Texas Department of Transportation
Book 2 - Technical Provisions

North Tarrant Express Project
Segments 3A and 3B Facility

Attachment 2-1
Facility Management Plan Contents

September 30, 2012

Attachment 2-1 – Facility Management Plan Contents

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

Legend
A = NTP2
B = Revenue Service Commencement

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	Contractors	Procedures to establish how the Developer will manage Contractors	A
	1.4	Schedule	Facility 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 Engineer	A
			Auditing and management review of Developer's own activities under the Facility Management Plan (FMP)	A
			Auditing and management review of Contractor's activities and management procedures	A
	1.7	FMP Update	Procedures for preparation of amendments and submission of amendments to any part of the FMP	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 parts 2 to 8 inclusive of the FMP, including but not limited to: Aesthetics and Landscaping Plan, Acceptance Test Plan, Haul Route Plan, Maintenance Management Plan, Handback Plan, Residual Life Methodology Plan	A
2. Quality Management				
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 FA Documents	A
	2A.2	Personnel	Resource Plan for the Developer and its subcontractors	A

Part	Ref	Section	Contents	Required by
2. Quality Management				
2A. Design Quality Management (continued)				
	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 Engineer 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, 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 FMP	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

Part	Ref	Section	Contents	Required by
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 FA Documents	A
	2B.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 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 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	A
			Procedures for implementation of the Environmental Protection Training Plan (EPTP) for all employees in accordance with the Technical Provisions Section 4	A
	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	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 Environmental Protection Training Plan (EPTP) for employees of subcontractors in accordance with the Technical Provisions Section 4	A
	2B.5	Interfaces	Interfacing between the Developer, Contractors, including any testing contractor, and the Independent Engineer during construction	A
	2B.6	Procedures	List of Project specific construction procedures	A
			Construction detailed procedure for each major activity whether directly undertaken or subcontracted to include pavement, structures, drainage, communications	A
			Traffic Management Plan	A
	2B.7	Quality Control	Construction Quality Management Plan	A
			Integration of component parts of the Comprehensive Environmental Protection Program (CEPP) into construction quality management	A
			Control, identification and traceability of materials, including any material or samples temporarily or otherwise removed from site for testing or other reasons.	A
			Examinations and audit of Construction Work, review of examination and audit, issue of certificates	A
			Observation and reporting of all tests in compliance with the Technical Provisions Section 2	A
			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 FA Documents	A
			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	A

Part	Ref	Section	Contents	Required by
2. Quality Management				
2B. Construction Quality Management (continued)				
	2B.7	Quality Control	Procedures to establish Developer's hold points in construction	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
	2B.8	Audit	Inspection and test plans that identify the proforma and/or databases to be used for recording the inspection and test results	A
			Name of Developer's representative with defined authority for establishing, maintaining, auditing and reporting on the FMP	A
			Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority.	A
	2B.9	Document Management	The manner in which records will be maintained in compliance with the Technical Provisions, including any specific systems Developer will us	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
2C & 2D. Operations and Maintenance Quality Management				
	2C.1 & 2D.1	Organization	Developer's main contractual arrangements	A
			Organizational structure covering the activities to be performed in accordance with the FA Documents	A
	2C.2 & 2D.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 coordinating work of off-site personnel	A
			Names and contact details, titles, job roles of principal personnel for Contractors and any third party with which Developer will coordinate its activities	A
			Names and contact details, titles, job roles of Key Personnel	A
			Procedures for implementation of the Environmental Protection Training Plan (EPTP) for all employees in accordance with the Technical Provisions Section 4	A
	2C.3 & 2D.3	Procurement	Procedures for procurement of services, materials and products including methods to ensure best value	A
	2C.4 & 2D.4	Offices and Equipment	Description of the necessary offices and office equipment to be provided by Developer during the Operating Period	A
	2C.5 & 2D.5	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 Environmental Protection Training Plan (EPTP) for employees of Contractors in accordance with the Technical Provisions Section 4	A

Part	Ref	Section	Contents	Required by
2. Quality Management				
2C & 2D. Operations and Maintenance Quality Management (continued)				
	2C.6 & 2D.6	Interfaces	Interfacing between the Developer, Contractors and the Independent Engineer during the Operating Period	A
			Coordination with Utility Owners	A
			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.7 & 2D.7	Environmental	Coordination of the interface between environmental requirements and the operation and maintenance of the Project	A
			Procedures to implement Storm Water Pollution Prevention Plans (SW3P)	A
			Procedures for the Hazardous Materials Management Plan (HMMP) in accordance with the Technical Provisions Section 4	A
			Detailed procedures to implement the recycling program and waste management in accordance with the Technical Provisions Section 4	A
	2C.8 & 2D.8	Schedule	Renewal Work Schedule	B
	2C.9 & 2D.9	Complaints	Procedures to respond to comments and/or complaints received from Users and others	A
	2C.10 & 2D.10	Equipment	Equipment servicing requirements	A
			Procedures to ensure performance, condition and availability of equipment (including communication equipment, data recording equipment, Project signage and fare collection, tolling and electronic measurement equipment)	A
	2C.11 & 2D.11	Traffic and Ridership	Procedures to collect and verify traffic and ridership data	A
	2C.12 & 2D.12	Procedures	Procedures describing how the principal activities will be performed during the Operating Period: to include routine maintenance, Renewal Work, traffic management, inspections regime, main operational requirements and toll operations	A
			Traffic Management Plan	A
	2C.13 & 2D.13	Quality Control	Examinations and audit of O&M Work, review of examination and audit, issue of certificates of compliance	A
			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 construction quality management	A
			Quality control procedures including a resource table for monitoring and auditing all O&M Work	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.14 & 2D.14	Audit	Name of Developer's representative with defined authority for establishing, maintaining, auditing and reporting on the FMP	A

Part	Ref	Section	Contents	Required by
2. Quality Management				
2C & 2D. Operations and Maintenance Quality Management (continued)				
	2C.14 & 2D.14	Audit	Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority	A
	2C.15 & 2D.15	Performance Standards	Procedures to be followed by Developer pursuant to the Technical Provisions Section 19 to comply with all maintenance requirements	A
	2C.16 & 2D.16	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
	2C.17 & 2D.17	Response to maintenance	Procedure setting out Developer's response to maintenance issues that impair use, reliability or availability of the Project ina timely manner	A
	2C.18 & 2D.18	User satisfaction	Procudures to collect and track User satisfaction	A
	2C.19 & 2D.19	Emergency Response	Incident Management Plan	A
			Procedures setting out how Developer will respond to accidents and Incidents on the Project	A
			Procedures to establish protocols with Emergency Services and others in Emergency	A
	2C.20 & 2D.20	Toll Operations	Electronic Toll Collection System (ETCS) Plan	B
3. Environmental Management				
	3.1	Organization	Developer's main contractural arrangements	A
			Organizational structure covering the activities to be performed in accordance with the FA Documents	A
	3.2	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 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
	3.3	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	A
	3.4	Environmental	Establishment of the component parts of the Comprehensive Environmental Protection Program (CEPP) and Noise Mitigation and Abatement Plan	A

Part	Ref	Section	Contents	Required by
3. Environmental Management (continued)				
	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	A
	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 FA 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 Environmental Protection Training Plan (EPTP) for employees of Contractors	A
	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

Part	Ref	Section	Contents	Required by
4. Public Information and Communications (continued)				
	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 FMP	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. Communications Management				
	6.1		Processes and procedures for communication of Project information between the Developer's organization and TxDOT	A
7. ROW Acquisition Management				
	7.1	Organization	Developer's main contractural arrangements	A
			Orginizational structure covering the activities to be performed in accordance with the FA Documents	A
	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 Environmental Protection Training Plan (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 Engineer during Project ROW acquisition, including the interfaces between Project ROW acquisition, Project design, and quality review processes	A

Part	Ref	Section	Contents	Required by
7. ROW Acquisition Management (continued)				
	7.4	Interfaces	Coordination with Utility Owners	A
			Procedures for establishing Utility Adjustment Concept Plans and Utility Adjustment Plans	A
	7.5	Relocation	Relocation Plan	A
	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 Stormwater Pollution Prevention Plan, recycling program and waste management in accordance with the Technical Provisions Section 4	A
			Address Comprehensive Environmental Protection Plan (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 Comprehensive Environmental Protection Program (CEPP) into ROW acquisition management	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 Developer will use	A
			Document management procedures in compliance with the Technical Provisions Section 2	A
			Identify environmental documentation and reporting requirements	A
8. Cost Management				
	8.1		Procedures for cost management and reporting as required by financial institutions and agencies involved in the Project	A

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North Tarrant Express Project
Segments 3A and 3B Facility

Attachment 2-2
Work Breakdown Structure Requirements

September 30, 2012

Table 1 represents the minimum requirements of Work Breakdown Structure (WBS) for the project schedule. The WBS incorporates various geographic Segments, Regions, Areas and Phases of work to better facilitate management of construction sequencing.

Table 1: Work Breakdown Structure (WBS) Minimum Requirements

- **1 PROJECT DESCRIPTION**
  - **1.1. Project Administration**
    - 1.1.1. Project Summary & Milestones
    - 1.1.2. Mobilization
      - 1.1.2.1. Developer
      - 1.1.2.2. DB Contractor
    - 1.1.3. Submittals and Permitting
      - 1.1.3.1. (By Governmental Agency)
        - 1.1.3.1.1. (By Specific Permit/Submittal Requirement)
  - **1.2. Segment A**
    - 1.2.1. Segment A Summary & Milestones
    - 1.2.2. Project Administration
      - 1.2.2.1. Project Summary and Milestones
      - 1.2.2.2. Mobilization
        - 1.2.2.2.1. Developer
        - 1.2.2.2.2. DB Contractor
      - 1.2.2.3. Submittals and Permitting
        - 1.2.2.3.1. (By Governmental Agency)
          - 1.2.2.3.1.1. (By Specific Permit/Submittal Requirement)
    - 1.2.3. Segment A Right-of-Way Acquisition
      - 1.2.3.1. Acquisition by TxDOT
        - 1.2.3.1.1. (By Parcel No.)
      - 1.2.3.2. Acquisition by Developer
        - 1.2.3.2.1. (By Parcel No.)
    - 1.2.4. Segment A Utility Adjustments
      - 1.2.4.1. Utility Coordination
        - 1.2.4.1.1. Administration and Planning
          - 1.2.4.1.1.1. Site Utility Engineering
          - 1.2.4.1.1.2. Conceptual Design
        - 1.2.4.1.2. (By Owner)
          - 1.2.4.1.2.1. Master Agreements
          - 1.2.4.1.2.2. Utility Assemblies
      - 1.2.4.2. Utility Relocations
        - 1.2.4.2.1. (By Owner)
          - 1.2.4.2.1.1. (By Line)
    - 1.2.5. Segment A Design
      - 1.2.5.1. General Activities and Field Work
      - 1.2.5.2. Develop Specifications
      - 1.2.5.3. Geotechnical Design
      - 1.2.5.4. Pavement Design
      - 1.2.5.5. Drainage Design
      - 1.2.5.6. Roadway Design
      - 1.2.5.7. Bridge Design
      - 1.2.5.8. Retaining Wall Design
      - 1.2.5.9. Traffic Management
      - 1.2.5.10. Environmental Design
      - 1.2.5.11. Landscape and Aesthetic Design
      - 1.2.5.12. Electrical Design

1.2.5.13. ITS & TCS Design
1.2.5.14. Signage and Marking Design
1.2.5.15. Design Packages
1.2.6. Segment A Construction
1.2.6.1. Phase (or Work Area)
1.2.6.1.1. Stage
1.2.6.1.1.1. Work Area (NBFR, SBFR, NBGPL, ML, XR, etc) (or Phase)
1.2.6.1.1.1.1. Traffic Management
1.2.6.1.1.1.1.1. Traffic Control and Temporary Work
1.2.6.1.1.1.1.2. Barricades, Signs & Traffic Handling
1.2.6.1.1.1.1.3. Erosion control
1.2.6.1.1.1.1.4. Detour Construction / Removal
1.2.6.1.1.1.1.5. Portable Traffic Barrier
1.2.6.1.1.1.1.6. Workzone pavement Marking
1.2.6.1.1.1.1.7. Temporary Bridges
1.2.6.1.1.1.1.8. Temporary Walls / Shoring
1.2.6.1.1.1.1.9. Temporary Drainage
1.2.6.1.1.1.1.10. Temporary Illumination
1.2.6.1.1.1.2. Environmental Mitigation
1.2.6.1.1.1.2.1. Noise Walls
1.2.6.1.1.1.2.2. Wetland and Habitat Mitigation
1.2.6.1.1.1.3. Hazardous Materials
1.2.6.1.1.1.3.1. Site Assessments
1.2.6.1.1.1.3.2. Remediation
1.2.6.1.1.1.4. Removals
1.2.6.1.1.1.4.1. Building Removals
1.2.6.1.1.1.4.2. ROW Preparation
1.2.6.1.1.1.4.3. Roadway Removals
1.2.6.1.1.1.4.4. Bridge Removals
1.2.6.1.1.1.5. Earthwork
1.2.6.1.1.1.5.1. Topsoil Stripping and Placing
1.2.6.1.1.1.5.2. Excavation
1.2.6.1.1.1.5.3. Embankment
1.2.6.1.1.1.5.4. Special Geotechnical Measures
1.2.6.1.1.1.6. Subgrade Treatment and Base
1.2.6.1.1.1.6.1. Lime Treatment
1.2.6.1.1.1.6.2. Flexible Base
1.2.6.1.1.1.7. Drainage
1.2.6.1.1.1.7.1. Culverts
1.2.6.1.1.1.7.2. Storm Sewer
1.2.6.1.1.1.7.3. Riprap
1.2.6.1.1.1.8. Pavement
1.2.6.1.1.1.8.1. Asphalt Pavement
1.2.6.1.1.1.8.2. Concrete Pavement
1.2.6.1.1.1.8.3. Curb & Gutter
1.2.6.1.1.1.8.4. Driveways
1.2.6.1.1.1.8.5. Sidewalks and Median Paving
1.2.6.1.1.1.9. Retaining Walls
1.2.6.1.1.1.9.1. (By Wall No.)
1.2.6.1.1.1.10. Bridges
1.2.6.1.1.1.10.1. (By Bridge No.)
1.2.6.1.1.1.11. Permanent Barriers
1.2.6.1.1.1.11.1. Permanent Concrete Barriers
1.2.6.1.1.1.11.2. Metal Beam Guard Fence
1.2.6.1.1.1.11.3. Crash Attenuators
1.2.6.1.1.1.12. Signals and Illumination

1.2.6.1.1.1.12.1. Roadway Illumination
1.2.6.1.1.1.12.2. High Mast Illumination
1.2.6.1.1.1.12.3. Electrical Services
1.2.6.1.1.1.12.4. Traffic Signals
1.2.6.1.1.1.13. ITS/TCS
1.2.6.1.1.1.13.1. Duct Bank Systems
1.2.6.1.1.1.13.2. Equipment Foundations
1.2.6.1.1.1.13.3. Support Structures and Equipment
1.2.6.1.1.1.14. Landscaping
1.2.6.1.1.1.14.1. Seeding and Sodding
1.2.6.1.1.1.14.2. Fertilizer and Watering
1.2.6.1.1.1.14.3. Special Aesthetic landscaping (if applicable)
1.2.6.1.1.1.15. Permanent Signing and Markings
1.2.6.1.1.1.15.1. Overhead Sign Structures
1.2.6.1.1.1.15.2. Small Signs
1.2.6.1.1.1.15.3. Pavement Markings

1.3. Segment B (use the same level of detail as Segment A above)

1.4. Segment C (use the same level of detail as Segment A above on all subsequent segments)

1.5. Segment D (etc.)

Texas Department of Transportation
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North Tarrant Express Project
Segments 3A and 3B Facility

Attachment 2-3
Organizational Structure for Cost Reporting

September 30, 2012

Table 2 represents the required organizational structure that all cost and schedule information shall rollup to in order to facilitate reporting project costs, expenditures and all progress payment processes.

Table 2: 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

Texas Department of Transportation
Book 2 - Technical Provisions

North Tarrant Express Project
Segments 3A and 3B Facility

Attachment 2-4
Toll Operations Document Retention Schedule

September 30, 2012

TOLL OPERATIONS DOCUMENT RETENTION SCHEDULE

Document Name	Description	Retention Period	Record Retention Schedule Citation (Short Description)
Bank Deposit slips (copies)	Used by the Operations/Accounting Deposit clerk to denote the amounts, dates, and times of deposits taken to the bank (one copy goes to Mgr.)	Fiscal Year End +3 years	86ACC16-Cash Management and Deposit Records
Batch Control Log	Used by the Operations staff to log daily tracking forms. (10 – 2" binders for one year)	1 Year	86ADO09-Logs/Log Books
Batch Tracking Form	Used by the Operations Supervisors and staff to track batches as they go through the fulfillment process.	1 Year	86ADO09-Logs/Log Books
Call Monitoring Form	Used by Operations Supervisors	1 Year	86IRM05-Activity Monitoring
Call Classification Form	Used by Operations Supervisors and Managers to develop call statistics and report upon them daily. (Recommend destroying hard copies after entering into Daily Report)	1 Year	86ADM08-Operations Reports
Card Testing Log	Used by the Operations Supervisors and staff to track the testing of account management cards. (Recommend destroying hard copies)	1 Year	86ADO09-Logs/Log Books
Card Type Summary Report	Used by the Operations/Accounting Auditors to reconcile credit card totals with the Account Management System reports.	Fiscal Year End +3 years	86ACC15-Receipts/Receipts Logs/Reconciliations
Change Fund Sheet	Used by Operations Storefront Supervisor to track change requests for available Storefront funds	Fiscal Year End +3 years	86ACC16-Cash Management and Deposit Records
Credit Card Reconciliation Worksheet (Account Management System to Credit Card Processor)	Used by the Operations/Accounting Auditor to reconcile credit card payments from Account Management System to the bank.	Fiscal Year End +3 years	86ACC15-Receipts/Receipts Logs/Reconciliations
Operations Daily Report	Used by the Operations Management team to report call center and storefront statistics	1 Year	86-ADM08-Operations Reports
Summary of Fulfilled Tag Requests Report	Account Management System report used by Operations Manager to identify number of tag fulfillment requests processed for the day.	1 Year	86-ADM08-Operations Reports
Phone System (Queue) Activity Report	Phone system report used by Call Center Supervisor to identify activity for each call center queue	1 Year	86-ADM08-Operations Reports
Phone System Activity Report by Interval	Phone system report used by Call Center Supervisor to identify activity for each call center queue in 30 minute intervals	1 Year	861 RM05--Activity Monitoring
Phone System Agent Summary Report	Phone system report used by Call Center Supervisor to identify activity for each individual agent.	1 Year	861 RM05--Activity Monitoring

Document Name	Description	Retention Period	Record Retention Schedule Citation (Short Description)
CSR Daily Reconciliation Form	Used by the Operations Storefront Supervisor and storefront staff to reconcile all walk-in transactions with their tag fulfillment and the funds taken for the basis.transactions on a daily	Fiscal Year End +3 years	86ACC15--Receipts/Receipts Logs/Reconciliations
CSR Transaction Qualification Form	Used by the Operations Call Center CSRs to track call type statistics and then used by the Operations Managers and Supervisors for QA procedures. (One drawer for one year)	1 Year	861 RM05--Activity Monitoring
Daily Activity Report	Used by Operations staff to document activity and tasks completed each day. (each supervisor maintains workgroups'logs) 10-12 Binders	1 Year	86ADM08--0perations Reports
Daily Bank Deposit Log	Used by the Operations/Accounting Clerk to denote the amounts, dates, and times of deposits taken to the bank.	Fiscal Year End +3 years	86ACC16--Cash Management and Deposit Records
Daily Cash Reconciliation Worksheet	Used by the Operations/Accounting Clerk to reconcile cash transactions pre-deposit on a daily basis.	Fiscal Year End +3 years	86ACC15--Receipts/Receipts Logs/Reconciliations
Daily Safe Log	Used by the Operations Supervisor to determine the amount of funds that should be located in the Operations center safe at any time.	Fiscal Year End +3 years	86ACC16--Cash Management and Deposit Records
Daily Safe Log	Used by the Operations Supervisor to determine the amount of funds that should be located in the Operations center safe at any time.	Fiscal Year End +3 years	86ACC16--Cash Management and Deposit Records
Deposit Reconciliation Summary	Used by Deposit clerk and Auditor to reconcile daily depository funds	Fiscal Year End +3 years	86ACC16--Cash Management and Deposit Records
Deposit Reconciliation Worksheet	Used by the Operations/Accounting Auditor to reconcile deposits from Account Management System to the bank on a daily basis.	Fiscal Year End +3 years	86ACC15--Receipts/Receipts Logs/Reconciliations
Detailed Call, CSQ, Agent Report	Phone System report used by Call Center Supervisor to identify activity for each individual agent, itemizing individual calls.	1 Year	86IRM05--Activity Monitoring
E-Mail Tracking Log	Used by Operations Storefront Supervisor to track number of incoming s-malls by type and resolution counts.	1 Year	86ADOO7--Correspondence Tracking Record
Enrollment Form	Used by Operations CSRs to enroll new customers in the toll Account Management system. Contain credit card numbers and must be secured and destroyed accordingly.	AC (After Completion/ Account Closed) +3 years	86ACC21--Credit Card Account Record
Escalation Log	Used by Operations Call Center Supervisors to track escalatedissues and whether or not they have been resolved.	1 Year	86ADOO9--Logs/Log Books
Incoming Mail Log	Used by Operations Supervisors and Managers to track the collection, batching, and distribution of incoming mail.	1 Year	86AD007--Correspondence Tracking Record

Document Name	Description	Retention Period	Record Retention Schedule Citation (Short Description)
Interim Bank Statement	Used by the Operations/Accounting Auditor to reconcile deposits made to the bank.	Fiscal Year End +3 years	86ACC20--Bank Statements
IOP Reconciliation Worksheet	Used by the Operations Auditor to reconcile IOP transactions between Account Management System and the TTA IOP Module.	Fiscal Year End +3 years	86ACC 15--Receipts/Receipts Logs/Reconciliations
Kit Tracking Batch Transmittal	Used by Operations staff to transmit a batch of kits to another Operations staff member	Fiscal Year End +3 years	86ACC07--Inventory Records
Monthly Bank Statement	Used by the Operations/Accounting Auditor to verify all transactions to the bank on a monthly basis.	Fiscal Year End +3 years	86ACC20--Bank Statements
Outgoing Mail Log	Used by the Operations/Accounting Auditor and Management team to ensure that all outgoing mail is handled appropriately.	1 Year	86AD007--Correspondence Tracking Record
Postage Report	Used by the Operations Auditor to compare to the Outgoing Mail Log and reconcile to two.	Fiscal Year End +3 years	86AD010--Postage/Postage Expense Records
Special Events Request Form	Used by the Operations Special Events Supervisor to request equipment for a special event.	1 Year	86AD011--Work Orders, Service Requests
Tag Inventory Sheet *	Used to track tag kit bins as they are received into inventory. (Recommend destroying hard copies)	Fiscal Year End +3 years	86ACC07--Inventory Records
Tag Testing Log *	Used by the Operations Supervisor and staff to track the testing of tags. (Recommend destroying hard copies)	1 Year	86AD009--Logs/Log Books
Transaction Detail Report	Used by the Operations/Accounting Auditor to reconcile any issues (including timing issues) that result from the daily credit card reconciliation.	Fiscal Year End +3 years	86ACC09--Internal Fiscal Reports
IOP Module EFT Summary	Used by the Operations/Accounting Auditor to Report track funds due to agency from away agencies and vice-versa.	Fiscal Year End +3 years	86ACC09--Internal Fiscal Reports.
IOP Module Transaction Reconciliation Detail Report	Used by the Operations Auditor to reconcile interop issues (including rejected, but posted tolls) that result from monthly reconciliation.	Fiscal Year End +3 years	86ACC15--Receipts/Receipts Logs/Reconciliations
Tag Sales Receipts	Used by Operations Storefront Supervisor as receipt for single payment to multiple accounts.	Fiscal Year End +3 years	86ACC15--Receipts/Receipts Logs/Reconciliations
Tag/Card Request Form	Used by the Operations Special Events Supervisor to request equipment for a special event.	1 Year	86AD011--Work Orders, Service Requests
Transaction Summary Report	Used by the Operations Auditor and Operations to track all transactions in the Account Management System by all clerks for an adjustable span of time.	1 Year	86ADM08--0perations Reports

Document Name	Description	Retention Period	Record Retention Schedule Citation (Short Description)
Clerk Transaction Summary	Used by the Operations Auditor and Supervisors to reconcile all the transaction of a specific clerk for an adjustable span of time with Account Management System.	Fiscal Year End +3 years	86ACC09--Internal Fiscal Reports.
Transaction Type Detail	Used by Operations and Auditors to reconcile Report transaction details in the Account Management System for a specific transaction type with their counterparts in other systems.	Fiscal Year End +3 years	86ACC09--Internal Fiscal Reports.
Deposit Summary	Used by Walk-in Store Front Supervisor to document deposit totals in Account Management System.	Fiscal Year End +3 years	86ACC16--Cash Management and Deposit Records
Credit Card Journal - Detail Report	Used by the Operations Auditor to reconcile specific credit card transaction in the Account Management System for all card types to their Credit Card Processor counter arts.	Fiscal Year End +3 years	86ACC09--Internal Fiscal Reports
Transaction Control Summary by Agency	Used by Auditors and Operations to deliver a big picture, large-scope review of all transactions in the Account Management System occurring for an adjustable span of time.	Fiscal Year End +3 years	86ACC09--Internal Fiscal Reports
Follow-up Notes	Used by Operations Call Center Supervisors to identify escalated issues from CSRs or customers that may require follow up by the Account Management System.	AC (After Completion/ Final Resolution) +2 years	86ADM06--Complaint Files (NOTE: Issues resulting in legal action retained AC+3 per 86ADM43, Legal Case Files.
New Accounts Added Report	Used by the Operations Call Center Supervisors to ensure that all newly enrolled accounts were properly enrolled with the correct funds posted to all new accounts.	AC (After Completion/ Account Closed)+3 years	86ACC21--Credit Card Account Record
Account Management System-IP User Productivity Report	Used by Image Review Supervisor to identify images reviewed by individual clerks	1 Year	86IRM05--Activity Monitoring
Toll Management (TMS) Traffic, Operator, Status, Revenue Reports	Reports on revenue and traffic	Fiscal Year End +3 years	86ACC39-Internal Fiscal Reports (Using the longest retention requirement.)

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North Tarrant Express Project
Segments 3A and 3B Facility

Attachment 2-5
I2MS XML Table

September 30, 2012

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

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
Authorized By	authorized_by	nvarchar	100	CVL
Authorized Date	authorized_date	smalldatetime		MM/dd/yyyy
Completed Date	completed_date	smalldatetime		MM/dd/yyyy
Digital Signature ID 1	dig_sig_id1	int		
Digital Signature ID 2	dig_sig_id2	int		
Remarks	remarks	text		
Reviewed By	reviewed_by	nvarchar	100	CVL

Body Fields

Pulverization Gradation (DB-101-E, Part III)

Table Name: VALUE_DB101_3E_TEST **Maximum Rows: 1**

Field Description	Field Name	Datatype	Length	Values
Individual or Cumulative	individual_cumulative	nvarchar	100	Individual, Cumulative
Minus #40 Sieve	negative_no_40	nvarchar	100	
Total Weight	total	nvarchar	100	
Test Method	test_method	nvarchar	100	
Tested By	tested_by	nvarchar	100	
Tested Date	tested_date	datetime		MM/dd/yyyy
Stamp Code	stamp_code	int		

Table Name: VALUE_DB101_3E_SIEVE **Maximum Rows: 4**

Field Description	Field Name	Datatype	Length	Values
Sieve Size	sieve_size	nvarchar	100	3", 2-1/2", 2", 1-3/4", 1-1/2", 1", 7/8", 3/4", 1/2", 3/8", No.4, No.8, No.16, No.30, No.40, No.50, No.100, No.200
Weight Retained	weight_retained	decimal	(19, 8)	
Cumulative Weight Retained	cumulative_weight_retained	decimal	(19, 8)	
Cumulative Percent Passing	cumulative_pct_passing	decimal	(19, 8)	
Lower Specification Limit	lower_spec_limit	decimal	(19, 8)	
Upper Specification Limit	upper_spec_limit	decimal	(19, 8)	
Within Master Gradation Limits	master_grading	nvarchar	100	Yes, No

Moisture Content of Aggregates (DB-103-E)

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

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

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

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

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

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

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

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

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

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

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

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

Field Description	Field Name	Datatype	Length	Values
Plastic Index	plasticity_index	int		
Stamp Code	stamp_code	int		CVL
Tested By	tested_by	nvarchar	100	CVL
Tested Date	tested_date	datetime		MM/dd/yyyy

Bar Linear Shrinkage (DB-107-E)

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

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

Particle Size Analysis (DB-110-E)

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

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

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

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

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

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

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

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

Field Description	Field Name	Datatype	Length	Values
Dry Density	dry_density	decimal	(19, 8)	
Dry Mass Material	dry_mass_material	decimal	(19, 8)	
Dry Mass Pan & Specimen	dry_mass_pan_specimen	decimal	(19, 8)	
Estimated Dry Density	est_dry_density	decimal	(19, 8)	
Height of Specimen	height_specimen	decimal	(19, 8)	
Mass Material	mass_material	decimal	(19, 8)	

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

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

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

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

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

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

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

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

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

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

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

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

Triaxial Compression Tests (DB-117-E)

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

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

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

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

Determining Soil pH (DB-128-E)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Field Description	Field Name	Datatype	Length	Values
Cumulative Percent Passing	cumulative_pct_passing	decimal	(19, 8)	
Cumulative Percent Retained	cumulative_pct_retained	decimal	(19, 8)	
Cumulative Weight Retained	cumulative_weight_retained	decimal	(19, 8)	
Individual Weight Retained	individual_weight_retained	decimal	(19, 8)	
Lower Limit Grading	lower_limit_grading	decimal	(19, 8)	
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 }
Upper Limit Grading	upper_limit_grading	decimal	(19, 8)	
Within Grading Limits	within_grading_limits	bit		

Sand Equivalent (DB-203-F)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Deleterious Material (DB-413-A)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Direct Measurement of Bridge Deck Thickness (DB-423-A, Part II)

Table Name: VALUE_DB423B				Maximum Rows: 1
Field Description	**Field Name**	**Datatype**	**Length**	**Values**
Stamp Code	stamp_code	nvarchar	100	CVL
Tested By	tested_by	nvarchar	100	CVL
Tested Date	tested_date	datetime		MM/dd/yyyy
Table Name: VALUE_DB423B_BAY				**Maximum Rows: 18**
Field Description	**Field Name**	**Datatype**	**Length**	**Values**
Concrete Depth	concrete_depth	decimal	(19,4)	
Steel Depth	steel_depth	decimal	(19,4)	

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

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

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

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

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

Table Name: VALUE_DB121E — Maximum Rows: 1

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

Table Name: VALUE_DB121E_SPECIMEN — Maximum Rows: 8

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

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

Table Name: VALUE_DB126E — Maximum Rows: 1

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

Table Name: VALUE_DB200ST — Maximum Rows: 1

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

Table Name: VALUE_DB200ST_SIEVE — Maximum Rows: 8

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

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

Table Name: VALUE_DB224F — Maximum Rows: 1

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

Table Name: VALUE_DB235F — Maximum Rows: 1

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

Table Name: VALUE_DB410A — Maximum Rows: 1

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

Table Name: VALUE_DB410A_SAMPLE — Maximum Rows: 4

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

Table Name: VALUE_DB411M — Maximum Rows: 1

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

Table Name: VALUE_DB411M_CYCLE — Maximum Rows: 5

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

Table Name: VALUE_DB411M_PARTICLE — Maximum Rows: 8

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

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
Stamp Code	stamp_code	int		CVL
Tested By	tested_by	nvarchar	100	CVL
Tested By - Part II	tested_by_part2	nvarchar	100	CVL
Tested By - Part III	tested_by_part3	nvarchar	100	CVL
Tested Date	tested_date	datetime		MM/dd/yyyy
Tested Date - Part II	tested_date_part2	datetime		MM/dd/yyyy
Tested Date - Part III	tested_date_part3	datetime		MM/dd/yyyy

Table Name: VALUE_DB424A_CORE — Maximum Rows: 4

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

Table Name: VALUE_DB436A — Maximum Rows: 1

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

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

Table Name: VALUE_DB448A — Maximum Rows: 1

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

Table Name: VALUE_DB448A_SPECIMEN — Maximum Rows: 6

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

Table Name: VALUE_DB460A — Maximum Rows: 1

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

Table Name: VALUE_DB530C — Maximum Rows: 1

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

Table Name: VALUE_DB620J — Maximum Rows: 1

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

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>
```