.35	0.2	0.55
F1	2755+00	0.35	0.2	0.55
F1	2760+00	0.35	0.2	0.55
F1	2765+00	0.35	0.2	0.55
F1	2770+00	0.35	0.2	0.55
F1	2775+00	0.35	0.2	0.55
F1	2780+00	0.35	0.2	0.55
F1	2785+00	0.35	0.2	0.55
F1	2790+00	0.35	0.2	0.55

Segment	Station	NUSA Adjustment (2001 - 2008)	2001 to 1995 Adjustment	2008 LiDAR to to 1995 Adj (1995 - 2008)
F1	2795+00	0.35	0.21	0.56
F1	2800+00	0.35	0.21	0.56
F1	2805+00	0.35	0.22	0.57
F1	2810+00	0.35	0.22	0.57
F1	2815+00	0.36	0.23	0.59
F1	2820+00	0.36	0.23	0.59
F1	2825+00	0.36	0.24	0.6
F1	2830+00	0.36	0.24	0.6
F1	2835+00	0.35	0.25	0.6
F1	2840+00	0.35	0.25	0.6
F1	2845+00	0.35	0.26	0.61
F1	2850+00	0.35	0.26	0.61
F1	2855+00	0.35	0.26	0.61
F1	2860+00	0.35	0.27	0.62
F1	2865+00	0.35	0.27	0.62
F1	2870+00	0.35	0.28	0.63
F1	2875+00	0.35	0.28	0.63
F1	2880+00	0.35	0.29	0.64
F1	2885+00	0.35	0.29	0.64
F1	2890+00	0.35	0.3	0.65
F1	2895+00	0.35	0.3	0.65
F1	2900+00	0.35	0.31	0.66
F1	2905+00	0.35	0.31	0.66
F1	2910+00	0.35	0.32	0.67
F1	2915+00	0.35	0.33	0.68
F1	2920+00	0.35	0.34	0.69
F1	2925+00	0.35	0.35	0.7
F1	2930+00	0.35	0.36	0.71
F1	2935+00	0.35	0.37	0.72
F1	2940+00	0.35	0.38	0.73
F1	2945+00	0.35	0.39	0.74
F1	2950+00	0.35	0.4	0.75
F1	2955+00	0.35	0.41	0.76
F1	2960+00	0.35	0.42	0.77
F1	2965+00	0.35	0.43	0.78
F1	2970+00	0.35	0.44	0.79
F1	2975+00	0.35	0.45	0.8
F1	2980+00	0.35	0.46	0.81
F1	2985+00	0.35	0.47	0.82
F1	2990+00	0.35	0.48	0.83
F1	2995+00	0.35	0.49	0.84
F1	3000+00	0.35	0.5	0.85

Segment	Station	NUSA Adjustment (2001 - 2008)	2001 to 1995 Adjustment	2008 LiDAR to to 1995 Adj (1995 - 2008)
F1	3005+00	0.35	0.51	0.86
F1	3010+00	0.35	0.52	0.87
F1	3015+00	0.35	0.53	0.88
F1	3020+00	0.35	0.54	0.89
F1	3025+00	0.35	0.55	0.9
F1	3030+00	0.35	0.56	0.91
F1	3035+00	0.35	0.57	0.92
F1	3040+00	0.35	0.58	0.93
F1	3045+00	0.35	0.59	0.94
F1	3050+00	0.35	0.6	0.95
F1	3055+00	0.35	0.61	0.96
F1	3060+00	0.35	0.62	0.97
F1	3065+00	0.35	0.64	0.99
F1	3070+00	0.35	0.65	1
F1	3075+00	0.35	0.66	1.01
F1	3080+00	0.35	0.67	1.02
F1	3085+00	0.35	0.68	1.03
F1	3090+00	0.35	0.69	1.04
F2	3100+00	0.35	0.71	1.06
F2	3105+00	0.34	0.72	1.06
F2	3110+00	0.34	0.73	1.07
F2	3115+00	0.34	0.74	1.08
F2	3120+00	0.34	0.75	1.09
F2	3125+00	0.34	0.76	1.1
F2	3130+00	0.34	0.77	1.11
F2	3135+00	0.34	0.78	1.12
F2	3140+00	0.34	0.79	1.13
F2	3145+00	0.34	0.8	1.14
F2	3150+00	0.34	0.81	1.15
F2	3155+00	0.34	0.81	1.15
F2	3160+00	0.34	0.8	1.14
F2	3165+00	0.34	0.8	1.14
F2	3170+00	0.34	0.8	1.14
F2	3175+00	0.34	0.79	1.13
F2	3180+00	0.34	0.79	1.13
F2	3185+00	0.34	0.78	1.12
F2	3190+00	0.34	0.78	1.12
F2	3195+00	0.34	0.78	1.12
F2	3200+00	0.34	0.77	1.11
F2	3205+00	0.34	0.77	1.11
F2	3210+00	0.34	0.77	1.11
F2	3215+00	0.34	0.76	1.1

Segment	Station	NUSA Adjustment (2001 - 2008)	2001 to 1995 Adjustment	2008 LiDAR to to 1995 Adj (1995 - 2008)
F2	3220+00	0.34	0.76	1.1
F2	3225+00	0.34	0.75	1.09
F2	3230+00	0.34	0.75	1.09
F2	3235+00	0.34	0.75	1.09
F2	3240+00	0.34	0.74	1.08
F2	3245+00	0.34	0.74	1.08
F2	3250+00	0.33	0.73	1.06
F2	3255+00	0.33	0.73	1.06
F2	3260+00	0.33	0.72	1.05
F2	3265+00	0.33	0.72	1.05
F2	3270+00	0.33	0.72	1.05
F2	3275+00	0.33	0.71	1.04
F2	3280+00	0.33	0.71	1.04
F2	3285+00	0.33	0.7	1.03
F2	3290+00	0.33	0.7	1.03
F2	3295+00	0.33	0.69	1.02
F2	3300+00	0.33	0.69	1.02
F2	3305+00	0.33	0.68	1.01
F2	3310+00	0.33	0.68	1.01
F2	3315+00	0.33	0.68	1.01
F2	3320+00	0.33	0.67	1
F2	3325+00	0.33	0.67	1
F2	3330+00	0.33	0.66	0.99
F2	3335+00	0.33	0.66	0.99
F2	3340+00	0.33	0.65	0.98
F2	3345+00	0.33	0.65	0.98
F2	3350+00	0.32	0.65	0.97
F2	3355+00	0.32	0.64	0.96
F2	3360+00	0.32	0.64	0.96
F2	3365+00	0.32	0.63	0.95
F2	3370+00	0.32	0.63	0.95
F2	3375+00	0.32	0.62	0.94
F2	3380+00	0.32	0.62	0.94
F2	3385+00	0.32	0.61	0.93
F2	3390+00	0.32	0.61	0.93
F2	3400+00	0.32	0.6	0.92
F2	3405+00	0.32	0.6	0.92
F2	3410+00	0.32	0.59	0.91
F2	3415+00	0.32	0.59	0.91
F2	3420+00	0.32	0.58	0.9
F2	3425+00	0.32	0.58	0.9
F2	3430+00	0.31	0.57	0.88

Segment	Station	NUSA Adjustment (2001 - 2008)	2001 to 1995 Adjustment	2008 LiDAR to to 1995 Adj (1995 - 2008)
F2	3435+00	0.31	0.57	0.88
F2	3440+00	0.31	0.56	0.87
F2	3445+00	0.31	0.55	0.86
F2	3450+00	0.31	0.55	0.86
F2	3455+00	0.31	0.54	0.85
F2	3460+00	0.31	0.54	0.85
F2	3465+00	0.31	0.53	0.84
F2	3470+00	0.31	0.52	0.83
F2	3475+00	0.31	0.52	0.83
F2	3480+00	0.31	0.51	0.82
F2	3485+00	0.31	0.5	0.81
F2	3490+00	0.31	0.5	0.81
F2	3495+00	0.31	0.49	0.8
F2	3500+00	0.31	0.48	0.79
F2	3505+00	0.31	0.48	0.79
F2	3510+00	0.31	0.47	0.78
F2	3515+00	0.31	0.46	0.77
F2	3520+00	0.31	0.46	0.77
F2	3525+00	0.31	0.45	0.76
F2	3530+00	0.31	0.45	0.76
F2	3535+00	0.31	0.44	0.75
F2	3540+00	0.31	0.43	0.74
F2	3545+00	0.31	0.43	0.74
F2	3550+00	0.3	0.42	0.72
F2	3555+00	0.3	0.41	0.71
F2	3560+00	0.3	0.41	0.71
F2	3565+00	0.3	0.41	0.71
F2	3570+00	0.3	0.41	0.71
F2	3575+00	0.3	0.41	0.71
F2	3580+00	0.3	0.41	0.71
F2	3585+00	0.3	0.41	0.71
F2	3590+00	0.3	0.41	0.71
F2	3595+00	0.3	0.41	0.71
F2	3600+00	0.3	0.41	0.71
F2	3605+00	0.3	0.41	0.71
F2	3610+00	0.29	0.41	0.7
F2	3615+00	0.29	0.41	0.7
F2	3620+00	0.29	0.41	0.7
F2	3625+00	*	0.41	N/A
F2	3630+00	*	0.41	N/A
F2	3635+00	*	0.41	N/A
F2	3640+00	*	0.41	N/A

Segment	Station	NUSA Adjustment (2001 - 2008)	2001 to 1995 Adjustment	2008 LiDAR to to 1995 Adj (1995 - 2008)
F2	3645+00	*	0.41	N/A
F2	3650+00	*	0.41	N/A
F2	3655+00	*	0.4	N/A
F2	3660+00	*	0.4	N/A
F2	3665+00	*	0.4	N/A
F2	3670+00	*	0.4	N/A
F2	3675+00	*	0.4	N/A
F2	3680+00	*	0.4	N/A
F2	3685+00	*	0.4	N/A
F2	3690+00	*	0.4	N/A
F2	3695+00	*	0.4	N/A
F2	3700+00	*	0.4	N/A
F2	3705+00	*	0.4	N/A
F2	3710+00	*	0.4	N/A
F2	3715+00	*	0.4	N/A
F2	3720+00	*	0.4	N/A
F2	3725+00	*	0.4	N/A
G	3725+75	*	0.4	N/A
G	3730+00	*	0.4	N/A
G	3730+00	*	0.4	N/A
G	3735+00	*	0.4	N/A
G	3740+00	*	0.4	N/A
G	3745+00	*	0.4	N/A
G	3750+00	*	0.4	N/A
G	3755+00	*	0.4	N/A
G	3760+00	*	0.4	N/A
G	3765+00	*	0.4	N/A
G	3830+00	0.26	0.4	0.66
G	3930+00	0.25	0.4	0.65
G	4130+00	0.2	0.4	0.6
G	4330+00	0.15	0.4	0.55
G	4480+00	0.14	0.4	0.54

Note: Montgomery county 2008 to 2001 adjustment estimated visually by extending contour lines from Harris County comparison.

Station	BGE 2001 to 1995 Adjustment	Interpolated New Adjustment	Difference
2729+00	0.2	0.2	0
2743+00	0.2	0.2	0
2810+00	0.23	0.22	-0.01
2848+00	0.29	0.26	-0.03
2879+00	0.36	0.29	-0.07
2936+00	0.43	0.37	-0.06
2959+00	0.44	0.42	-0.02
2975+00	0.4	0.45	0.05
3036+00	0.36	0.58	0.22
3122+00	0.51	0.75	0.24
3174+00	0.48	0.79	0.31
3230+00	0.45	0.75	0.3
3298+00	0.4	0.69	0.29
3398+00	0.35	0.6	0.25
3454+00	0.39	0.54	0.15
3474+00	0.4	0.52	0.12

Segment G:	BGE 2001 Adj to 1995 Adj	Used New Adjustment
Woodson Gully	0.4	0.4
San Jacinto River	0.4	0.4
White Oak Creek	0.4	0.4

		2001 to 1995		NUSA Adj	2008 to 1995
3940+00		0.4		0.25	0.65
4055+00		0.4		0.22	0.62
4377+00		0.4		0.15	0.55

HydroID	Station	Station_Txt	River	Adj_2008_to_1995
100	243000	2430+00	SegF1	0.55
101	248000	2480+00	SegF1	0.54
102	253000	2530+00	SegF1	0.54
103	258000	2580+00	SegF1	0.54
104	263000	2630+00	SegF1	0.54
105	268000	2680+00	SegF1	0.55
106	273000	2730+00	SegF1	0.55
107	278000	2780+00	SegF1	0.55
108	283000	2830+00	SegF1	0.60
109	288000	2880+00	SegF1	0.64
110	293000	2930+00	SegF1	0.71
111	298000	2980+00	SegF1	0.81
112	303000	3030+00	SegF1	0.91
113	308000	3080+00	SegF1	1.02
114	315000	3150+00	SegF2	1.15
115	320000	3200+00	SegF2	1.11
116	325000	3250+00	SegF2	1.06
117	330000	3300+00	SegF2	1.02
118	335000	3350+00	SegF2	0.97
119	340000	3400+00	SegF2	0.92
120	345000	3450+00	SegF2	0.86
121	350000	3500+00	SegF2	0.79
122	355000	3550+00	SegF2	0.72
123	360000	3600+00	SegF2	0.71
124	365000	3650+00	SegF2	N/A
125	370000	3700+00	SegF2	N/A
85	378000	3780+00	SegG	0.00
86	383000	3830+00	SegG	0.66
87	388000	3880+00	SegG	0.66
88	393000	3930+00	SegG	0.65
89	398000	3980+00	SegG	0.64
90	403000	4030+00	SegG	0.63
91	408000	4080+00	SegG	0.61
92	413000	4130+00	SegG	0.60
93	418000	4180+00	SegG	0.59
94	423000	4230+00	SegG	0.58
95	428000	4280+00	SegG	0.56
96	433000	4330+00	SegG	0.55
97	438000	4380+00	SegG	0.55
98	443000	4430+00	SegG	0.54
99	448000	4480+00	SegG	0.54
A				

Add this value to 2008 LiDAR to get to 1995 Adj

N/A Use New LiDAR + Adj
N/A Use New LiDAR + Adj
N/A Use New LiDAR + Adj

Station	2008 to 2001	2001 to 1995	2008 to 1995
383000	0.26	0.4	0.66
393000	0.25	0.4	0.65
413000	0.2	0.4	0.6
433000	0.15	0.4	0.55
447999.97	0.14	0.4	0.54

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Attachment 13-1
TxDOT Standard Bridge Railing

Table 1 lists currently approved TxDOT Bridge Railing Standards:

Table 1: TxDOT Standard Bridge Railing

TRAFFIC RAILS		
Rev Date	**Std Name**	**Description**
05-11	T1F	Stl Post w/Alum Tube & Opt Curb Drains (33” tall)
05-11	T1W	Stl Post w/Stl Tube & Opt Curb Drains (32” tall)
04-09	T101	Steel Post with W-Beam (27” tall)
05-11	T221	Concrete Parapet (32” tall)
05-11	T223	Conc Bm & Post w/6’ Openings (32” tall)
05-11	T401	Concrete Parapet w/Stl Post and Rail (33” tall)
05-11	T402	Concrete Parapet w/Stl Post and Rail (42” tall)
05-11	T411	Conc Traf Rail w/Windows(Tx Classic)(32” tall)
05-11	T551	Concrete Safety F-Shape (32” tall)
05-11	T552	T551 w/Multiple Drain Slots (32” tall)
04-09	T6	Steel Post w/Doubled W-Beams (27.125” tall)
05-11	T66	Conc Bm, Post & Curb w/5.25’ Max Open (32” tall)
05-11	SSCB	Single Slope Concrete Barrier, Type 1 (42” tall)
05-11	SSTR	Conc Single Slope Traffic Rail (36” tall)
COMBINATION RAILS		
Rev Date	**Std Name**	**Description**
05-11	C1W	Steel Post w/Stl Tube & Opt Curb Drain (42” tall)
05-11	C221	T221 w/Steel Pipe Rail (42” tall)
05-11	C223	T223 w/Steel Pipe Rail (42” tall)
05-11	C402	T402 w/Steel Pipe Rail (42” tall)
05-11	C411	Comb Rail w/windows (Tx Classic) (42” tall)
05-11	C412	Conc Comb Rail w/Windows (TL-4) (42” tall)
MISCELLANEOUS RAILS		
Rev Date	**Std Name**	**Description**
05-11	C-RAIL-R	Retrofit Guide for Concrete Rails
04-09	T101RC	Retrofit Guide for T101 on Curbs
04-09	T1-101R	Retrofit (Convert T1 to T101)
04-09	T2/T201TR	Guide for T2/T201(Retrofit Thrie-Beam Transition)
04-09	T202TR	Guide for T202 (Retrofit Thrie-Beam Transition)
05-11	TRF	Traffic Rail Foundation
04-09	PR1	Pedestrian Rail,Steel Pipe (42” tall)
05-11	PR2	Pedestrian Rail,Steel Pipe on Parapet (42” tall)
04-09	PR3	Pedestrian Rail,Steel and Conc (43.75” tall)
04-09	PR3-HD	Handrail Details for PR3 Pedestrian Rail
04-09	CLF-RO	8 Ft Chain Link Fence for Railroad Overpass
05-11	C-RAIL-R	Retrofit Guide for Concrete Rails

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Attachment 21-1
Toll Systems Responsibility Matrix

ATTACHMENT 21- 1

Texas Department of Transportation **Toll Systems 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 plaza locations provided in existing schematics.
Metered power service to roadside equipment cabinet	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	C	D/B to provide foundations and conduits between foundations. SI will ensure foundations and conduits are adequate.
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	A	A	A	B	D	C	
Data/Communication service to roadside equipment cabinet	A	A	A	B	D	C	SI to provide power and communication/data requirements. D/B to install up to the roadside equipment cabinet.
Data/Communication wire/fiber from roadside equipment cabinet to toll systems equipment	C	C	C	A	A	A	SI to install from roadside equipment cabinet to toll systems equipment.

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**	
Pavement, inclusive of special nonferrous zones and conduit stub outs for in pavement sensors	A	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. D/B to incorporate into structural design
Toll 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.
Roadside equipment cabinet slabs	A	A	A	B	D	C	SI to provide requirements for size of slab needed.
Roadside equipment cabinets (including HVAC systems)	B	D	C	A	A	A	SI to install complete
Lane Controller Hardware	D	D	C	A	A	A	D/B will coordinate access to roadway for installations.
Communication Equipment	D	D	C	A	A	A	D/B will coordinate access to roadway for installations.
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	
Roadside Equipment Cabinets	D	D	C	A	A	A	D/B will coordinate access to roadway for installations.

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	C	A	A	A	D/B will coordinate access to roadway for installations.
Toll Plaza Host Computer	D	D	C	A	A	A	
Back-up Host Computer	D	D	D	A	A	A	
Support equipment at TxDOT or HCTRA Customer Service Center	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	C	A	A	A	D/B will coordinate access to roadway for testing.
Project Acceptance Test	D	D	C	A	A	A	D/B will coordinate access to roadway for testing.
Training	D	D	D	A	A	A	
Documentation	D	D	D	A	A	A	
FCC Licenses/Regulations as applies to toll systems	D	D	D	A	A	A	
Tolling location phone service	A	A	A	B	C	C	