TEXAS DEPARTMENT OF TRANSPORTATION

TECHNICAL PROVISIONS

FOR

SH 99 GRAND PARKWAY SEGMENTS H, I-1 AND I-2

ATTACHMENT 2-1
PROJECT MANAGEMENT PLAN CONTENTS

RFP ADDENDUM #6

AUGUST 12, 2016

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

Legend
A = Submitted by DB Contractor within 30 days after issuance of NTP1 and approved by TxDOT prior to commencement of Design Work
A1 = Submitted by DB Contractor within 30 days after issuance of NTP1 and concurrence by TxDOT prior to commencement of Design Work
B = Submitted by DB Contractor within 90 days after issuance of NTP1 and approved by TxDOT prior to commencement of Construction Work

Part	Ref	Section	Contents	Required by
1. Project Administration				
	1.1	Organization	Organization diagram	A
	1.2	Personnel	Names and contract details, titles, and job roles	A
	1.3	Subcontractors	Procedures to establish how the DB Contractor will manage Subcontractors	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 consultants.	A
			Auditing and management review of DB Contractor's own activities under the Project Management Plan (PMP)	A
			Auditing and management review of Subcontractor'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 DB Contractor will use.	A
			Document management procedures in compliance with the Technical Provisions Section 2.	A
			Procedures for establishing required Plans not specifically stated in this Attachment 2-1 inclusive of the PMP, including but not limited to: Aesthetics and Landscaping Plan, Acceptance Test Plan, Maintenance Management Plan, and Demolition and Abandonment Plan, etc.	A
2. Quality Management Plan				
2A. Design Quality Management Plan				
	2A.1	Organization	DB Contractor's main contractual arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents	A

Part	Ref	Section	Contents	Required by
	2A.2	Personnel	DB Contractor's plan to provide experienced personnel for Design Work	A
			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 Design Work	A
			Names and contact details, titles, job roles and specific experience required for the principal personnel for Subcontractors and any third party with which DB Contractor will coordinate activities.	A
	2A.3	Subcontractors	Overall control procedures for Subcontractors, including consultants and Subconsultants	A
			Responsibility of Subcontractors and their affiliates	A
			Steps taken to ensure Subcontractors and Suppliers meet the obligations imposed by their respective Contracts	A
	2A.4	Interfaces	Interfacing between the DB Contractor, Subcontractors and TxDOT and its consultants or its System Integrator (if applicable) during the period of Design Work	A
			Coordination with environmental agencies, Utility Owners, general public, stakeholders, and affected property owners	A
	2A.5	Environmental	Integration of the interface between environmental requirements (including landscaping) and the design of the Project to verify compliance with environmental commitments	B
	2A.6	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.7	Quality Control / Quality Assurance	Design Quality Management Plan, including control procedures including a resource table for monitoring and auditing all design services, design review and certification, and verification of plans	A
			Procedures to establish DB Contractor'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.8	Audit	Name of DB Contractor'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.9	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems DB Contractor will use	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
2B. Construction Quality Management Plan				
	2B.1	Organization	DB Contractor's main contractual arrangements	A

Part	Ref	Section	Contents	Required by
			Organizational structure covering the activities to be performed in accordance with the Contract Documents	A
	2B.2	Personnel	DB Contractor's plan to provide experienced personnel for Construction Work	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 Work	A
			Names and contact details, titles, job roles of principal personnel for Subcontractors and any third party with which DB Contractor will coordinate its activities	B
	2B.3	Subcontractors	Overall control procedures for Subcontractors, including consultants and subconsultants	B
			Responsibility of Subcontractors and their affiliates	A
			Steps taken to ensure Subcontractors and Suppliers meet the obligations imposed by their respective Contracts	B
	2B.4	Interfaces	Interfacing between the DB Contractor, Subcontractors, including any testing contractor, and TxDOT and its consultants or its System Integrator (if applicable) during Construction Work	A
			Coordination with environmental agencies, Utility Owners, general public, stakeholders, and affected property owners	A
	2B.5	Environmental	Integration of component parts of the Comprehensive Environmental Protection Program (CEPP) into construction quality management	B
			Procedures for the integration of the Hazardous Materials Management Plan (HMMP)	B
	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
			Procedure for Punch List development and closeout procedures	B
			Traffic Management Plan	B
	2B.7	Quality Control/Quality Assurance	Control, identification and traceability of materials, including any material or samples temporarily or otherwise removed from site for testing or other reasons.	B
			Procedures for tests and inspections for the purpose of the DB Contractor certifying that prior to burying, each part of the Works is complete and conforms to the Contract Documents	B
			Observation and reporting of all tests in compliance with the Technical Provisions Section 2	B
			Quality control and quality assurance procedures including a resource table for monitoring and auditing during construction any work and testing undertaken by Subcontractors and Suppliers both on and off Site	B
			Procedures to establish DB Contractor's hold points in construction	B
			Procedures to ensure accuracy, completion, and quality in submittals to TxDOT, Governmental Entities and other third parties	B

Part	Ref	Section	Contents	Required by
			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	B
			Examinations and audit of Construction Work, review of examination and audit, issue of certificates	B
			Name of DB Contractor'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 DB Contractor will use	B
			Document management procedures in compliance with the Technical Provisions Section 2	A
2C. Maintenance Quality Management Plan				
	2C.1	Organization	DB Contractor's main contractual arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents	A
	2C.2	Personnel	DB Contractor's plan to provide experienced personnel for the maintenance of the Project	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 maintenance activities	A
			Names and contact details, titles, job roles of principal personnel for Subcontractors and any third party with which DB Contractor will coordinate its activities	B
	2C.3	Subcontractors	Overall control procedures for Subcontractors, including consultants and subconsultants	B
			Responsibility of Subcontractors and their affiliates	A
			Steps taken to ensure Subcontractors and Suppliers meet the obligations imposed by their respective Contracts	B
	2C.4	Interfaces	Interfacing between the DB Contractor, Subcontractors and TxDOT and its consultants or its System Integrator (if applicable) during the Term	A
			Coordination with environmental agencies, Utility Owners, general public, stakeholders, and affected property owners	B
			Procedures to minimize the impact of the Project's operations on neighboring facilities	A
			Procedures to ensure enforcement (permitting) of overloaded/oversized vehicles	A
	2C.5	Environmental	Coordination of the interface between environmental requirements and the operation and maintenance of the Project	A

Part	Ref	Section	Contents	Required by
			Procedures to implement Storm Water Pollution Prevention Plans (SW3P)	A
			Procedures for the Spill Prevention and Countermeasures Plan (SPCP) and the Hazardous Materials Management Plan (HMMP)	B
	2C.6	Procedures	Procedures for managing records of inspection and maintenance activities	A
			Traffic Management Plan	A
	2C.7	Quality Control/Quality Assurance		
			Observation and reporting of all tests in compliance with the Technical Provisions Section 2	A
			Integration of component parts of the Comprehensive Environmental Protection Program (CEPP) into maintenance quality management	B
			Quality control procedures including a resource table for monitoring and auditing all maintenance activities	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
	2C.8	Audit	Examinations and audit of maintenance activities, review of examination and audit, issue of certificates of compliance	A
			Name of DB Contractor'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	A
	2C.9	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems DB Contractor will use	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
3. Comprehensive Environmental Protection Program (CEPP)				
	3.1	Organization	DB Contractor's main contractual arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents	A
	3.2	Personnel	DB Contractor's plan to provide experienced personnel for the Environmental Team	A
			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 DB Contractor employees in accordance with the Technical Provisions Section 4	B
	3.3	Subcontractors	Overall control procedures for Subcontractors, including consultants and subconsultants.	A

Part	Ref	Section	Contents	Required by
			Responsibility of Subcontractors and their affiliates	A
			Implement Environmental Protection Training Plan (EPTP) for employees of Subcontractors in accordance with the Technical Provisions Section 4	B
	3.4	Environmental	Establishment of the component parts of the Environmental Compliance and Mitigation Plan (ECMP) in accordance with the Technical Provisions Section 4	B
			Procedures to verify compliance with environmental commitments	B
	3.5	Quality Control / Quality Assurance	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
	3.6	Audit	Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority	A
	3.7	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems DB Contractor will use	A
			Identify environmental documentation and reporting requirements, including environmental permits, issues, and commitments	B
4. Public Information and Communications Plan				
	4.1	Organization	DB Contractor's main contractual arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents.	A
	4.2	Personnel	DB Contractor's plan to provide experienced personnel to perform Work in accordance with the Technical Provisions Section 3	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 Subcontractors and any third party with which DB Contractor will coordinate his activities	A
	4.3	Subcontractors	Overall control procedures for Subcontractors, including consultants and subconsultants	A
			Responsibility of Subcontractors and their affiliates	A
			Steps taken to ensure Subcontractors and Suppliers meet the obligations imposed by their respective Contracts	A
	4.4	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
	4.5	Procedures	Procedures describing how the principal activities will be performed	A
	4.6	Quality Control/Quality Assurance	Quality control procedures including a resource table for monitoring and auditing all public information and communication services	A

Part	Ref	Section	Contents	Required by
			Procedures to ensure accuracy, completion, and quality in submittals to TxDOT, Governmental Entities and Customer Groups	A
			Procedures to establish and encourage continuous improvement	A
	4.7	Audit	Name of DB Contractor's representative 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
	4.8	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems DB Contractor will use	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
5. Safety and Health Plan				
	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	A1
	5.2		Procedures for notifying TxDOT of Incidents arising out of or in connection with the performance of the Work	A1
6. TxDOT – DB Contractor Communications Plan				
	6.1		The manner in which the DB Contractor's organization will respond to unexpected requests for information, communicate changes or revisions to necessary DB Contractor personnel and notify the affected stakeholders before and after the changes are made to the Contract Documents.	A
	6.2		Processes and procedures for communication of Project information between the DB Contractor's organization and TxDOT	A
7. ROW Acquisition Plan				
	7.1	Organization	DB Contractor's main contractual arrangements	A
			Organizational structure covering the activities to be performed in accordance with the Contract Documents	A
	7.2	Personnel	DB Contractor's plan to provide experienced personnel to perform Work in accordance with the Technical Provisions Section 7	A
			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 as related to ROW acquisition and Utility Adjustment activities.	A
			Names and contact details, titles, job roles of principal personnel for Subcontractors and any third party with which DB Contractor will coordinate activities	A
	7.3	Subcontractors	Overall control procedures for Subcontractors, including consultants and subconsultants	A
			Responsibility of Subcontractors and their affiliates	A
			Steps taken to ensure Subcontractors and Suppliers meet the obligations imposed by their respective Contracts	A

Part	Ref	Section	Contents	Required by
	7.4	Interfaces	Interfacing between the DB Contractor, Subcontractors and the Independent Engineer during Project ROW acquisition, including the interfaces between Project ROW acquisition, Project design, and quality review processes	A
			Coordination with Utility Owners	A
			Procedures for establishing Utility Adjustment Concept Plans and Utility Adjustment Plans	B
	7.5	Relocation	Relocation Plan (Right of Way)	B
	7.6	Environmental	Control 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	B
			Applicable procedures to implement the Stormwater Pollution Prevention Plan, recycling program and waste management in accordance with the Technical Provisions Section 4	A
			Integration of component parts of the Comprehensive Environmental Protection Program (CEPP) into ROW acquisition management	B
	7.7	Schedule	Logic linked ROW acquisition activities on a parcel-by-parcel basis as part of the Project 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/Quality Assurance	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
	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 DB Contractor will use	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
8. Risk Management Plan				
	8.1		Procedures for identifying, assessing, analyzing, controlling and managing project risks to meet its obligations under the Agreement	A
9. Maintenance Management Plan				
	9.1	Procedures	Procedures describing how the principal activities will be performed during the Work including general maintenance and operations obligations	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
	9.2	Performance Standards	Procedures to be followed by Developer pursuant to the Technical Provisions to comply with all applicable maintenance requirements for the Term	A

Part	Ref	Section	Contents	Required by
	9.3	Procurement	Procedures for procurement of services, materials, and products including methods to ensure best value	A
	9.4	Equipment	Procedures to ensure performance, condition and availability of equipment	A
	9.5	Emergency Response	Procedures setting out how Developer will respond to accidents and Incidents on the Project	A

TEXAS DEPARTMENT OF TRANSPORTATION

TECHNICAL PROVISIONS

FOR

SH 99 GRAND PARKWAY SEGMENTS H, I-1 AND I-2

ATTACHMENT 2-2
WORK BREAKDOWN STRUCTURE REQUIREMENTS

RFP ADDENDUM #6

AUGUST 12, 2016

The following Work Breakdown Structure (WBS) shall be the basis for organizing all Work under the Contract Documents and shall be used to structure the baseline schedule and other cost control systems, including the Payment Progress Process if applicable.

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

The WBS shall conform to level structure as follows:

Table 1: WBS Minimum Requirements

1 **[Name of Project]**
- **1.1. Project Administration**
  - 1.1.1. Mobilization
    - 1.1.1.1. Developer
    - 1.1.1.2. DB Contractor
  - 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**
  - 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**
  - 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**
  - 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. Design (Continued)

- 1.4.3.5. Wall Geotech
- 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. Sections
  - 1.4.6.3. 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. (By Phase)
- 1.4.10. Environmental Design
  - 1.4.10.1. Erosion Control/SWPPP
  - 1.4.10.2. Noise Wall Design
  - 1.4.10.3. Wetland and habitat Mitigation
  - 1.4.10.4. TCEQ Best Management Practices
- 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 and Power Supply
  - 1.4.13.2. ITS/TCS Equipment and Structures
- 1.4.14. Signage and Marking Design
  - 1.4.14.1. Overhead
  - 1.4.14.2. Small signs and 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

- 1.5.1. General
  - 1.5.1.1. Material Submittals, Procurement and Long-lead Items

1.5. Construction (Continued)

- 1.5.1.2. Mobilization
- 1.5.1.3. Administration
- 1.5.1.4. Quality Control
- 1.5.2. By Work Areas – NBFR, SBFR, NBGPL, SBGPL, ML, XR, etc.
  - 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 (if applicable)
  - 1.5.2.4. Subgrade Treatment and Base
    - 1.5.2.4.1. Lime Treatment
    - 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 and 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. (By Wall No.)
  - 1.5.2.7. Bridges
    - 1.5.2.7.1. (By Bridge No.)
  - 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 and 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
    - 1.5.2.9.7. Temporary Walls/Shoring
    - 1.5.2.9.8. Temporary Drainage
    - 1.5.2.9.9. Temporary Illumination
  - 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. Construction (Continued)

- 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
  - 1.5.2.11.3. 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 Sign Structures
  - 1.5.2.13.2. Small 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

1.6. Close-out

- 1.6.1. Inspections
- 1.6.2. Punchlist
- 1.6.3. Closing Documentation
  - 1.6.3.1. As-Builts
  - 1.6.3.2. O&M's
  - 1.6.3.3. Warranty Documents
- 1.6.4. Substantial Completion
- 1.6.5. Final Acceptance

TEXAS DEPARTMENT OF TRANSPORTATION
TECHNICAL PROVISIONS

FOR

SH 99 GRAND PARKWAY SEGMENTS H, I-1 AND I-2

ATTACHMENT 8-2
ESALS AND TRAFFIC DATA

RFP ADDENDUM #6

AUGUST 12, 2016

ATTACHMENT 8-2
ESALS and Traffic Data

Mainlanes- 30 years									Total # of 18k ESAL Applications in One Direction Expected for a 30 Year Period (2019-2049)	
	Average Daily Traffic		Percent Truck				% Tandem Axles in ATHWLD			
Location	2019	2049	ADT	DHV		ATHWLD			Flexible Pavement	Rigid Pavement
SEGMENT H From I-69 to US 90	15,700	26,300	14.3	9.4		12,000	50		15,000,000	21,102,000
SEGMENT I-1 From US 90 to I-10	20,000	33,300	14.9	9.8		12,200	50		19,830,000	27,900,000
SEGMENT I-2 From FM 1405 to SH 146	23,700	37,500	9.6	6.3		12,000	40		13,955,000	19,162,000

ATTACHMENT 8-2
ESALS and Traffic Data

Frontage Roads - 30 years									Total # of 18K ESAL Applications in One Direction Expected for a 30 Year Period (2019-2049)	
	Average Daily Traffic		Percent Truck				% Tandem Axles in ATHWLD			
Location	2019	2049	ADT	DHV		ATHWLD			Flexible Pavement	Rigid Pavement
I-69/US 59 to I-10	15,500	23,800	6.6	5.0		11,300	20		4,030,000	4,449,000

Frontage Roads - 30 years									Total # of 18K ESAL Applications in One Direction Expected for a 30 Year Period (2006-2036)	
	Average Daily Traffic		Percent Truck				% Tandem Axles in ATHWLD			
Location	2006	2036	ADT	DHV		ATHWLD			Flexible Pavement	Rigid Pavement
FM 1405 to SH 146	10,100	16,600	10.8	7.1		11,300	60		5,225,000	6,819,000