EXHIBIT 2

Maintenance Specification

0100 General Maintenance Obligations

Throughout the Maintenance Term, Maintenance Contractor shall be responsible for and shall carry out Maintenance Services for the Elements identified in Attachment 2 within the limits of the Project as shown in Attachment 3 or as modified by the Released for Construction Documents as defined in Exhibit 1 to the Development Agreement and as set forth in this Exhibit 2 and the COMA Documents. Maintenance Contractor shall establish and maintain an organization that effectively manages all Maintenance Services in a manner set forth in the approved Maintenance Management Plan and the requirements of the COMA. Maintenance Contractor shall take all necessary actions to achieve the following:

- Coordinate activities of other entities with interests within the Project limits, including but not limited to USCBP, emergency services, police, toll operator, towing companies, regional traffic management center.
- Provide incident and emergency response, management and reporting.
- Conduct regular patrols of all lanes of the facility to identify conditions that are unsafe or have the potential to become unsafe, conditions that could threaten the infrastructure, and to attend to existing or changing conditions.
- Maintain the Maintained Elements in a manner appropriate for a facility of the character of the Project and maintain all lanes in accordance with the same standard of maintenance.
- Minimize delay and inconvenience to Users and, to the extent Maintenance Contractor is able to control, Users of adjacent and connecting roadways.
- Monitor and observe weather and weather forecasts to proactively deploy resources to minimize delays and safety hazards due to heavy rains, snow, ice, or other severe weather events.
- Minimize the risk of damage, disturbance, or destruction of third-party property during the performance of Maintenance Services.
- Coordinate with and enable TxDOT and others with statutory duties or functions in relation to the Project to perform such duties and functions.
- Perform systematic Project inspections, operational work, periodic maintenance, and routine maintenance in accordance with the provisions of Maintenance Contractor's Maintenance Management Plan and Maintenance Contractor's Maintenance Safety Plan and the COMA Documents.
- Prompt investigate reports or complaints received from all sources.

In carrying out the Maintenance Services, where there is a requirement for design, the Maintenance Contractor shall ensure that the Project is restored either to the original design used for the construction of the Project, or to a different design that shall be in accordance with the requirements for design set forth in the Contract Documents.

Maintenance Contractor shall submit an annual report to TxDOT by each anniversary of the Initial Maintenance Term Commencement Date. This annual report shall include the following elements:

- An assessment of the actual Maintenance Services achievements versus the planned goals established in the Maintenance Management Plan, as well as corrective actions and measures to be taken in the ensuing year to ensure that any shortcomings are corrects;
- An assessment of compliance with the various traffic control requirements and limitations contained in Section 3.4 of the COMA and the traffic control plans developed in accordance with Section 1100, as well as any corrective measures taken to correct any breach or violation of such requirements and limitations and any corrective measures necessary to prevent such future breach or violation of such requirement and limitations;
- A report of the quality inspections and test performed, the results of such inspections and tests, and occurrences and resolution of nonconformance discoveries.

On or about the Effective Date of termination of Maintenance Services, the Maintenance Contractor shall submit to TxDOT a complete set of Record Drawings. The Record Drawings and Documentation shall be an organized, complete record of drawings and supporting calculations and details that accurately represent what the Maintenance Contractor constructed. Maintenance Contractor shall ensure that the Record Drawings reflect the actual condition of the Maintenance Services construction.

Maintenance Contractor's Maintenance Manager shall be responsible to oversee and perform the Maintenance Services in accordance with the COMA including ensuring proper training of its maintenance personnel and resources available for conducting Maintenance Services. Maintenance Manager shall be responsible for the health and safety of personnel involved with Maintenance Services and the general public affected by the Project and shall serve as the point of contact for Maintenance Contractor in communication with TxDOT and in coordination activities with other entities during emergency events.

0110 Performance Requirements

Maintenance Contractor is responsible for performing all activities necessary to satisfy the Performance Requirements set forth in Attachment 1 with respect to the Maintained Elements. Failure to meet a Performance Requirement, whether through failure to meet the Target for any relevant measurement record, or for any other reason, shall be deemed to be a Defect. Whenever a Defect is identified, either by Maintenance Contractor's inspections, by TxDOT or any third party, Maintenance Contractor shall act to remedy, repair and record the Defect as described herein.

The remedy or repair of any Maintained Element shall meet or exceed the standard identified in the column entitled "Target" in Attachment 1 to this Maintenance Specification and a Maintenance Record shall be created by Maintenance Contractor to verify that this requirement has been met.

The period for 'Response To Defects' set forth in Attachment 1 to this Maintenance Specification shall be deemed to commence upon the Maintenance Contractor becoming aware of the Defect.

Where action is taken to remedy or repair any Defect in any Maintained Element of the Project, Maintenance Contractor shall create a Maintenance Record that identifies the nature of the

remedy or repair. Maintenance Contractor shall include within the relevant Maintenance Record a measurement record compliant with the requirements set forth in the column entitled "Measurement Record" in the Attachment 1 to this Maintenance Specification.

Should Maintenance Contractor propose any changes to Attachment 1 Maintenance Contractor shall propose for TxDOT's approval such amendments to the inspection and measurement methods and measurement records as are necessary to cause these to comply with this Maintenance Specification.

0120 Maintenance Management Plan

On or before 60 days after the date of issuance of Maintenance NTP1, Maintenance Contractor shall prepare and submit, for TxDOT's review and approval, a Maintenance Management Plan (MMP). Approval by TxDOT of the MMP shall be a condition precedent to the performance of Maintenance Services.

The MMP is an umbrella document that describes the Maintenance Contractor's managerial approach, strategy, and quality procedures to maintain the Project and achieve all requirements of the COMA Documents. The MMP shall define the process for maintenance of the Project throughout the Maintenance Term. Unless otherwise agreed by Texas Department of Transportation (TxDOT), the MMP shall be consistent with the maintenance approach and MMP submitted with the Proposal.

The MMP shall include Performance Requirements, measurement procedures, threshold values at which maintenance is required, inspection procedures and frequencies, and subsequent maintenance to address noted deficiencies, for each Maintained Element of the Project in accordance with Attachment 1, including impacts to adjacent and connecting roadways, in addition to the general sequence of Maintenance Services and schedule deadlines. The MMP shall identify response times to mitigate hazards, permanently remedy, and permanently repair Defects. Response times shall be in accordance with Attachment 1. Maintenance Contractor shall update this plan as required, or at least annually.

The MMP shall include procedures for managing records of inspection and Maintenance Services, including appropriate measures for providing protected duplication of the records. Inspection and Maintenance Records shall be kept for the Maintenance Term and shall be provided to TxDOT at the time the Project is delivered to TxDOT, at either the expiration of the Maintenance Term or earlier termination of the Agreement. All records obtained during the Warranty Periods shall be kept and provided to TxDOT at the end of the last Warranty Period.

The MMP shall include a schematic clearly illustrating the limits, using auditable sections per Section 0130.

0130 Auditable Sections

Maintenance Contractor shall implement the Texas Reference Marker System and shall establish Auditable Sections referenced to the Texas Reference Marker System used by TxDOT.

Maintenance Contractor shall prepare drawings identifying the Auditable Sections and shall submit to TxDOT for approval as a condition precedent to commencing Maintenance Services. The drawings shall identify the boundaries of each Auditable Section and shall cross reference to an inventory describing each Maintained Element of the Project contained within each Auditable Section.

0140 Incident Management

As part of the MMP, Maintenance Contractor shall prepare and implement an Incident Management Plan (IMP) to address incident and emergency response, including:

- Procedures to identify Incidents and notify Emergency Services providers and establish traffic control for Incident management activities in a timely manner;
- Procedures for removal of stalled, broken down, wrecked or otherwise incapacitated vehicles from the travel lane, including coordination with Emergency Services/Law enforcement;
- Procedures to institute all measures to clear the Incident and return lane availability within one hour of notification;
- Procedures for cleanup of debris, oil, broken glass, etc. and other such objects foreign to the roadway surface;
- Procedures to identify, contain, and dispose all hazardous material spill;
- Procedures for automobile towing of Users' light and heavy vehicles at the Users' expense;
- Descriptions of contact methods, personnel available, and response times for any Emergency condition requiring attention during off-hours.

Where an Incident or Emergency has an effect on the operation of the Project, Maintenance Contractor shall clear obstructions and repair damage to the Project under the supervision of the relevant Emergency Services if necessary, such that the Project is returned to normal operating standards and safe conditions as quickly as possible.

Where liquid or soluble material spills are involved, Maintenance Contractor shall take all necessary measures to minimize pollution of watercourses or groundwater. Where structural damage to structures is suspected, Maintenance Contractor shall cause that a suitably qualified bridge engineer or specialist inspector is available to evaluate the structure and to advise on temporary repairs and shoring needed to provide safe clearance of the Incident or Emergency. Where such an Incident or Emergency involves a personal injury, Maintenance Contractor shall not remove any vehicle or other item that may assist a potential investigation by Emergency Services until authorized to do so by such agency or agencies.

0150 Capital Asset Replacement Work

The MMP shall include Maintenance Contractor's proposals for Capital Asset Replacement Work. As part of the MMP required, Maintenance Contractor shall prepare and submit, for TxDOT's review and approval, a Capital Asset Replacement Work Submittal which includes the timing, scope, and nature of work that Maintenance Contractor proposes during each year. Maintenance Contractor shall set forth, by Maintained Element:

- The estimated Useful Life;
- The description of the Capital Asset Replacement Work anticipated to be performed at the end of the Maintained Element's Useful Life;
- A brief description of any Capital Asset Replacement Work anticipated to be performed before the end of the Maintained Element's Useful Life including reasons why this work should be performed at the proposed time; and
- Capital Asset Replacement Work Schedule as described in Section 0220.

On or before 60 days after the issuance of Maintenance NTP1, as part of the MMP, the Maintenance Contractor shall submit the first Capital Asset Replacement Work Submittal to TxDOT for review.

Not later than 120 days before each anniversary of the Initial Maintenance Term Commencement Date thereafter, Maintenance Contractor shall prepare and submit, for TxDOT's review and approval, either: (a) a revised Capital Asset Replacement Work Submittal for the upcoming year or (b) the then-existing Capital Asset Replacement Work Submittal, accompanied by a written statement that Maintenance Contractor intends to continue in effect the then-existing Capital Asset Replacement Work Submittal without revision for the upcoming year (in either case, referred to as the "updated Capital Assert Replacement Work Submittal"). Maintenance Contractor shall make revisions as reasonably indicated by experience and then-existing conditions respecting the Project, changes in technology, changes in Maintenance Contractor's planned means and methods of performing the Capital Asset Replacement Work, and other relevant factors. The updated Capital Asset Replacement Work Submittal shall show the revisions, if any, to the prior Capital Asset Replacement Work Submittal and include an explanation of reasons for revisions. If no revisions are proposed, Maintenance Contractor shall include an explanation for the lack of revisions.

0160 Maintenance Management System

Maintenance Contractor shall implement a computer based Maintenance Management System (MMS), compatible with TxDOT MMS, to record inventory, failures, repairs, maintenance activities and inspections performed.

The MMS shall include relevant Maintained Element information including but not limited to, location to the nearest tenth mile, using the posted reference marker number, Geographic Information System (GIS) data and control number for bridge class structures, asset description, date of installation, type of failure, date-time of failure, date-time of response to the site and date-time returned to service, preventive maintenance work, scheduled work, work repair code, time of failure, to time of repair. The MMS shall be configured to report work by TxDOT "function code" shown in Attachment 7, Maintained Element, reference marker, and unit of measurement, as the same described in the MMS User Manual, to categorize the Maintenance Services performed by the Maintenance Contractor.

The MMS system shall be able to record all complaints/service requests and Maintenance Contractor shall report weekly to TxDOT, on a format approved by TxDOT, information on any complaints or service requests received by the Maintenance Contractor. This information will include the following:

- The date and time of the complaint;
- The location and nature of the problem;
- Injuries and police involvement, including agency, name and badge number;
- Who made the complaint; and
- Date and action taken to address the complaint.

The MMS system shall be able to record all accidents/Incidents. The Maintenance Contractor shall report in writing to TxDOT, no later than the 15th of each calendar month on a format approved by the TxDOT, information from the previous month on any accident or Incident related to Maintenance Services being performed by Maintenance Contractor or within a work zone, including:

- accidents involving Maintenance Contractor or any Subcontractor personnel, equipment, barricades or tools;
- traffic accidents within the limits or in the vicinity of any Maintenance Services being performed by Maintenance Contractor or any Subcontractors;
- releases of Hazardous Materials;
- any accident involving Maintenance Contractor or the traveling public that causes damage to any Project appurtenance, structure, improvement or fixture.
- with respect to any accident/Incident, the information provided shall include as a minimum:
    - The date and time of the accident/Incident;
    - The location of the problem;
    - The nature of the problem;
    - All parties involved in the Incident, including names, addresses, telephone numbers and their involvement (including witnesses);
    - Responsible party and insurance information;
    - Action taken to address the Incident; and
    - Documentation of traffic control in place at location.

When a Maintained Element is constructed, installed, maintained, inspected, modified, replaced or removed, Maintenance Contractor shall update the MMS within three days of completion of such work. Defects shall be recorded on the MMS within 3 days of coming to the attention of Maintenance Contractor. All other recording requirements shall be recorded on the MMS within 15 days of completion or occurrence of the relevant activity.

The MMS shall be fully populated and operational prior to the commencement of Maintenance Services and kept updated and operational for the duration of the Maintenance Term. Maintenance Contractor shall provide equipment, facilities and training necessary to permit remote, real-time, dedicated high-speed access to the MMS, via one terminal each, for TxDOT. Maintenance Contractor shall handover the MMS and everything required for its operation to TxDOT, or other entity as directed by TxDOT, upon expiration or earlier termination of Maintenance Term.

0170 Maintenance Services Quality Control Plan

Within 60 days after issuance of Maintenance NTP1, Maintenance Contractor shall submit a comprehensive quality control plan ("Maintenance Services Quality Control Plan') to TxDOT for approval that is consistent with and expands upon the preliminary Quality Management Plan submitted with the Proposal.

The Maintenance Services Quality Control Plan (Maintenance Services QCP) shall capture all Work performed by Maintenance Contractor and its Subcontractors and shall contain detailed procedures for the Maintenance Contractor's quality control activities including a complete description of the quality policies and objectives that Maintenance Contractor shall implement throughout its organization. The policies shall demonstrate Maintenance Contractor senior management's commitment to implement and continually improve the maintenance quality system.

The Maintenance Services QCP shall contain detailed descriptions of the inspection and test plans, including the timing and frequency of testing, as well as detailed systems and procedures for the following:

- Control of quality records
- Management reviews
- Resource allocation
- Measurement of customer satisfaction
- Control of nonconforming products and services
- Internal audits

Maintenance Contractor shall update the Maintenance Services QCP as needed to ensure current versions of the following information are contained in said plan:

- The organizational chart that identifies all quality management personnel, their roles, authorities and line reporting relationships;
- Descriptions of the roles and responsibilities of all quality management personnel and those who have the authority to stop activities;
- Identification of testing agencies, including information on each agency's capability to provide the specific services required for the activities, certifications held, equipment, and location of laboratories; and
- Resumes for all quality management personnel.

Maintenance Contractor shall revise its Maintenance Services Quality Control Plan when its own quality management organization detects a repeating or fundamental non-conformance in the work performed or in the manner the Maintenance Services are inspected or tested, or when TxDOT advises the Maintenance Contractor of such a problem.

The Maintenance Services Quality Control Plan shall be consistent with current versions of ISO standards relating to quality and audit as updated by the International Standards Organization. Maintenance Contractor may elect to obtain formal ISO quality certification, but will not be required to do so.

Quality terminology, unless defined or modified elsewhere in the COMA Documents, shall have the meaning defined in BS ISO 9001. Terms used in BS ISO 9001 shall have the meanings defined below:

- Organization - the Maintenance Contractor's organization, including any Affiliates and Subcontractors
- Customers - the Users of the roadways, TxDOT, Customer Groups, and key stakeholders that have an adjacent property interest or connecting roadway
- Suppliers - Contractors
- Product - Maintenance Services
- Quality control - the part of quality management focused on fulfilling quality requirements
- Quality Management Plan - the Maintenance Services Quality Control Plan

Maintenance Contractor shall make all quality records available to TxDOT for review upon TxDOT's request and shall submit to TxDOT the results of all internal audits within seven Days of their completion.

Maintenance QC Manager shall be responsible to see the methods and procedures contained in approved Maintenance Services QCP are implemented and followed by Maintenance Contractor and Subcontractors in the performance of the Maintenance Services. Maintenance QC Manager shall be a Registered Professional Engineer.

0180 Maintenance Safety Plan

Within in 60 days of issuance by TxDOT of Maintenance NTP1, Maintenance Contractor shall submit to TxDOT for approval a comprehensive safety plan ("Maintenance Safety Plan") that is consistent with and expands upon the preliminary Safety and Health Plan submitted with the Proposal. The Maintenance Safety Plan shall fully describe the Maintenance Contractor's policies, plans, training programs, and work site controls to ensure the health and safety of personnel involved in the Project and the general public affected by the Project during the Maintenance Term.

Maintenance Contractor's Maintenance Safety Plan shall address procedures for immediately notifying TxDOT of all Incidents arising out of or in connection with the performance of the Maintenance Services, whether on or adjacent to the Project.

A safety manager shall be assigned to the project. This position will not be considered Key Personnel. The safety manager shall be responsible for carrying out the Maintenance Contractor's safety plan and all safety-related activities, including training and enforcement of safety operations. The safety manager shall have the authority to stop all work on the project. Upon TxDOT's approval, this position can be fulfilled by another employee of the Maintenance Contractor if the employee can meet all qualification requirements and can be available on site to the extent needed to perform the level of oversight deemed necessary for the work being performed. Requirements include:

- Roadway construction and safety enforcement experience;
- Ten (10) years of progressive safety experience, five years of which must be safety management experience on similar O&M projects;
- Designation, at or before the Effective Date, as a Construction Health and Safety Technician (CHST) by the Board of Certified Safety Professionals (BCSP), or designation as a Certified Safety & Health Official (CSHO), either of which may be substituted for two years of safety management experience;
- Completion of the OSHA #500 course – Trainer Course in OSHA Standards for Construction;
- Training and current certification for CPR and First Aid; and
- Completion of the following training sponsored by an accredited agency:
    - Work zone traffic control
    - Flaggers in work zones.

0190 Management of Communications between Maintenance Contractor and TxDOT

Within 60 days after issuance of Maintenance NTP1, Maintenance Contractor shall submit a comprehensive communications plan ("Maintenance Communications Plan") to TxDOT for

approval that is consistent with and expands upon the preliminary communications plan submitted with the Proposal.

The Maintenance Communications Plan shall describe the processes and procedures for communication of Project information between the Maintenance Contractor's organization and TxDOT and shall describe how the Maintenance Contractor's organization will respond to unexpected requests for information, communicate changes or revisions to necessary Maintenance Contractor personnel, and notify TxDOT before and after changes are made to the COMA Documents.

Maintenance Contractor shall maintain and update the Maintenance Communications Plan as the Maintenance Term progresses.

0200 Maintenance Transition Plan

At 60 days prior to the end of this Comprehensive Maintenance Agreement, or upon earlier termination, Maintenance Contractor shall submit a comprehensive Maintenance Transition Plan to TxDOT which includes the following items:

- Maintenance Transition punch list
- List and status of equipment Warranties
- Vendors' test reports
- Maintenance Contractor's test reports
- As-built drawings for Capital Asset Replacement Work
- Maintenance Records (including NBIS records)
- Copies of Warranty and service contracts
- List of spare parts purchased as part of the Maintenance Services

Maintenance Contractor shall coordinate the identification of Maintenance Transition punch list items required to be completed by Maintenance Contractor prior to maintenance transfer. Maintenance Transition punch list shall include (a) estimated completion dates, (b) responsible Party(s), and (c) items that must be completed prior to maintenance transfer. Maintenance Contractor shall be responsible to prepare (in conjunction with TxDOT), administer and complete all items on the Maintenance Transition punch list to the satisfaction of TxDOT prior to the transfer of maintenance responsibilities to TxDOT.

The Maintenance Contractor shall coordinate with TxDOT to achieve a smooth transition of Maintenance Services from and to TxDOT.

0210 Maintenance Document Management Plan

Maintenance Contractor shall establish and maintain an electronic document control system ("Maintenance Document Management Plan") to store, catalog, and retrieve all Project-related documents in a format compatible with Texas Reference Marker System used by TxDOT. Unless otherwise directed by TxDOT, record retention shall comply with the requirements of the Texas State Records Retention Schedule.

0220 Maintenance Services Deliverables Schedule

Developer recognizes the importance of the schedules for defining the time-frame for the maintenance of the Project and the achievement of the milestones, monitoring the progress of

Maintenance Services and denoting changes that occur. Within 60 days after issuance of Maintenance NTP1 and periodically thereafter as required under the COMA Documents, Maintenance Contractor shall prepare a Maintenance Services Deliverables Schedule and shall submit it to TxDOT for review and approval. Approval of the Maintenance Services Deliverables Schedule shall be a condition precedent to commencing Maintenance Services.

The Maintenance Services Deliverables Schedule shall include all Maintenance Services major activities required under the COMA Documents, in sufficient detail to monitor and evaluate progress during the Maintenance Term(s) including maintenance and interfaces with other projects, third parties and Governmental Entities.

For each activity, Maintenance Contractor shall indicate the duration (in Days) required to perform the activity and the anticipated beginning and completion date of each activity. In addition, the Maintenance Services Deliverables Schedule shall indicate the sequence of performing each activity and the logical dependencies and inter-relationships among the activities.

Maintenance Contractor shall assign the WBS structure consistently and uniformly among all similar activity types in the Maintenance Services Deliverables Schedule and shall develop the WBS with clearly identifiable linkage to the Schedule Activities.

The Maintenance Services Deliverables Schedule shall include a listing of all submittals as called out in the COMA Documents. Submittal activity durations shall include specific durations for TxDOT review and/or approval of the Maintenance Contractor's submittals as called out elsewhere in the COMA Documents.

With the exception of activities relating to Environmental Approvals by Governmental Entities, each activity depicting the Maintenance Contractor's maintenance operations shall have duration of not more than 20 Days, and not less than one Day, except as otherwise approved by TxDOT.

Maintenance Contractor shall update the approved Maintenance Services Deliverables Schedule to reflect the current status of the Project, including approved Change Orders or provide a notification of no change to the current schedule, on at least a monthly basis. Each Maintenance Services Deliverables Schedule update shall accurately reflect all activities as of the Effective Date of the updated schedule and shall include a schedule narrative report which describes the status of the Maintenance Services in detail.

Maintenance Contractor shall develop a Capital Asset Replacement Work Schedule in accordance with Section 2 of the Technical Provisions.

Maintenance Contractor shall submit a hardcopy of the schedule on full-size (11" x 17") color plot sheets, as well as an electronic version of the schedule in its native format for each submittal of the schedule along with a narrative.

Float shall not be considered as time for the exclusive use of or benefit of either TxDOT or the Maintenance Contractor but shall be considered as a jointly owned, expiring resource available to the Project and shall not be used to the financial detriment of either Party. Any method utilized to sequester Float calculations will be prohibited without prior approval of TxDOT. Any schedule, including the Capital Asset Replacement Work Schedule and all updates thereto, showing an early completion date shall show the time between the scheduled completion date and the applicable deadline as "Project Float."

0230 Inspections

Maintenance Contractor shall establish inspection procedures and a plan to implement a program of inspections of the Project to be included within the Maintenance Services Work Deliverables Schedule that:

- verifies the continuing safety of the Project for Users;
- prioritizes Category 1 Defects;
- ensures that all Category 1 Defects are identified and repaired such that the hazard to Users is mitigated within the period given in the column entitled "Category 1 Hazard Mitigation" in Attachment 1 to this Maintenance Specification;
- ensures that all Category 1 Defects are identified and permanently remedied within the period given in the column entitled "Category 1 Permanent Remedy" in Attachment 1 to this Maintenance Specification;
- identifies Category 2 Defects to be included for repair either within Maintenance Contractor's annually recurring highway maintenance and repair program or as Capital Asset Replacement Work;
- ensures that all Category 2 Defects are identified and permanently repaired within the period given in the column entitled "Category 2 Permanent Repair" in Attachment 1 to this Maintenance Specification;
- is responsive to reports or complaints received from Customer Groups;
- takes account of Incidents and Emergencies affecting the Project;
- monitors the effects of extreme weather conditions; and
- collates data to monitor performance of the Project and to establish priorities for future maintenance operations and Capital Asset Replacement Work.

Maintenance Contractor shall ensure that personnel performing inspections of road pavements and structures are certified as inspectors and/or raters in accordance with TxDOT's PMIS program or applicable certifying agency for the type of inspection being performed. Inspections, reviews, and testing performed in respect of Maintenance Services shall only be performed by personnel with appropriate training and qualifications, using appropriate equipment that is accurately calibrated and maintained in good operating condition at an AMRL (AASHTO R18, "Establishing and Implementing a Quality System for Construction Materials Testing Laboratories") accredited facility, or at a facility with comparable certification (e.g. ISO 17025, "General requirements for the competence of testing and Calibration laboratories".)

The periods stated in Attachment 1 to this Maintenance Specification under the headings of Category 1 Defects and Category 2 Defects shall be deemed to start upon the date Maintenance Contractor first obtained knowledge of, or first reasonably should have known of, the defect. For this purpose Maintenance Contractor shall be deemed to first obtain knowledge of the failure not later than the date of delivery of the initial notice to Maintenance Contractor. Maintenance Contractor shall investigate reports and complaints on the condition of the Project received from all sources. Maintenance Contractor shall record such reports and complaints as Maintenance Records together with details of all relevant inspections and actions taken in respect of Defects, including temporary protective measures and repairs.

In performing inspections to identify Category 1 and Category 2 Defects, Maintenance Contractor shall, for any Maintained Element, conform at a minimum to the inspection standards

set forth for that Maintained Element in the column entitled “Inspection and Measurement Method” on Attachment 1 to this Maintenance Specification.

Maintenance Contractor shall perform General Inspections in accordance with the MMP so that the repairs of all Defects are included in planned programs of work.

Maintenance Contractor shall record details of the manner of inspection (e.g. center Lane Closure or shoulder), the weather conditions and any other unusual features of the inspection, on O&M Records in respect of General Inspections.

Maintenance Contractor shall undertake Specialist Inspections for Maintained Elements listed in Table 1 and shall include the inspection results as Maintenance Records.

Table 1 – Specialist Inspections

Maintained Element	**Specialist Inspection**
All Maintained Elements in Element Category ‘Roadway’ in Attachment 1 to this Maintenance Specification	Annual survey of pavement condition for the entire Project, including main lanes, ramps, and frontage roads, undertaken using automated condition survey equipment to measure all necessary criteria including: ruts, skid resistance and ride quality according to the inspection and measurement methods set forth in Attachment 1 to this Maintenance Specification
All Maintained Elements in Element Category ‘Structures’ in Attachment 1 to this Maintenance Specification	Inspections and load rating calculations at the frequency specified in the COMA Documents. In addition, NBIS inspections as per FHWA regulations and at the frequency specified in FHWA regulations.

Maintenance Contractor shall submit to TxDOT non-conformance reports within seven Days of issuance and shall notify TXDOT of Nonconforming Work within two Days of discovering the Nonconforming Work. TxDOT will issue a non-conformance report if TxDOT discovers any Nonconforming Work.

0240 Maintenance Contractor Audit Inspections

Maintenance Contractor shall undertake Audit Inspections of TxDOT’s randomly selected Auditable Sections for audit purposes at least once quarterly. The Audit Inspections shall be designed such that over a period of one year the sample sections are statistically valid for 100% of the assets. Maintenance Contractor shall assess the condition of each Maintained Element using the inspection and measurement method set forth in the column entitled “Inspection and Measurement Method” in Attachment 1 to this Maintenance Specification.

Maintenance Contractor shall create a new Maintenance Record for each Maintained Element physically inspected in accordance with the column entitled “Measurement Record” on Attachment 1 to this Maintenance Specification. Audit Inspections shall be undertaken to a schedule agreed with TxDOT on Auditable Sections randomly selected by TxDOT. TxDOT shall be given the opportunity by seven days’ notice, to accompany Maintenance Contractor when it undertakes the physical inspections associated with the Audit Inspections.

0250 Asset Condition Score by Maintenance Contractor

Within ten days of the quarterly Audit Inspections, Maintenance Contractor shall assess its achievement of the Performance Requirements by self-scoring against the Targets set forth in Attachment 1 to this Maintenance Specification.

Maintenance Contractor shall report quarterly to TxDOT a mean Asset Condition Score for each Element Category, to include all of the Auditable Sections inspected in the most recent Audit Inspection. Maintenance Contractor shall also report quarterly to TxDOT an Asset Condition Score for each element in all of the Auditable Sections inspected in the most recent Audit Inspection. Maintenance Contractor shall assess mean Asset Condition Scores and Asset Condition Scores according to the measurement criteria set forth in Table 2.

Table 2 – Asset Condition Score Criteria for Element Categories
(Reported quarterly for all inspected Auditable Sections)

Score	Criteria
5	• Targets for individual Elements are almost entirely met (95% to 100% compliance with the relevant Targets for each Element within each Auditable Section), and • Is fully functional and in nearly new condition, meeting or exceeding Performance Requirement.
4	• Targets for individual Elements are substantially met (less than 95% compliance and 90% or greater compliance with the relevant Targets for each Element within each Auditable Section), and • Is functional and in good condition, meeting Performance Requirement.
3	• Targets for individual Elements are mostly met (less than 90% compliance and 75% or greater compliance with the relevant Targets for each Element within each Auditable Section), and • Is in fair condition, but suggesting need for early replacement, renewal or repair of individual Element and/or maintenance or operation improvement action to meet Performance Requirement.
2	• Targets for individual Elements are barely met (less than 75% compliance and 50% or greater compliance with the relevant Targets for each Element within each Auditable Section), or • In poor condition demonstrating need for immediate replacement, renewal or repair of individual Element and/or immediate change to MMP.
1	• Targets for individual Elements are not met (less than 50% compliance with the relevant Targets for each Element within each Auditable Section), or • In very poor condition demonstrating need for immediate replacement, renewal or repair of individual Element and/or immediate change to MMP.

Notes to Table 2:

1. The mean Asset Condition Score for any Element Category shall be the arithmetic mean of the Asset Condition Scores for all Elements in the Element Category for all of the Auditable Sections inspected in the most recent Audit Inspection. The mean Asset Condition Score for any Element Category is calculated to 1 (one) decimal point.
2. The calculation of Asset Condition Score for any Element and mean Asset Condition Score for any Element Category is demonstrated by the following example. Assume there are 52 Auditable Sections and of these 25%, or 13, are audited each quarter. If there are five Targets to be assessed for Element “pavement markings”, there are therefore 5 x 13 = 65 measurement records for pavement markings. If 62 of these measurement records meet the Target, there would be 95.38% compliance and an Asset Condition Score of five assigned for that Element.
3. Where a measurement record relates to a service measured over time or an Element that is not represented in more than 25% of Auditable Sections then the Asset Condition Score will be based on the total service and not a 5% random sample. This applies to the performance measurement of Element Categories: structures, traffic signals, Incident response, customer

service, snow and ice control, and facility buildings or other Element Categories meeting the above criteria identified following establishment of the Auditable Sections.

4. Maintenance Contractor acknowledges that mean Asset Condition Score and Asset Condition Score are mechanisms to benchmark the performance of the Project against the performance of other similar facilities and that TxDOT may, during the Term, alter the Asset Condition Score criteria to reflect Good Industry Practice.

Where specific Measurement criteria are not provided in Attachment 1 to this Maintenance Specification, Maintenance Contractor shall use Good Industry Practice to assess the Asset Condition Score against the general criteria stated in Table 2.

0260 Hazardous Materials Management Plan

Maintenance Contractor shall prepare a Hazardous Materials Management Plan (HMMP) for the safe handling, storage, treatment and/or disposal of Hazardous Materials, whether encountered at or brought onto the Project Site by the Maintenance Contractor, encountered or brought onto the Project site by a third party, or otherwise, during the Maintenance Term. Maintenance Contractor shall submit the final HMMP to TxDOT for review and approval in its good faith discretion within sixty (60) Days of Maintenance NTP1; approval of the Plan by TxDOT shall be a condition of commencement of Maintenance Services.

a) The HMMP shall provide the identification and contact information for designated responsible individuals in the management of Hazardous Materials, include procedures compliant with all applicable Environmental Laws and include, at a minimum:

b) Procedures for updating Material Safety Data Sheets (MSDS), per OSHA requirements, for all chemicals used on the Project for the Maintenance Term;

c) Designated individuals responsible for implementation of the plan;

d) Procedures for identifying and documenting potential contaminated sites which might impact Project development;

e) Procedures for mitigation of contamination during the operation and maintenance of the Project;

f) Procedures for developing a detailed Spill Response Plan for the Maintenance Term;

g) Processes for training personnel for responding to and mitigating Incidents involving contamination or waste;

h) Provisions for appropriate storage and disposal of all waste encountered or disposed of on the Project for the Maintenance Term;

i) Provisions for a Hazardous Materials training module; and

j) Procedures for preparing an Investigative Work Plan (IWP) and Site Investigative Report (SIR) in the event that Hazardous Materials are discovered during operations or maintenance activities.

The HMMP shall include provisions for making all on-Site workers aware of and able to recognize the potential Hazardous Materials to which they may be exposed, limiting Maintenance Contractor's workers' exposure to Hazardous Materials and providing all necessary personal protection equipment to protect workers from exposure. The HMMP shall require Maintenance Contractor to provide any non-Maintenance Contractor personnel who visit the Project with the appropriate personal protection equipment.

The HMMP shall require that all personnel of Maintenance Contractor-Related Entities handling Hazardous Materials be trained and certified at least to the minimum requirements established under the current guidelines of OSHA 1910.120 (HAZWOPER Training).

The HMMP shall include procedures for ensuring that all applicable certifications, licenses, authorizations and Governmental Approvals for Maintenance Contractor personnel handling Hazardous Materials are current and valid through the duration of the Work.

0270 Environmental Compliance and Mitigation Plan

Maintenance Contractor shall prepare an Environmental Compliance and Mitigation Plan (ECMP) to document and fully detail compliance strategies and procedures to be employed in accordance with the requirements of applicable Environmental Laws and Environmental Approvals. Maintenance Contractor shall submit the final ECMP to TxDOT for review and approval in its good faith discretion within sixty (60) Days of Maintenance NTP1; approval of the Plan by TxDOT shall be a condition of commencement of Maintenance Services. The ECMP shall provide, at a minimum:

a) Procedures for maintaining the environmental commitments required to verify that any discharge from the Project into a sanitary sewer system complies with appropriate codes and standards of the sanitary sewer owner;

b) Procedures for identifying and mitigating any potential traffic noise caused by conducting Maintenance Services;

c) Procedures for providing all other environmental monitoring within the Project area and submitting all necessary environmental documentation and monitoring reports to the appropriate Governmental Entities and, when applicable, to TxDOT, to the extent necessary to maintain compliance with applicable Environmental Approvals; and

d) Procedures for training personnel to avoid or take appropriate action to minimize environmental impacts caused by conducting Maintenance Services.

Maintenance Contractor shall meet the environmental requirements of Section 4 of the Technical Provisions during the performance of Capital Asset Replacement Work activities.

TRAFFIC MANAGEMENT

1100 General Requirements

Throughout the Maintenance Term, Maintenance Contractor shall conform with the requirements set forth herein, and shall provide for the safe and efficient movement of people, goods, and services, through and around the Project, while minimizing negative impacts to Users, residents, and businesses.

While planning and carrying out Maintenance Services, Maintenance Contractor shall take into account the restrictions (if any) set forth in Attachment 6 to this Maintenance Specification and shall coordinate its Traffic Management Plan (TMP) with the traffic management to be performed by others to minimize disruption to Users of the Project.

1120 Traffic Management and Control Plans

Within 60 days after issuance of Maintenance NTP1, Maintenance Contractor shall submit to TxDOT for approval a comprehensive traffic plan ("Traffic Management Plan" or "TMP") that is consistent with and expands upon the preliminary Traffic Management Plan submitted with the Proposal. The TMP shall be implemented, maintained and used throughout the Maintenance Term. At a minimum, the TMP shall include the following:

- Descriptions of the qualifications and duties of the traffic engineering manager, traffic control coordinator, and other personnel with traffic control responsibilities
- Procedures to identify and incorporate the needs of transit operators, Utility Owners, Governmental Entities, local governmental agencies, Emergency Service providers, school districts, business owners, and other related Users, Customer Groups or entities in the Project corridor and surrounding affected areas
- Procedures for obtaining acceptance of detours, road and Lane Closures and other traffic pattern modifications from applicable Governmental Entities, stakeholders, and adjacent sections of roads and adjacent landowners, and implementing, maintaining and removing those modifications
- Procedures for installation, maintenance and removal of interim signing and the corresponding handling of permanent signing during maintenance operations
- Procedures for installation, maintenance, replacement and removal of traffic control devices, including pavement markings and traffic barriers, if used
- Procedures and process for the safe ingress and egress of construction vehicles in the work zone
- Provisions to provide continuous access to established truck routes and Hazardous Material (HazMat) routes, and to provide suitable detour routes, including obtaining any approvals required by the appropriate Governmental Entities for these uses
- Procedures to modify plans as needed to adapt to changing Project circumstances
- Procedures to communicate TMP information to Maintenance Contractor's public information personnel and notify the public of maintenance of traffic issues
- Descriptions of contact methods, personnel available, and response times for any Emergency conditions requiring TxDOT attention during off-hours.

Within 30 days after TxDOT's approval of the Traffic Management Plan, Maintenance Contractor shall prepare and submit, for TxDOT's review, traffic control plans as described herein. Each traffic control plan shall be submitted to TxDOT for review a minimum of 10 Days prior to implementation.

Maintenance Contractor shall use the procedures in the TMP and the standards of the TMUTCD to develop detailed traffic control plans that provide for all Maintenance Services, as well as all required switching procedures. The traffic control plans shall include details for all detours, traffic control devices, striping, and signage applicable to each Maintenance Activity event. Information included in the traffic control plans shall be of sufficient detail to allow verification of design criteria and safety requirements, including typical sections, alignment, striping layout, drop off conditions, and temporary drainage. The traffic control plans shall clearly designate all temporary reductions in speed limits. Changes to posted speed limits will not be allowed unless specific prior approval is granted by TxDOT.

1130 Traffic Operation Restrictions

Maintenance Contractor shall keep the number of Lane Closures to an absolute minimum and shall keep each Lane Closure to the shortest time necessary for safe and efficient operations and in accordance with Attachment 6. If Maintenance Contractor violates such requirements and restrictions, Maintenance Contractor shall be subject to liquidated damages in accordance with Section 12.4.1 of the COMA.

Maintenance Contractor shall ensure that opposing traffic on a normally divided roadway shall be separated with appropriate traffic control devices, shall maintain signing continuity within or intersection the project at all times, and shall ensure all streets and intersections remain open to traffic to the greatest extent possible.

Maintenance Contractor shall maintain access to all adjacent streets and shall provide for ingress and egress to public and private properties at all times.

1140 Construction Requirements

Construction shall be in accordance with Maintenance Contractor's TMP, the manufacturer's directions or recommendations where applicable, and the applicable provisions of the TMUTCD. If at any time TxDOT determines Maintenance Contractor's traffic control operations do not meet the intent of the TMP or any specific traffic control plan, Maintenance Contractor shall immediately revise or discontinue such operations to correct the deficient conditions

Maintenance Contractor shall provide TxDOT the names of the traffic control coordinator and support personnel, and the phone number(s) where they can be reached 24 hours per day, seven days per week.

Maintenance Contractor shall maintain existing bicycle and pedestrian access and mobility with the frontage roads and across all cross streets. Maintenance Contractor shall maintain Access to existing transit stop locations during construction or reasonable alternative locations shall be provided.

Maintenance Contractor shall maintain all detours in a safe and traversable condition. Maintenance Contractor shall provide a pavement transition at all detour interfaces, suitable for the posted speed of the section.

1150 Public Information and Communications

It is vital to the success of the Project that TxDOT and the Maintenance Contractor gain and maintain public support. The public will better support TxDOT and the Maintenance Contractor if they are kept abreast of Project information in a timely manner, are notified in advance of potential impacts, have an opportunity to identify issues and recommend solutions, receive timely and appropriate feedback from the Maintenance Contractor, and perceive a high quality, well executed communications plan for keeping them informed, engaged, and educated.

Maintenance Contractor shall provide information within 24 hours of a request by TxDOT, such that TxDOT may communicate such information to interested parties.

Maintenance Contractor shall meet the requirements of Section 3 of the Technical Provisions during the performance of Capital Asset Replacement Work activities.

1160 Additional Requirements

1161 Rail

Should the Project cross a railroad right of way owned by an operating railroad, Maintenance Contractor shall coordinate the Maintenance Services with the operating railroad and shall be responsible for obtaining the required approvals, permits, and agreements as required for the Maintenance Services, including any railroad related Maintenance Services.

Whenever an agreement for construction, maintenance and use of railroad right-of-way between the operating railroad and TxDOT is required, Maintenance Contractor shall prepare all the documentation required to obtain the agreement, including preparation of the agreement application on behalf of TxDOT, the drawings and specifications, making necessary

modifications as required, and preparation of the agreement. Maintenance Contractor shall submit the draft agreement to TxDOT for transmittal to the operating railroad. After all comments have been incorporated or satisfactorily resolved by Maintenance Contractor, railroad or TxDOT, Maintenance Contractor shall submit a complete and final agreement to TxDOT for execution.

Maintenance Contractor shall arrange with the operating railroad for railroad flagging as required. Maintenance Contractor shall comply with the operating railroad's requirements for contractor safety training prior to performing Maintenance Services or other activities on the operating railroad's property.

Maintenance Contractor shall cooperate and coordinate with all operating railroads for access by the operating railroad and/or their agents to the rail right-of-way as necessary for rail maintenance and operations activities.

Maintenance Contractor shall procure and maintain, prior to working adjacent to and entry upon operating railroad property, insurance policies naming TxDOT, TxDOT's Consultants, and railroad as named insured. Maintenance Contractor shall obtain insurance per Exhibit 10 of the COMA Documents. All insurance policies shall be in a form acceptable to the operating railroad. Copies of all insurance policies shall be submitted to TxDOT prior to any entry by the Maintenance Contractor upon operating railroad property.

Maintenance Contractor shall comply with all construction requirements and specifications set forth by the operating railroad.

Maintenance Contractor shall be responsible for scheduling the work to be completed by operating railroad as well as the work to be completed by its own forces. Maintenance Contractor shall be responsible for all costs associated with the railroad/transit force account work.

1162 Aesthetics and Landscaping

TxDOT and Maintenance Contractor acknowledge that plant establishment requirements and obligations are not included within the Maintenance Services, but are part of the DB Contractor's obligations under the Design-Build Agreement for a period of 3 years after the date of Final Acceptance. However, if a structural or natural failure of the embankment or cut slope occurs in a landscaped area after the 3 year time period expires, the Maintenance Contractor shall be responsible to perform plant establishment activities for 90 calendar days in accordance with Item 192 (Landscape Planting) and Item 193 (Landscape Establishment) of the 2004 TxDOT Standard Specifications for Construction of Highways, Streets, and Bridges.

Texas Department of Transportation

COMPREHENSIVE MAINTENANCE AGREEMENT

FOR

LOOP 375 - BORDER HIGHWAY WEST EXTENSION

PROJECT

Design-Build Project

EXHIBIT 2
ATTACHMENTS 1-7

MARCH 14, 2014

ATTACHMENT 1: PERFORMANCE AND MEASUREMENT TABLE BASELINE

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
1) ROADWAY								
						Unless stated otherwise, measurements shall be conducted using procedures, techniques, and measuring equipment consistent with TxDOT's Pavement Management Information System Rater's Manual. Unless otherwise stated, pavement performance measurement records relate to 0.5-mile sections as described in the Pavement Management Information System Rater's Manual.		
1.1	Obstructions and debris	Roadway and clear zone free from obstructions and debris	2 hrs	N/A	N/A	Visual Inspection	Number of obstructions and debris	Nil
1.2	Pavement	All roadways have a smooth and quiet surface course (including bridge decks, covers, gratings, frames and boxes) with adequate skid resistance and free from Defects.	24 hrs	28 days	6 months	**a) Pavement Condition Score** Measurements and inspections necessary to derive Pavement Condition Score	Pavement Condition Score for 80% of Auditable Sections exceeding: • Mainlanes and ramps - 90 • Frontage roads – 80 Pavement Condition Score of Auditable Sections • Mainlanes and ramps - 80 • Frontage roads - 70	 100% 100% 100% 100%
		All roadways have a smooth and quiet surface course (including bridge decks, covers, gratings, frames and boxes) with adequate skid resistance and free from Defects.	24 hrs	28 days	6 months	**b) Ruts – Mainlanes, shoulders & ramps** Depth as measured using an automated device in compliance with TxDOT Standards.	Perecentage of wheel path length with ruts greater than ¼" in depth in each Auditable Section • Mainlanes, shoulders and ramps - 3% • Frontage roads - 10%	 Nil Nil
						10ft straight edge used to measure rut depth for localized areas.	Depth of rut at any location greater than ½"	Nil
		All roadways have a smooth and quiet surface course (including bridge decks, covers, gratings, frames and boxes) with adequate skid resistance and free from Defects.	24 hrs	28 days	6 months	**c) Ride quality** Measurement of International Roughness Index (IRI) according to TxDOT standard Tex-1001-S, Operating Inertial Profilers and Evaluating Pavement Profiles	For 80% of all Auditable Sections measured, IRI throughout 98% of each Auditable Section is less than or equal to: • Mainlanes, ramps - 95" per mile**	 100%

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
1.2 Cont.						** To allow for measurement bias, an adjustment of -10 (minus ten) is made to IRI measurements for concrete pavements before assessing threshold compliance.	• Frontage roads - 120" per mile**	100%
							IRI throughout 98% of each Auditable Section is less than or equal to:	
							• Mainlanes, ramps - 120" per mile**	100%
							• Frontage roads - 150" per mile**	100%
						(Renewal Work and new construction subject to construction quality standards)	Mainlanes, ramps, 0.1 mile average - 150" per mile**	100%
							Frontage roads, 0.1 mile average - 180" per mile**	100%
							IRI measured throughout 98% of each lane containing a bridge deck in any Auditable Section, 0.1 mile average - 200" per mile**	100%
						10-ft straightedge used to measure discontinuities	Individual discontinuities greater than 1/4”	Nil
		All roadways have a smooth and quiet surface course (including bridge decks, covers, gratings, frames and boxes) with adequate skid resistance and free from Defects.	24 hrs	28 days	6 months	**d) Failures** Instances of failures exceeding the failure criteria set forth in the TxDOT PMIS Rater’s Manual, including potholes, base failures, punchouts and jointed concrete pavement failures	Occurrence of any failure	Nil
		All roadways have a smooth and quiet surface course (including bridge decks, covers, gratings, frames and boxes) with adequate skid resistance and free from Defects.	24 hrs	28 days	6 months	**e) Edge drop-offs** Physical measurement of edge drop-off level compared to adjacent surface	Number of instances of edge drop-off greater than 2"	Nil

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
1.2 Cont.		All roadways have a smooth and quiet surface course (including bridge decks, covers, gratings, frames and boxes) with adequate skid resistance and free from Defects.	24 hrs	28 days	6 months	**f) Skid resistance** ASTM E 274 Standard Test Method for Skid Resistance Testing of Paved Surfaces at 50 MPH using a full scale smooth tire meeting the requirements of ASTM E 524	• Auditable Sections with skid numbers for 0.5-mile section of mainlanes, shoulders and ramps exceeding 30 and for which investigations as to potential risk of skidding accidents and appropriate remedial actions have been taken. • Auditable Sections with skid numbers for 0.5-mile section of frontage roads exceeding 30 and for which investigations as to potential risk of skidding accidents and appropriate remedial actions have been taken. • When the skid number is below 25 and/or when required by the Wet Weather Accident Reduction Program, areas categorized as high risk, Maintenance Contractor shall perform a site investigation and perform required corrective action.	100% 100% 100%
		Road users warned of potential skidding hazards	24 hrs	7days	N/A		Instances where road users are warned of a potential skidding hazard where remedial action is identified.	100%
1.3	Crossovers and other paved areas	Crossovers and other paved areas are free of Defects	24 hrs	28 days	6 months	**a) Potholes**	Number of potholes of low severity or higher	Nil
			24 hrs	28 days	6 months	**b) Base failures**	Number of base failures of low severity or higher	Nil
1.4	Joints in concrete	Joints in concrete paving are sealed and watertight	24 hrs	28 days	6 months	Visual inspection of joints	Length of unsealed joints greater than ¼"	Nil
		Longitudinal joint separation				Measurement of joint width and level difference of two sides of joints	Joint width more than 1" or faulting more than ¼”	Nil
1.5	Curbs	Curbs are free of defects	24 hrs	28 days	6 months	Visual inspection	Length of curb out of alignment	Nil

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
1.6	Maintenance/ Access Roads	Maintenance/access roads are free of defects	24 hrs	28 days	6 months	Crown: Flat A shape or super-elevation with 4% cross slopes maintained to minimize ponding	Cross slope less than 3% or more than 6%	Nil
						Shoulder: Maintain slope away from the travel way and shoulder flush with travel way	Shoulder cross slope less than travel way cross slope; shoulder lower or higher than travel way	Nil
						Ditch: Maintain size and shape of ditch for proper drainage	Sides of ditches slumping or eroding, or obstructed by debris	Nil
						Ruts/potholes: Depth as measured using an automated device in compliance with TxDOT standards	Depth of ruts or potholes at any location greater than 1”	Nil
						Subgrade: Identify and repair any subgrade failures	Locations where subgrade failure is evident	Nil
2) DRAINAGE								
2.1	Pipes and Channels	Each element of the drainage system is maintained in its proper function by cleaning, clearing and/or emptying as appropriate from the point at which water drains from the travel way to the outfall or drainage way.	24 hrs	28 days	6 months	Visual inspection supplemented by CCTV where required to inspect buried pipe work	Length of pipe or channel in feet with less than 90% of cross sectional clear area, calculated as the arithmetic mean of the clear cross-sectional areas of individual 10 feet lengths of pipes and channels in each Auditable Section.	Nil
2.2	Drainage treatment devices	Drainage treatment and balancing systems, flow and spillage control devices function correctly and their location and means of operation is recorded adequately to permit their correct operation on Emergency.	24 hrs	28 days	6 months	Visual inspection	Number of devices functioning correctly with means of operation displayed	100%
2.3	Travel Way	The travel way is free from water to the extent that such water would represent a hazard by virtue of its position and depth.	24 hrs	28 days	6 months	Visual inspection of water on surface	Number of instances of hazardous water build-up	Nil
2.4	Discharge systems	Surface water discharge systems perform their proper function and discharge to groundwater and waterways complies with the relevant legislation and permits.	24 hrs	28 days	6 months	Visual inspection and records	Auditable Sections with surface water discharge systems performing their proper function and discharging in compliance with the relevant legislation and permits.	100%

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
2.5	Protected Species	Named species and habitats are protected.	24 hrs	28 days	6 months	Visual inspection	Auditable Sections with named species and habitats with protection of these named species and habitats	100%
3) STRUCTURES								
3.1	Structures having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or springlines of arches or extreme ends of openings or multiple boxes	Substructures and superstructures are free of: • graffiti	24 hrs	28 days	6 months	Inspection and assessment in accordance with the requirements of federal National Bridge Inspection Standards (NBIS) of the Code of Federal Regulations, 23 Highways – Part 650, the TxDOT Bridge Inspection Manual, and the Federal Administration's Bridge Inspector's Reference Manual.	Records as required in the TxDOT Bridge Inspection Manual	
		• undesirable vegetation					Occurrence of condition rating, in accordance with the TxDOT Bridge Inspection Manual, below seven for any deck, superstructure or substructure	Nil
		• debris and bird droppings					Auditable Sections with structure components with condition states of one	100%
		• blocked drains, weep pipes manholes and chambers • blocked drainage holes in structural components • defects in joint sealants • defects in pedestrian protection measure • scour damage • corrosion of rebar • paint system failures • impact damage						

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
3.2	Structure components	i) Expansion joints are free of: • dirt debris and vegetation • defects in drainage systems • loose nuts and bolts • defects in gaskets ii) The deck drainage system is free of all and operates as intended.	24 hrs	28 days	6 months	Inspection and assessment in accordance with the requirements of federal National Bridge Inspection Standards (NBIS) of the Code of Federal Regulations, 23 Highways – Part 650, the TxDOT Bridge inspection Manual, and the Federal Administration's Bridge Inspector's Reference Manual.	Records as required in the TxDOT Bridge Inspection Manual Occurrence of condition rating, in accordance with the TxDOT Bridge Inspection Manual, below seven for any deck, superstructure or substructure Auditable Sections with structure components with condition states of one	Nil 100%
		iii) Parapets are free of: • loose nuts or bolts • blockages of hollow section drain holes • graffiti • vegetation • accident damage iv) Bearings and bearing shelves are clean. v) Sliding and roller surfaces are clean and greased to ensure satisfactory performance. Additional advice contained in bearing manufacturers' instructions in the Structure Maintenance Manual is followed. Special finishes are clean and perform to the appropriate standards.						

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
3.2 Cont.		vii) All non-structural items such as hoists and electrical fixings, operate correctly, are clean and lubricated as appropriate, in accordance with the manufacturer's recommendations and certification of lifting devices is maintained.						
3.3	Non-bridge class culverts	Non-bridge-class culverts are free of: • vegetation and debris and silt • defects in sealant to movement joints	24 hrs	28 days	6 months	Visual inspection	Number of non-bridge class culverts with vegetation, debris and silt in each Auditable Section Number of non-bridge class culverts with defects in sealant and movement joints in each Auditable Section	Nil Nil
		• scour damage					Number of non-bridge class culverts with scour damage in each Auditable Section	Nil
3.4	Gantries and high masts	Sign signal gantries, high masts are structurally sound and free of: • loose nuts and bolts • defects in surface protection systems • graffiti	24 hrs	28 days	6 months	Visual inspection	Number of gantries and high masts with loose assemblies in each Auditable Section Number of gantries and high masts with defects in surface protection in each Auditable Section	Nil Nil
3.5	Load ratings	All structures maintain the design load capacity.	24 hrs	28 days	6 months	Load rating calculations in accordance with the Manual for Bridge Evaluation and the TxDOT Bridge Inspection Manual Load restriction requirements as per the TxDOT Bridge Inspection Manual	Number of structures with load restrictions for Texas legal loads (including legally permitted vehicles) in each Auditable Section	Nil

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
3.6	Access points	All hatches and points of access have fully operational and lockable entryways.	24 hrs	28 days	6 months	Visual Inspection	Number with defects in locks or entryways	Nil
3.7	Mechanically Stabilized Earth and Retaining Walls	Mechanically Stabilized Earth and Retaining Walls free of: • blocked weep holes • undesirable vegetation • defects in joint sealants • defects in pedestrian protection • scour damage • corrosion of reinforcing bars • paint system failure • concrete spalling • impact damage	24 hrs	28 days	6 months	Inspection and assessment in accordance with the requirements of federal Nations Bridge Inspection Standards (NBIS) of the Code of Federal Regulations, 23 Highways - Part 650, the TxDOT Bridge Inspection Manual and the Federal Highway Administration's Bridge Inspector's Reference Manual.	Records as required in the TxDOT Bridge Inspection Manual	100%
		Parapets free of: • loose nuts and bolts • blockage of drain holes • undesirable vegetation • impact damage • concrete spalling						
4) PAVEMENT MARKINGS, OBJECT MARKERS, BARRIER MARKERS AND DELINEATORS								
4.1	Pavement markings	Pavement markings are: • clean and visible during the day and at night • whole and complete and of the correct color, type, width and length • placed to meet the TMUTCD and TxDOT's Pavement Marking Standard Sheets	24 hrs	28 days	6 months	a) Markings - General Portable retroreflectometer, which uses 30 meter geometry, meeting the requirements described in ASTM E 1710	Percentage of total length of pavement marking in each auditable section meeting the minimum retroreflectivity 175 med/sqm/lx for white Percentage of total length of pavement marking in each auditable section meeting the minimum retroreflectivity 125 med/sqm/lx for white	100% 100%
4.1 Cont.						Physical measurement	Length of pavement marking in each	Nil

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
							auditable section with more than 5% loss of area of material at any point	
							Length of pavement marking in each auditable section with spread more than 10% of specified dimensions.	Nil
						b) Profile Markings		
						Visual inspection	Percentage of total length of pavement marking in each auditable section performing its intended function and compliant with relevant regulations	100%
4.2	Raised reflective markers	Raised reflective pavement markers are:	24 hrs	28 days	6 months	Visual inspection	Number of markers associated with road markings that are ineffective in any 10 consecutive markers. (Ineffective includes missing, damaged, settled or sunk)	Nil
		• clean and clearly visible					A minimum of four markers are visible at 80' spacing when viewed under low beam headlights.	100%
		• of the correct color and type					Uniformity (replacement raised reflective pavement markers have equivalent physical and performance characteristics to adjacent markers).	100%
		• reflective or retroreflective in accordance with TxDOT standards • correctly located, aligned and at the correct level • are firmly fixed • are in a condition that will ensure that they remain at the correct level.						
4.3	Delineators & Markers	Object markers, mail box markers and delineators are: • clean and visible	24 hrs	28 days	6 months	Visual inspection	Number of object markers or delineators in each Auditable Section that is defective or missing	Nil
4.3 Cont.		• of the correct color and type						

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
		• legible and reflective • straight and vertical						
5) GUARDRAILS, SAFETY BARRIERS AND IMPACT ATTENUATORS								
5.1	Guardrails and safety barriers	All guardrails, safety barriers, concrete barriers, etc. are maintained free of Defects. They are appropriately placed and correctly installed at the correct height and distance from roadway or obstacles. Installation and repairs shall be carried out in accordance with the requirements of NCHRP 350 standards.	24 hrs	28 days	6 months	Visual inspection	Auditable Sections with all guard rails and safety barriers appropriately placed and correction installed Auditable Sections with all guard rails and safety barriers free from defects Auditable Sections with all guard rails and safety barriers at correct heights	100% 100% 100%
							Auditable Sections with all guard rails and safety barriers at correct distances from roadway obstacles	100%
5.2	Impact attenuators	All impact attenuators are appropriately placed and correctly installed	24 hrs	7 days	6 months	Visual inspection	Auditable Sections will all impact attenuators appropriately placed and correctly installed.	100%
6) TRAFFIC SIGNS								
6.1	General - All Signs	i) Signs are clean, correctly located, clearly visible, legible, reflective, at the correct height and free from structural and electrical defects ii) Identification markers are provided, correctly located, visible, clean and legible iii) Sign mounting posts are vertical, structurally sound and rust free	24 hrs	28 days	6 months	**a) Retroreflectivity** Determination of Coefficient of retro-reflectivity **b) Face damage** Visual inspection **c) Placement** Visual inspection	Number of signs with actual reflectivity below the requirements of TxDOT's TMUTCD in each auditable section Number of signs in each auditable section with face damage greater than 5% of area All signs in each auditable section are placed in accordance with TxDOT's Sign Crew Field Book including not twisted or leaning	Nil Nil
6.1 Cont.		iv) All break-away sign mounts are clear of silt or other debris that could						

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
		impede break-away features and shall have correct stub heights v) Obsolete and redundant signs are removed or replaced as appropriate vi) Visibility distances meet the stated requirements vii) Sign information is of the correct size, location, type and wording to meet its intended purpose and any statutory requirements viii) All structures and elements of the signing system are kept clean and free from debris and have clear access provided.				**d) Obsolete signs** Visual inspection **e) Sign Information** Visual inspection	Number of obsolete signs in each auditable section All sign information in each auditable section is of the correct size, location, type and wording to meet its intended purpose	100% 100%
		ix) All replacement and repair materials and equipment are in accordance with the requirements of the TMUTCD x) Dynamic message signs are in an operational condition				**f) Dynamic Message Signs** Visual inspection	All dynamic message signs in each auditable section are fully functioning	100%
6.2	General - Safety critical signs	Requirements as 6.1, Plus: "Stop," "Yield," "Do Not Enter," "One Way" and "Wrong Way" signs are clean legible and undamaged.	2hrs	1 week	6 months	Visual inspection	Number of damaged Safety critical signs in each auditable section	Nil
7) TRAFFIC SIGNALS								
7.1	General	i) Traffic Signals and their associated equipment are: • clean and visible • correctly aligned and operational • free from damage caused by accident or vandalism	2hrs	24 hrs	6 months	**a) General condition** Visual inspection **b) Damage** Visual inspection **c) Signal timing** Timed measurements **d) Contingency plans** Records Review	All Signals in each auditable section are clean and visible All Signals in each auditable section are undamaged All Installations in each auditable section have correct signal timings Full contingency plans are in place in each auditable section	100% 100% 100% 100%
7.1 Cont.		• correctly aligned and operational						

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
		ii) Signal timing and operation is correct iii) Contingency plans are in place to rectify Category 1 defects not immediately repairable to assure alternative traffic control is provided during a period of failure						
7.2	Soundness	Traffic signals are structurally and electrically sound	24 hrs	28 days	6 months	**a) Structural soundness** Visual inspection **b) Electrical soundness** Testing to meet NEC regulations	Inspection records showing safe installation and maintenance in each auditable section	100%
7.3	Identification marking	Signals have identification markers and the telephone number for reporting faults are correctly located, clearly visible, clean and legible	N/A	28 days	6 months	Visual inspection	Inspection records showing identification markers and other information are easily readable in each auditable section	100%
7.4	Pedestrian Elements and Vehicle Detectors	All pedestrian elements and vehicle detectors are correctly positioned and fully functional at all times	24 hrs	28 days	6 months	Visual inspection	Inspection records showing compliance with requirements for positioning and functionality in each auditable section with pedestrian elements and vehicle detectors.	100%
8) LIGHTING								
8.1	Roadway Lighting – General	i) All lighting is free from defects and provides acceptable uniform lighting quality ii) Lanterns are clean and correctly positioned iii) Lighting units are free from accidental damage or vandalism iv) Columns are upright, correctly founded, visually acceptable and structurally sound	24 hrs	28 days	6 months	**a) Mainlane lights operable** Night time inspection or automated logs **b) Mainlane lights out of action** Night time inspection or automated logs	Auditable Sections with 10 or more lights with more than 90% of lights functioning correctly / Auditable Sections with less than 10 lights with no more than 1 light not functioning correctly Number of instances of more than two consecutive lights out of action in each auditable section	100% Nil
8.2	Sign Lighting	Sign lighting is fully operational	24 hrs	28 days	6 months	Night time inspection or automated logs	Number of instances of more than one bulb per sign not working in each	Nil

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
							auditable section	
8.3	Electrical Supply	Electricity supply, feeder pillars, cabinets, switches and fittings are electrically, mechanically and structurally sound and functioning	24 hrs	7 days	1 month	Testing to meet NEC regulations, visual inspection	Inspection records showing safe installation and maintenance in each auditable section	100%
8.4	Access Panels	All access panels in place at all times.	24 hrs	7 days	1 month	Visual Inspection	Number of instances of missing access panels in each auditable section	Nil
8.5	High Mast Lighting	i) All high mast luminaries functioning on each pole ii) All obstruction lights are present and working (if required) iii) Compartment door is secure with all bolts in place iv) All winch and safety equipment is correctly functioning and maintained without rusting or corrosion (for structural requirements refer to Element Category 3)	24 hrs	48 hrs	1 month	Yearly inspection and night time inspections or automated logs	Number of instances of two or more lamps not working per high mast pole in each auditable section Number of other high mast lighting defects identified in each auditable section	Nil Nil
9) FENCES, WALLS AND SOUND ABATEMENT								
9.1	Design and Location	Fences and walls act as designed and serve the purpose for which they were intended	24 hrs	28 days	6 months	Visual Inspection	Inspection records for fences and walls showing compliance with fence and wall requirements in each auditable section	100%
9.2	Construction	Integrity and structural condition of the fence is maintained	24 hrs	28 days	6 months	Structural assessment if visual inspection warrants	Inspection records for fences and walls showing compliance with fence and wall requirements in each auditable section	100%

10) ROADSIDE MANAGEMENT

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
10.1	Vegetated Areas - Except landscaped areas - General	Vegetation is maintained so that: i) Height of grass and weeds is kept within the limits described for urban and rural areas. Mowing begins before vegetation reaches the maximum height. ii) Spot mowing at intersections, ramps or other areas maintains visibility of appurtenances and sight distance. iii) Grass or vegetation does not encroach into or on paved shoulders, main lanes, sidewalks, islands, riprap, traffic barrier or curbs. iv) A herbicide program is undertaken in accordance with the TxDOT Herbicide Manual to control noxious weeds and to eliminate grass in pavement or concrete. v) A full width mowing cycle is completed after the first frost.	24 hrs	7 days	28 days	**a) Urban areas** Physical measurement of height of grass and weeds **b) Rural areas** Physical measurement of height of grass and weeds **c) Encroachment** Visual inspection of instances of encroachment of vegetation **d) Wildflowers** Visual Inspection with audit of process. **e) Sight lines** Visual inspection	Individual measurement areas in each auditable section to have 95% of grass and weeds between 5” and 18” in height. Individual measurement areas in each auditable section to have 95% of height of grass and weeds between 5” and 30” in height. Number of occurrences of vegetation encroachment in each auditable section Adherence to vegetation management manuals Number of instances of impairment of sight lines or sight distance to signs in each auditable section	100% 100% Nil 100% Nil
10.2	Landscaped Areas	i) All landscaped areas are maintained to their originally constructed condition. Landscaped areas are as designated in the plans. ii) Mowing, litter pickup, irrigation system maintenance and operation, plant maintenance, pruning, insect, disease and pest control, fertilization, mulching, bed maintenance, watering is undertaken as per MMP. iii) The height of grass and weeds is kept between 2” and 8”. Mowing begins before vegetation reaches 8 in.	24 hrs	7 days	28 days	Visual inspection	Inspection records showing compliance with requirements for landscaping in each auditable section.	100%
10.1		iv) Damaged or dead vegetation is						

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
Cont.		replaced.						
10.3	Fire Hazards	Fire hazards are controlled	24 hrs	7 days	28 days	Visual inspection	Number of instances of dry brush or vegetation forming fire hazard in each auditable section.	Nil
10.4	Trees, brush and ornamentals	i) Trees, brush and ornamentals on the right of way, except in established no mow areas, are trimmed in accordance with TxDOT standards. ii) Trees, brush and ornamentals are trimmed to insure they do not interfere with vehicles or sight distance, or inhibit the visibility of signs. iii) Dead trees, brush, ornamentals and branches are removed. Potentially dangerous trees or limbs are removed. iv) All undesirable trees and vegetation are removed. Diseased trees or limbs are treated or removed by licensed contractors.	24 hrs	7 days	28 days	Visual inspection	Inspection records showing compliance with requirements for trees, brush and ornamentals in each auditable section.	100%
10.5	Wetlands	Wetlands are managed in accordance with the permit requirements.	24 hrs	7 days	28 days	Visual inspection, assessment of permit issuers	Number of instances of permit requirements not met in each auditable section	Nil
11) REST AREAS AND PICNIC AREAS (Not Used)								
12) EARTHWORKS, EMBANKMENTS AND CUTTINGS								
12.1	Slope Failure	All structural or natural failures of the embankment and cut slopes of the Project are repaired	24 hrs	28 days	6 months	Visual inspection by geotechnical specialist and further tests as recommended by the specialist	Number of recorded instances of slope failure in each Auditable Section	Nil
12.2	Slopes - General	Slopes are maintained in general conformance to the original graded cross-sections, the replacement of landscaping materials, reseeding and re-vegetation for erosion control purposes and removal and disposal of all eroded materials from the roadway and shoulders	24 hrs	28 days	6 months	Visual inspection by geotechnical specialist and further tests as recommended by the specialist	Inspection records showing compliance with requirements for slopes in each auditable section.	100%

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
13) ITS EQUIPMENT								
13.1	ITS Equipment - Maintenance	All ITS equipment is fully functional and housing is functioning and free of defects. i) All equipment and cabinet identification numbers are visible, sites are well drained and access is clear. ii) Steps, handrails and accesses are kept in a good condition. iii) Access to all communication hubs, ground boxes, cabinets and sites is clear. iv) All drainage is operational and all external fixtures and fittings are in a satisfactory condition. v) All communications cable markers, cable joint markers and duct markers are visible and missing markers are replaced. vi) Backup power supply system is available at all times	24 hrs	14 days	1 month	Visual Inspection	Inspection records showing compliance with requirements for maintenance of ITS equipment in each auditable section.	100%
13.2	Dynamic Message Sign Equipment	Dynamic Message Signs are free from faults such as: i) Any signal displaying a message which is deemed to be a safety hazard. ii) Failure of system to clear sign settings when appropriate. iii) 2 or more contiguous sign failures that prevent control office setting strategic diversions. iv) Signs displaying an incorrect message.	2 hrs	24 hrs	14 days	Defect measurement dependent on equipment	Inspection records showing compliance with requirements for Dynamic Message Signs in each auditable section	100%

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
13.3	CCTV Equipment	CCTV Systems are free from serious faults that significantly limit the availability of the operators to monitor the area network, such as: i) Failure of CCTV Systems to provide control offices with access and control of CCTV images. ii) Failure of a CCTV camera or its video transmission system. iii) Failure of a Pan / Tilt unit or its control system. iv) Moisture ingress onto CCTV camera lens. v) Faults that result in significant degradation of CCTV images.	2 hrs	24 hrs	14 days	Defect measurement dependent on equipment	Inspection records showing compliance with requirements for CCTV equipment in each auditable section	100%
13.4	Vehicle Detection Equipment	All equipment free of defects and operational problems such as: i) Inoperable loops. ii) Malfunctioning camera controllers.	2 hrs	24 hrs	1 month	Defect measurement dependent on equipment Traffic Detector Loops: Loop circuit's inductance to be > 50 and < 1,000 micro henries. Insulation resistance to be > 50 meg ohms.	Inspection records showing compliance with requirements for vehicle detection equipment in each auditable section	100%
14) TOLLING Facilities and Buildings (Not Used)								
15) AMENITY								
15.1	Graffiti	Graffiti is removed in a manner and using materials that restore the surface to a like appearance similar to adjoining surface.s	24 hrs	N/A	N/A	Visual Inspection	Inspection records showing compliance with requirements regarding grafitti in each auditable section	100%
16) SNOW AND ICE CONTROL								
16.1	Travel lanes	Maintain travel way free from snow and ice.	2 hrs	N/A	N/A	Maximum 1hr response time to complete manning and loading of spreading vehicles.	Inspection records showing compliance with requirements for snow and ice control in each auditable section	100%

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
16.1 Cont.						Maximum 2hrs from departure from loading point to complete treatment and return to loading point. Maximum 1hr response time for snow and ice clearance vehicles to depart from base.		
16.2	Weather Forecasting	Weather forecast information is obtained and assessed and appropriate precautionary treatment is carried out to prevent ice forming on the travel way.	2 hrs	N/A	N/A	Operations plan details the process and procedures in place and followed.	Inspection records showing compliance with requirements for weather forecasting in each auditable section	100%
16.3	Anti-Icing System Fixed Automated Spray Technology (FAST) and Road Weather Information System (RWIS) – note, if TxDOT exercises this option	Anti-icing system and RWIS is fully functional and meet the operational specifications for operating pressure, temperatures and duration. i) Software and central control system can properly detect the weather conditions and activate the system operation properly during the storm event. ii) All sensors are fully functional and report the temperatures within the targeted calibration range. iii) The correct spray program is chosen and all of the correct valve units released on time. iv) Traffic flow is not significantly affected by the anti-icing sprays. v) All nozzles are in good working condition and free from blockage. vi) No leakage present on the piping system including joints. vii) Pump house and system supply pumps shall be in good working condition.	24 hrs	14 days	1 month	Full anti-icing system inspection each fall and spring during the switch between winter operation and summer operation. Draining and rinsing the system with water at the end of winter operation. During summer operation, conduct monthly manual spray to ensure the system is in full working condition. Other specific component inspections based on system alarms.	Inspection records showing compliance with requirements for operations and maintenance of anti-icing system in each auditable section.	100%

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
16.4	Operational Plans	Operate snow and ice clearance plans to maintain traffic flows during and after snowfall and restore the travel way to a clear condition as soon as possible.	2 hrs	N/A	N/A	Operations plan details the process and procedures in place and followed.	Inspection records showing compliance with snow and ice clearance plans in each auditable section	100%
16.5	Operations and Maintenance Manual – note, if TxDOT exercises this option	Operations and maintenance instructions for the anti-icing system and items of equipment provided under the contract.	2 hrs	N/A	N/A	Operations and maintenance instructions detail the process and procedures in place and followed.	Inspection records showing compliance with operations and maintenance instructions in each auditable section.	100%
17) INCIDENT RESPONSE								
17.1	General	Monitor the Project and respond to Incidents in accordance with the Maintenance Management Plan (MMP).	1 hr	N/A	N/A	Maintenance Specifications are met for 98% of incidents measured on a 1 year rolling basis. No complaints from Emergency Services.	Inspection records showing compliance with the MMP and requirements regarding incident response times in each auditable section	100%
17.2	Hazardous Materials	Monitor the Project and respond to Incidents involving Hazardous Materials in accordance with the Maintenance Management Plan (MMP).	1 hr	N/A	N/A	MMP details the process and procedures in place and followed.	Inspection records showing compliance with the MMP details regarding hazardous materials in each auditable section	100%
17.3	Structural assessment	Evaluate structural damage to structures and liaise with emergency services to ensure safe working environment while clearing the incident	1 hr	N/A	N/A	Inspections and surveys as required by incident	Inspection records showing compliance with the MMP and requirements for incidents in each auditable section	100%
17.4	Temporary and permanent remedy	Propose and implement temporary measures or permanent repairs to Defects arising from the incident. Ensure the structural safety of any structures affected by the Incident.	24 hrs	28 days	N/A	Review and inspection of the incident site	Auditable inspection records showing compliance with requirements for temporary and permanent remedy for incidents in each auditable section	100%

ELEMENT CATEGORY		PERFORMANCE REQUIREMENT	RESPONSE TO DEFECTS			INSPECTION AND MEASUREMENT METHOD*	MEASUREMENT RECORD*	TARGET
			Cat 1 Hazard Mitigation	Cat 1 Permanent Remedy	Cat 2 Permanent Repair			
18) CUSTOMER RESPONSE								
18.1	Response to inquiries	Timely and effective response to customer inquiries and complaints.	48 hrs	28 days	N/A	Contact the customer within 48 hours following initial customer inquiry. All work resulting from customer requests is scheduled within 48 hours of customer contact. Follow-up contact with the customer within 72 hours of initial inquiry. All customer concerns/requests are resolved to TxDOT's satisfaction within 2 weeks of the initial inquiry.	Percentage of responses within specified times in each auditable section.	100%
18.2	Customer contact line	Telephone line manned during business hours and 24 hour availability of messaging system. Faults to telephone line or message system rectified.	24 hrs	28 days	N/A	Instances of line out of action or unmanned	Number of operations records showing non availability of the customer contact line in each auditable section including complaints from public.	Nil
19) SWEEPING AND CLEANING								
19.1	Sweeping	i) Keep all channels, hard shoulders, gore areas, ramps, intersections, islands and frontage roads swept clean, ii) Clear and remove debris from traffic lanes, hard shoulders, verges and central reservations, footways and cycle ways iii) Remove all sweepings without stockpiling in the right of way and dispose of at approved tip.	24 hrs	28 days	6 months	Buildup of dirt, ice, rock, debris, etc. on roadways and bridges not to accumulate greater than 24" wide or 1/2" deep	Inspection records showing compliance with requirements for sweeping in each auditable section.	100%
19.2	Litter	i) Keep the right of way in a neat condition, remove litter regularly. ii) Pick up large litter items before mowing operations. Dispose of all litter and debris collected at an approved solid waste site.	24 hrs	28 days	6 months	No more than 20 pieces of litter per roadside mile shall be visible when traveling at highway speed.	Inspection records showing compliance with requirements regarding litter pick-up in each auditable section.	100%

ATTACHMENT 2: ELEMENTS FOR WHICH MAINTENANCE SERVICES ARE TO BE PROVIDED

ELEMENT CATEGORY		MAINTENANCE TYPES				
		Routine	**Preventive**	**Major**	**Emergency**	**Operational Items**
1) ROADWAY						
1.1	Obstructions and debris	x				
1.2	Pavement	x	x	x		
1.3	Crossovers and other paved areas	x	x	x		
1.4	Joints in concrete	x	x	x		
1.5	Curbs	x	x	x		
2) DRAINAGE						
2.1	Pipes and Channels	x	x	x		
2.2	Drainage treatment devices	x	x	x		
2.3	Travel Way	x	x	x		
2.4	Discharge systems	x	x	x		
2.5	Protected species	x				
3) STRUCTURES						
3.1	Structures having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or springlines of arches or extreme ends of openings or multiple boxes	x	x	x		
3.2	Structure components	x	x	x		
3.3	Non-bridge class culverts	x	x	x		
3.4	Gantries and high masts	x	x	x		
3.5	Load ratings	x	x	x		
3.6	Access points	x	x	x		
3.7	Mechanically Stabilized Earth and Retaining Walls	x	x	x		
4) PAVEMENT MARKINGS, OBJECT MARKERS, BARRIER MARKERS AND DELINEATORS						
4.1	Pavement markings	x	x	x		
4.2	Raised reflective markers	x	x	x		
4.3	Delineators & Markers	x	x	x		
5) GUARDRAILS, SAFETY BARRIERS AND IMPACT ATTENUATORS						
5.1	Guard rails and safety barriers	x	x	x		
5.2	Impact attenuators	x	x	x		
6) TRAFFIC SIGNS						
6.1	General – All Signs	x	x	x		
6.2	General - Safety critical signs	x	x	x		
7) TRAFFIC SIGNALS						

ELEMENT CATEGORY		MAINTENANCE TYPES				
		Routine	**Preventive**	**Major**	**Emergency**	**Operational Items**
7.1	General	x	x	x		
7.2	Soundness	x	x	x		
7.3	Identification marking	x	x	x		
7.4	Pedestrian Elements and Vehicle Detectors	x	x	x		
8) LIGHTING						
8.1	Roadway Lighting – General	x	x	x		
8.2	Sign Lighting	x	x	x		
8.3	Electrical Supply	x	x	x		
8.4	Access Panels	x	x	x		
8.5	High Mast Lighting	x	x	x		
9) FENCES, SOUND WALLS AND ABATEMENT						
9.1	Design and Location	x	x	x		
9.2	Construction	x	x	x		
10) ROADSIDE MANAGEMENT						
10.1	Vegetated Areas – Except landscaped areas – General	x				
10.2	Landscaped Areas	x				
10.3	Fire Hazards	x				
10.4	Trees, brush and ornamentals	x				
10.5	Wetlands	x				
11) REST AREAS AND PICNIC AREAS (Not Used)						
12) EARTHWORKS, EMBANKMENTS AND CUTTINGS						
12.1	Slope Failure	x	x	x		
12.2	Slopes - General	x	x	x		
13) ITS EQUIPMENT						
13.1	ITS Equipment	x	x	x		
13.2	Dynamic Message Sign Equipment	x	x	x		
13.3	CCTV Equipment	x	x	x		
13.4	Vehicle Detection Equipment	x	x	x		
14) TOLLING Facilities and Buildings (Not Used)						
15) AMENITY						
15.1	Graffiti	x				
16) SNOW AND ICE CONTROL						
16.1	Travel lanes				x	
16.2	Weather Forecasting				x	
16.3	Operational Plans				x	
17) INCIDENT RESPONSE						
17.1	General				x	
17.2	Hazardous Materials				x	

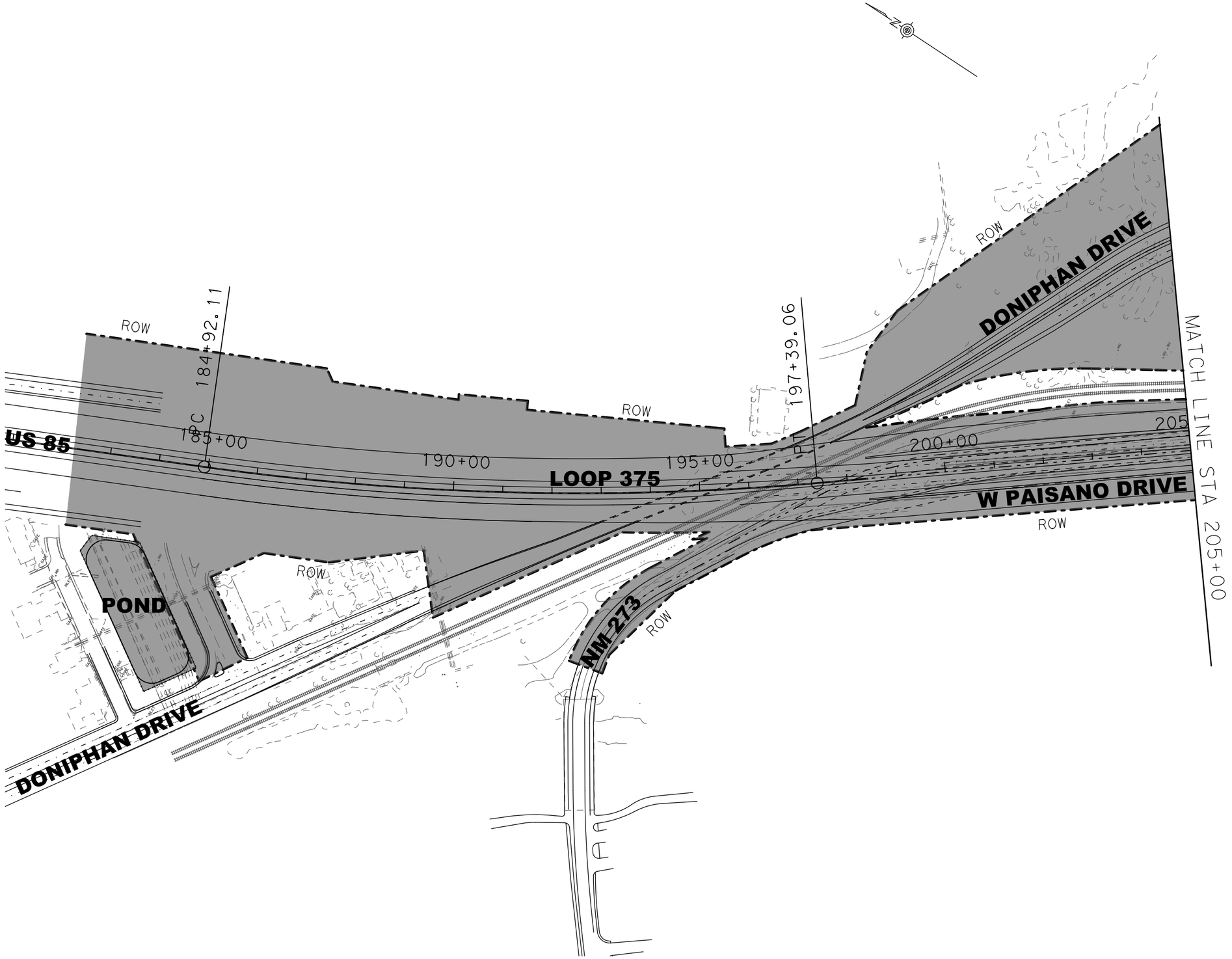
ELEMENT CATEGORY		MAINTENANCE TYPES				
		Routine	**Preventive**	**Major**	**Emergency**	**Operational Items**
17.3	Structural assessment				x	
17.4	Temporary and permanent remedy				x	
18) CUSTOMER RESPONSE						
18.1	Response to inquiries					x
18.2	Customer contact line					x
19) SWEEPING AND CLEANING						
19.1	Sweeping	x				
19.2	Litter	x				

ATTACHMENT 3: LIMITS FOR MAINTENANCE SERVICES

LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY



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LOOP 375/BORDER HIGHWAY WEST

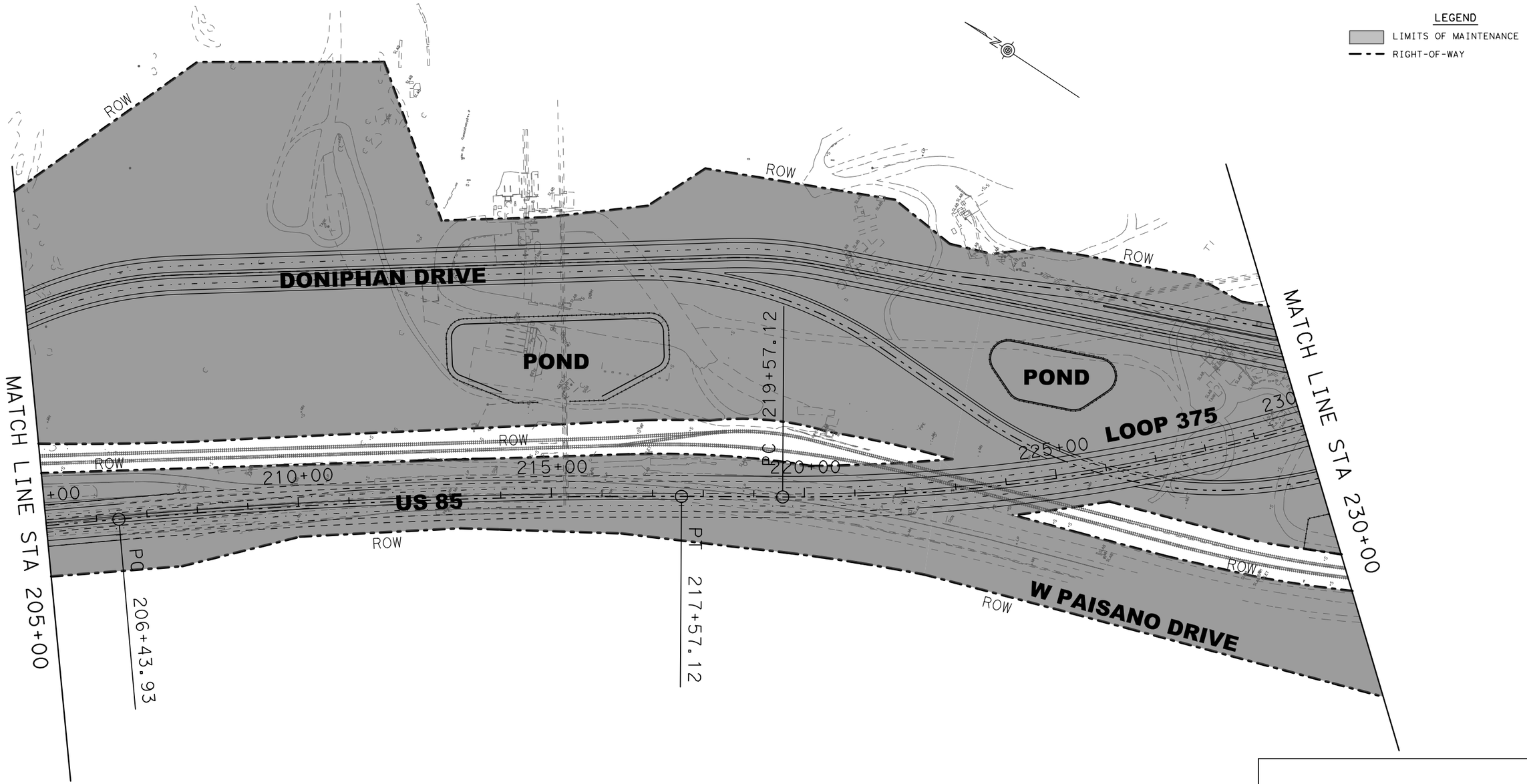
COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 1 OF 15

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 1
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\dlv\3750M01.dgn
DATE: 11/1/2013



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LOOP 375/BORDER HIGHWAY WEST

COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 2 OF 15

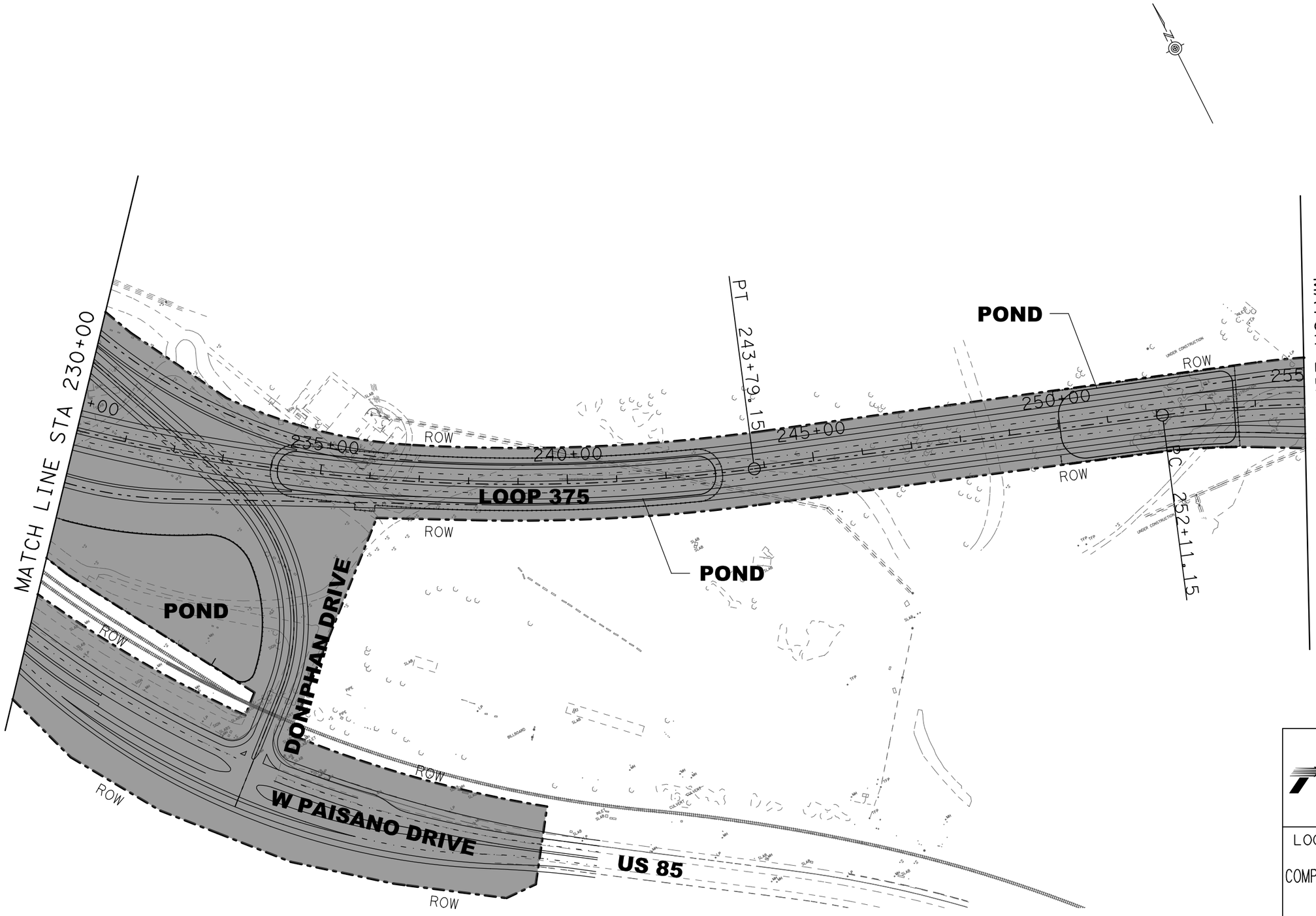
COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 2
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\dlv\3750M02.dgn
DATE: 11/1/2013

LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY



LOOP 375/BORDER HIGHWAY WEST

COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 3 OF 15

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 3
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\dlv\3750M03.dgn
DATE: 11/1/2013

LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY

IH 10

LOOP 375

ACCESS ROAD

EXECUTIVE CENTER BLVD

MATCH LINE STA 255+00

MATCH LINE STA 280+00

ROW

260+00

265+00

270+00

275+00

280

Texas Department of Transportation

LOOP 375/BORDER HIGHWAY WEST

COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 4 OF 15

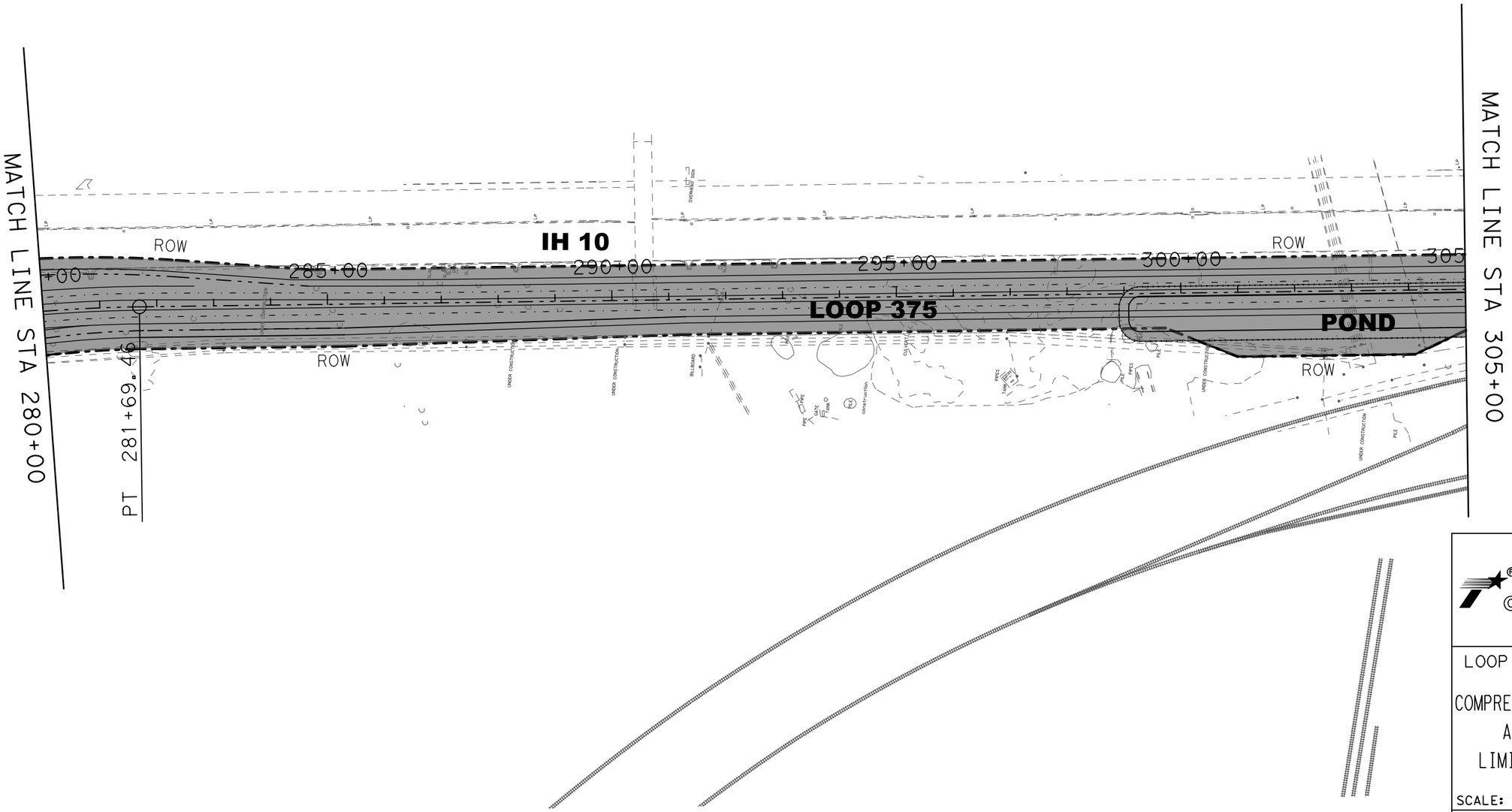
COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 4
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\dlv\3750M04.dgn
DATE: 11/1/2013

LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY



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LOOP 375/BORDER HIGHWAY WEST

COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 5 OF 15

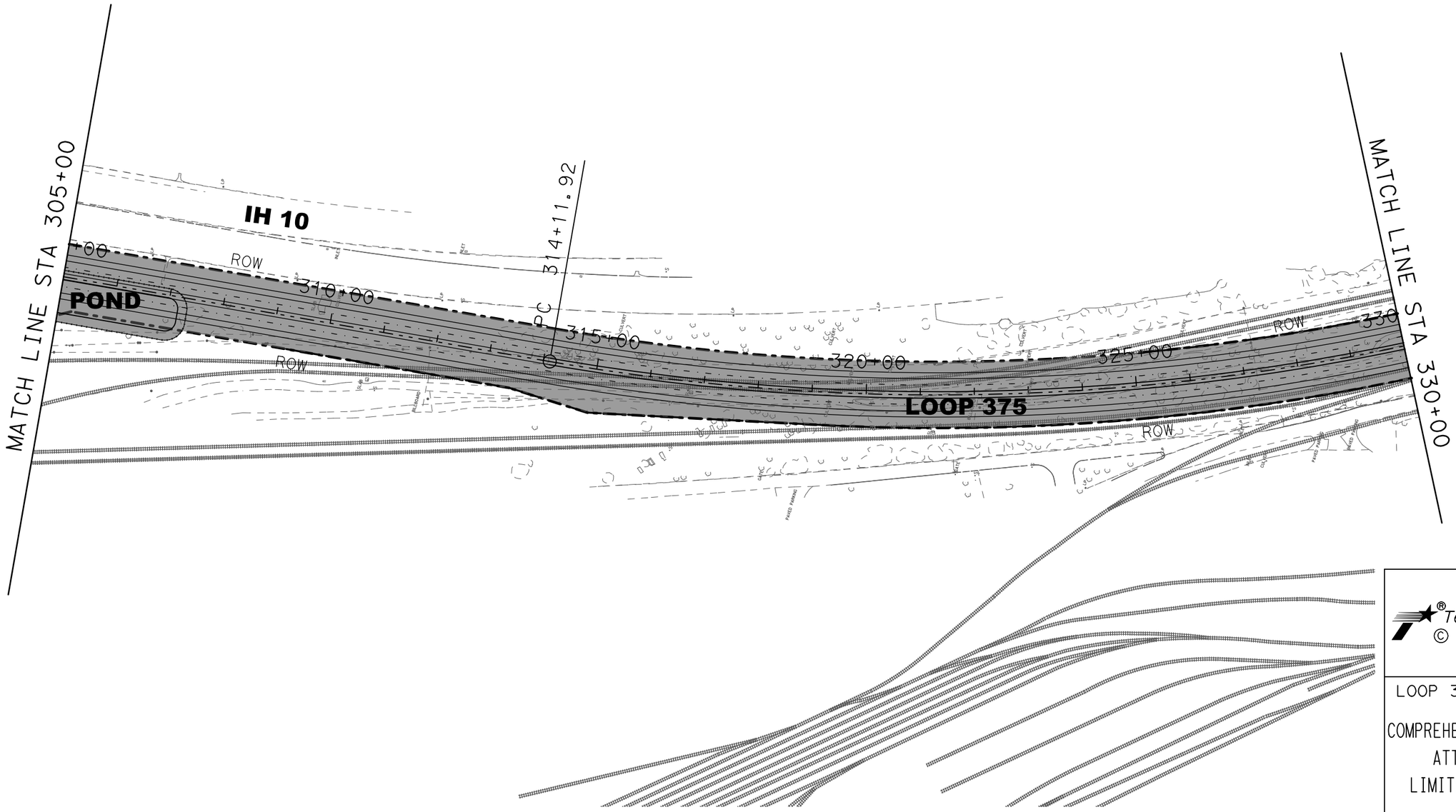
COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 5
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\div3750M05.dgn
DATE: 11/1/2013

LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY



Texas Department of Transportation

LOOP 375/BORDER HIGHWAY WEST

COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 6 OF 15

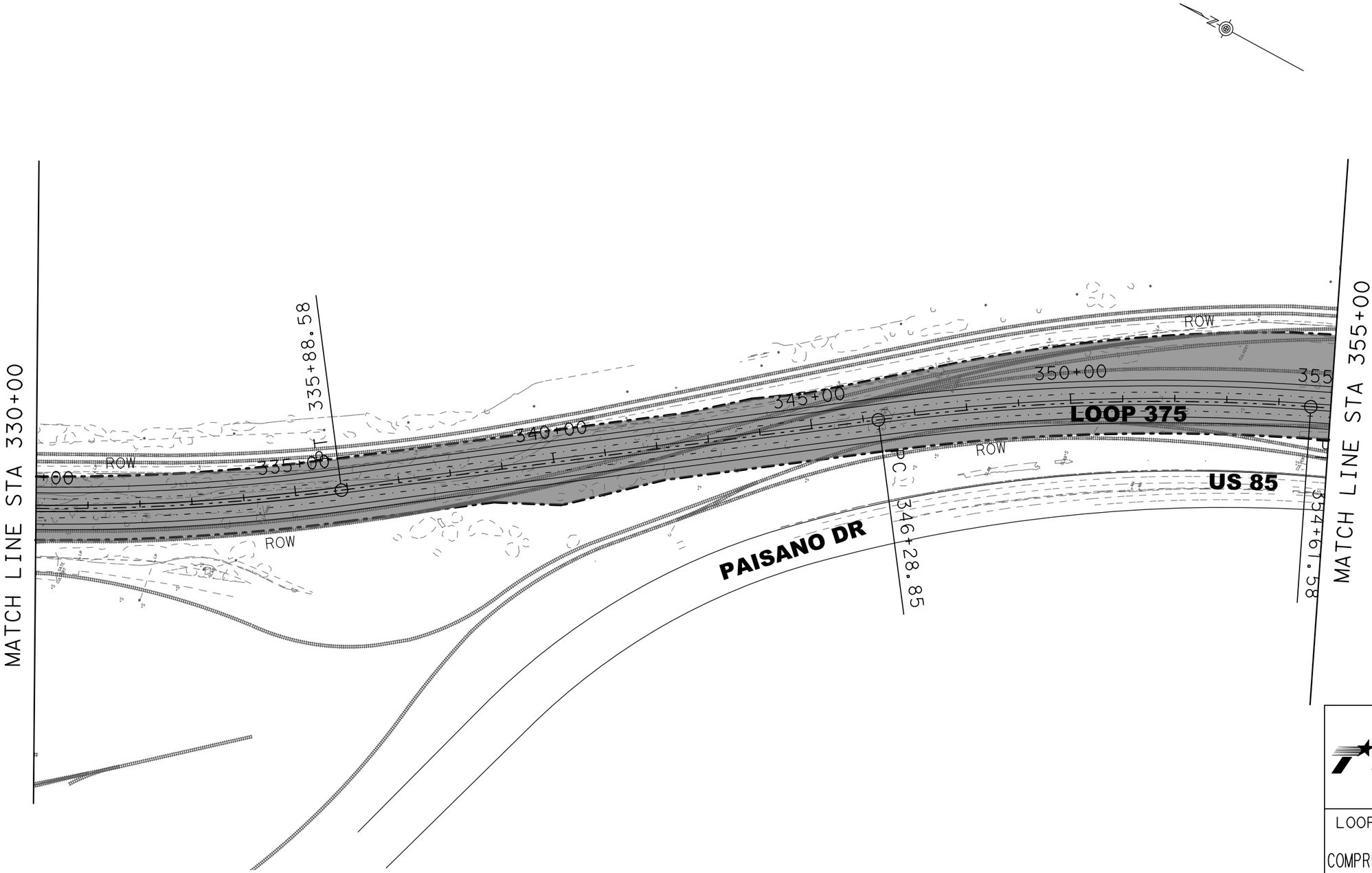
COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL	6

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\div\3750M06.dgn
DATE: 11/1/2013

LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY



Texas Department of Transportation

LOOP 375/BORDER HIGHWAY WEST

COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 7 OF 15

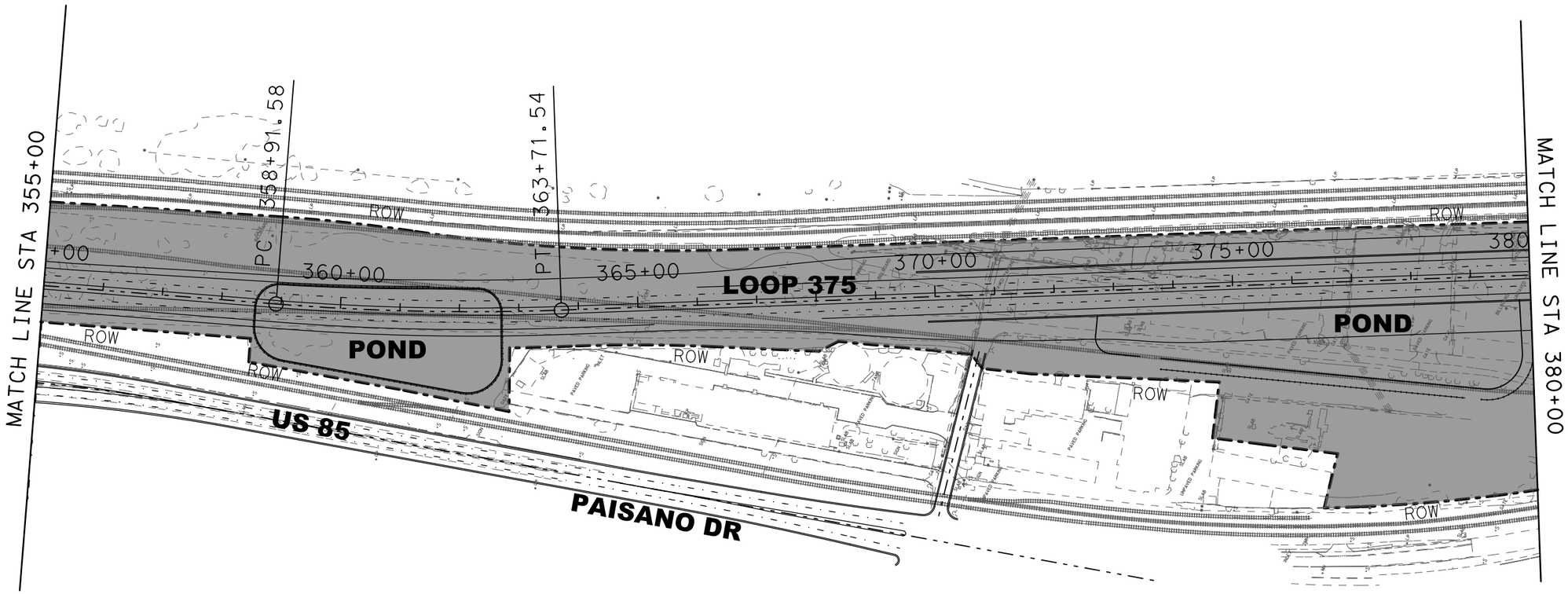
COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 7
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\div\3750M07.dgn
DATE: 11/1/2013

LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY



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LOOP 375/BORDER HIGHWAY WEST

COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 8 OF 15

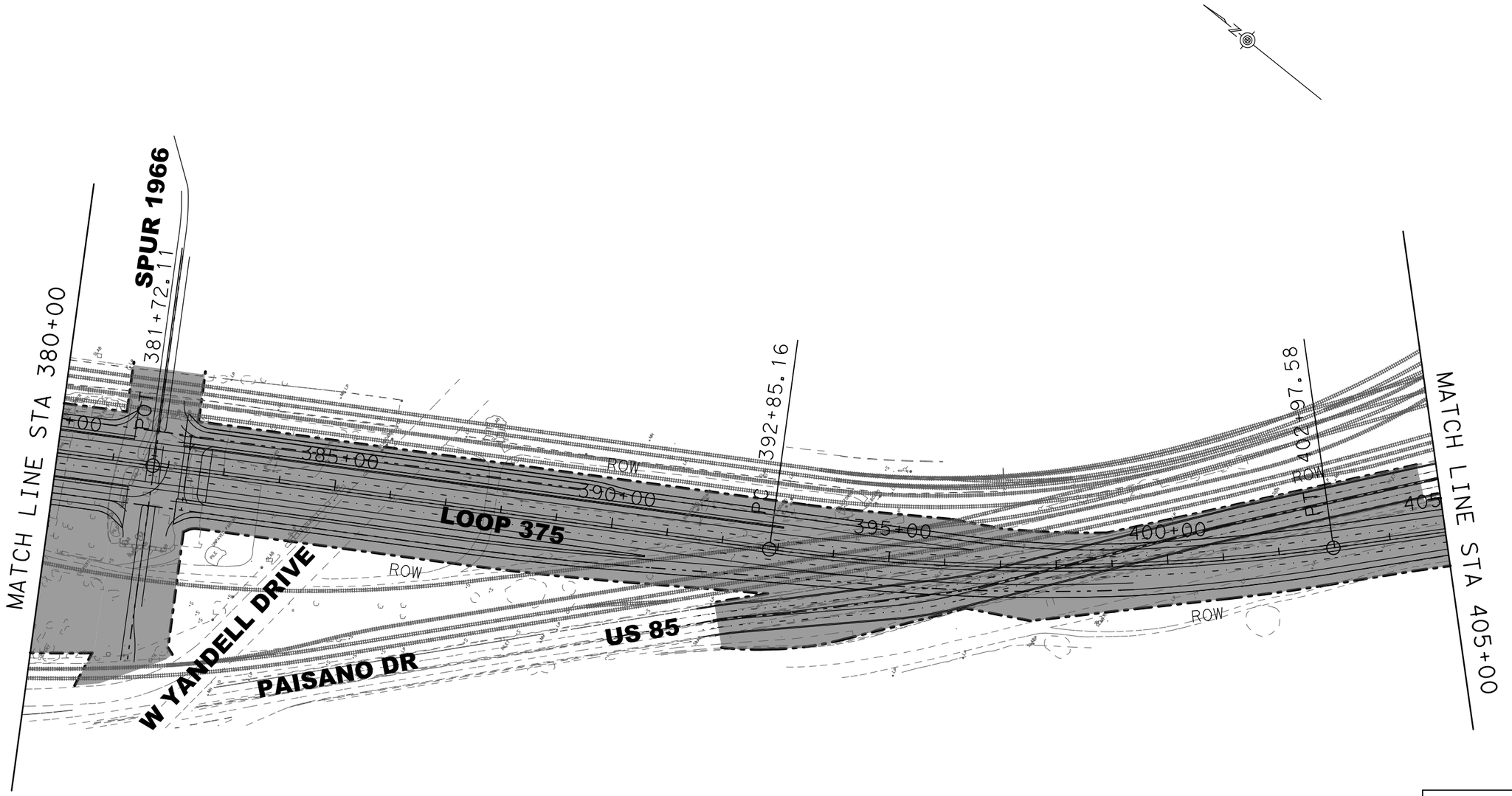
COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL	8

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\div\3750M08.dgn
DATE: 11/1/2013

LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY



Texas Department of Transportation

LOOP 375/BORDER HIGHWAY WEST

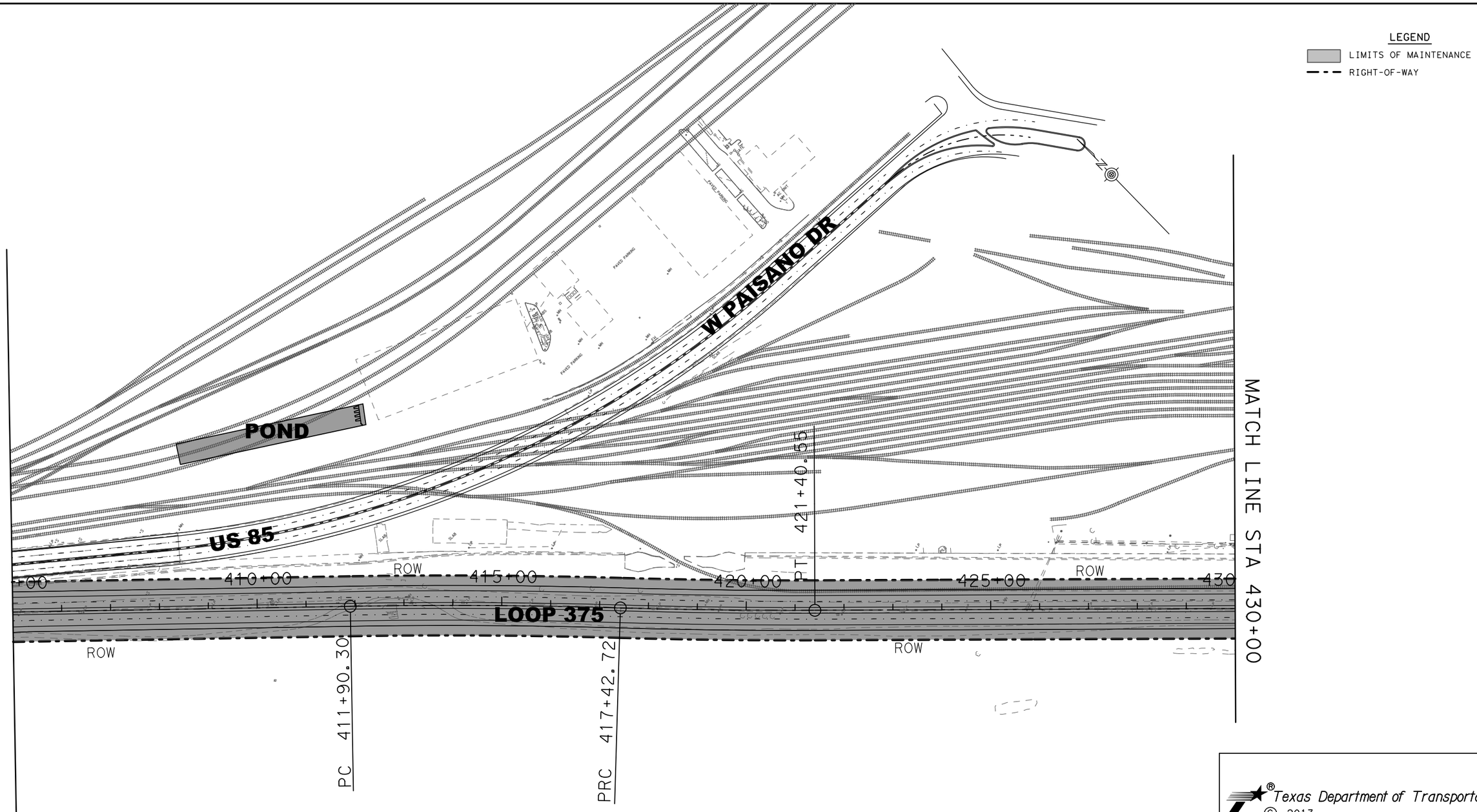
COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 9 OF 15

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL	9

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\div\3750M09.dgn
DATE: 11/1/2013



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LOOP 375/BORDER HIGHWAY WEST

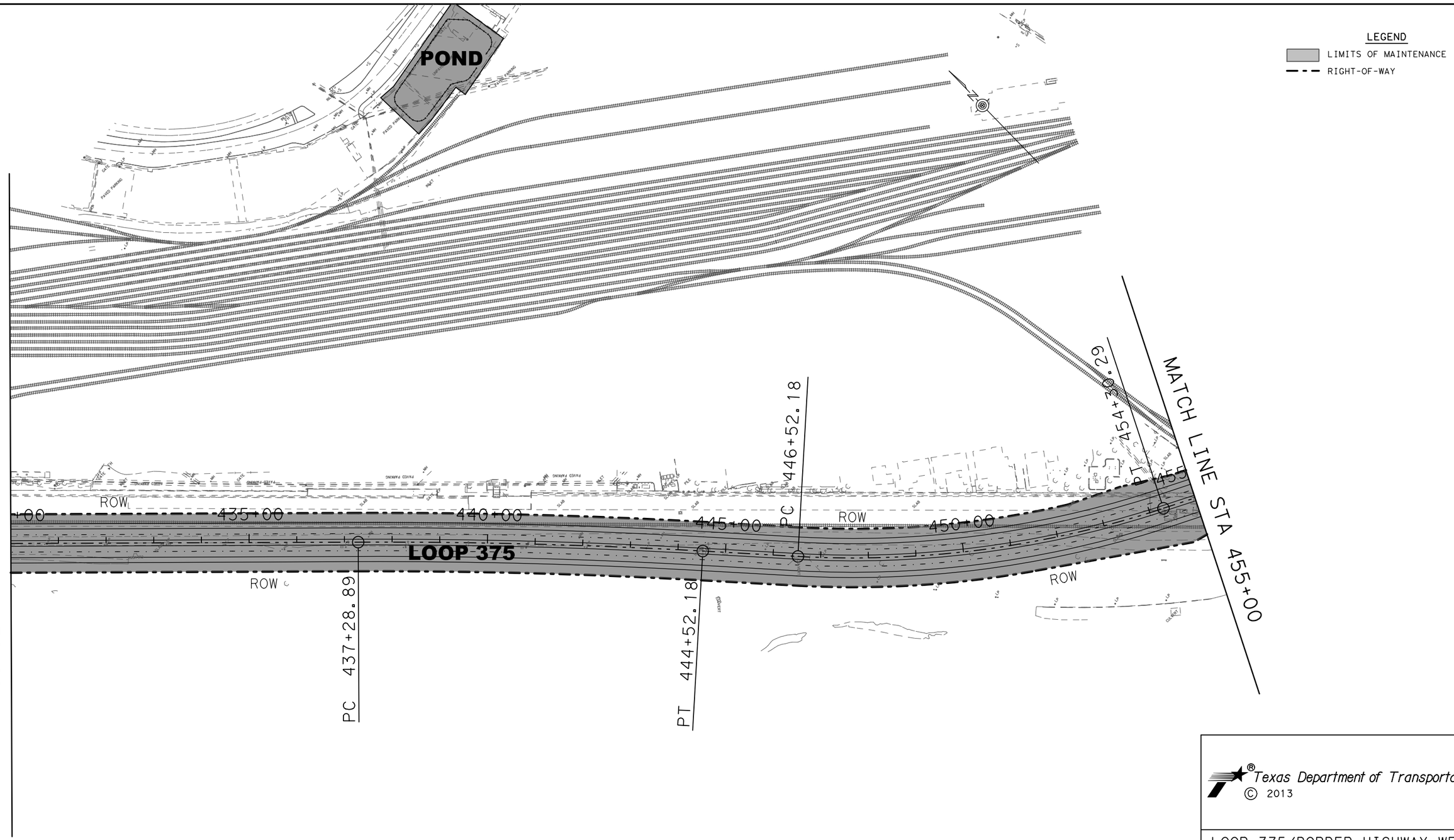
COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 10 OF 15

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL	10

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\dlv\3750MI0.dgn
DATE: 11/1/2013



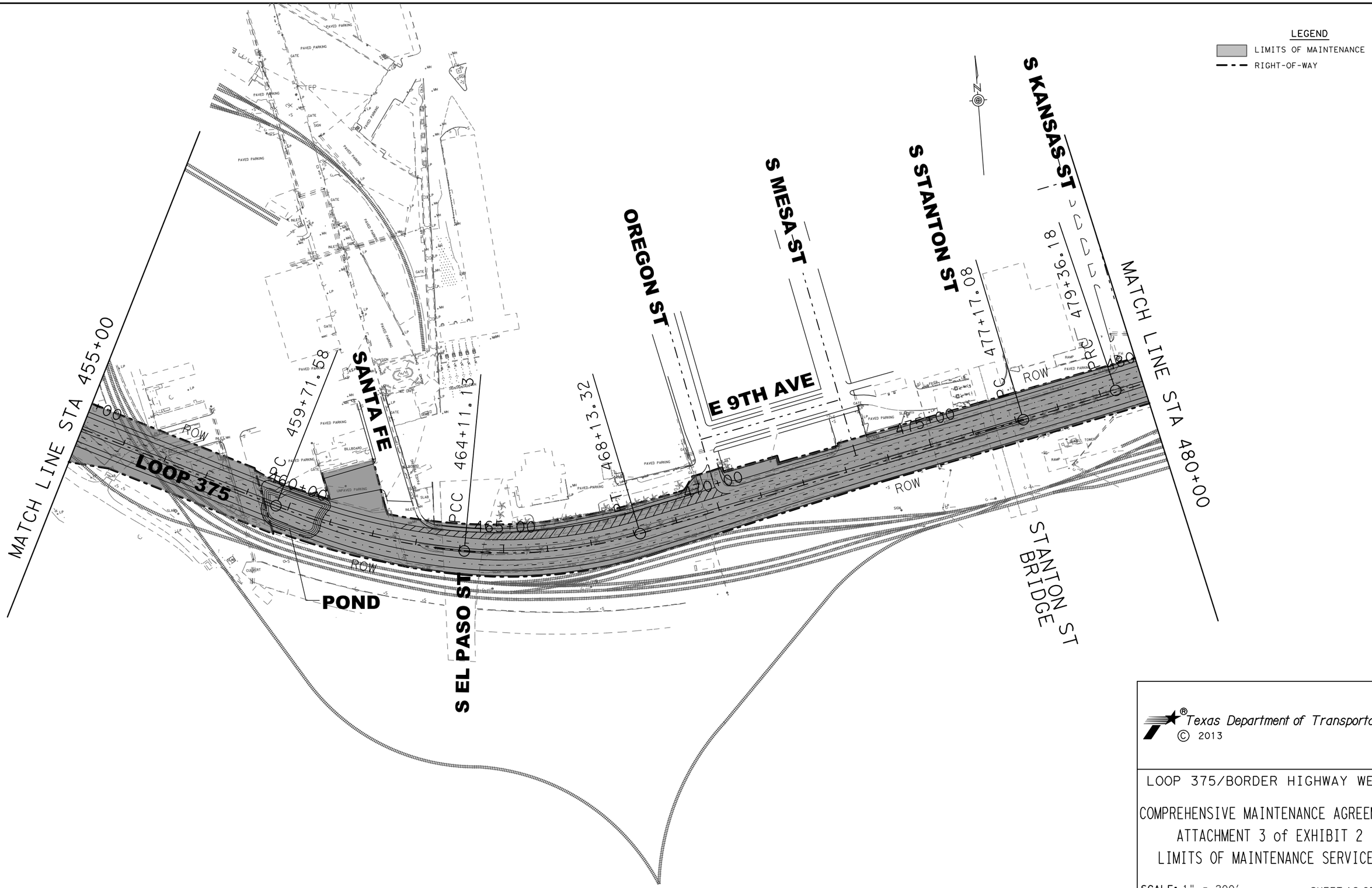
LOOP 375/BORDER HIGHWAY WEST

COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL	11

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\dlv\3750MII.dgn
DATE: 11/1/2013



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COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 12 OF 15

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 12
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\dlv\3750MI2.dgn
DATE: 11/1/2013

FILE: Z:\Projects\JEC0206 WA 08\Border Highway\dlv\3750M13.dgn
DATE: 11/1/2013

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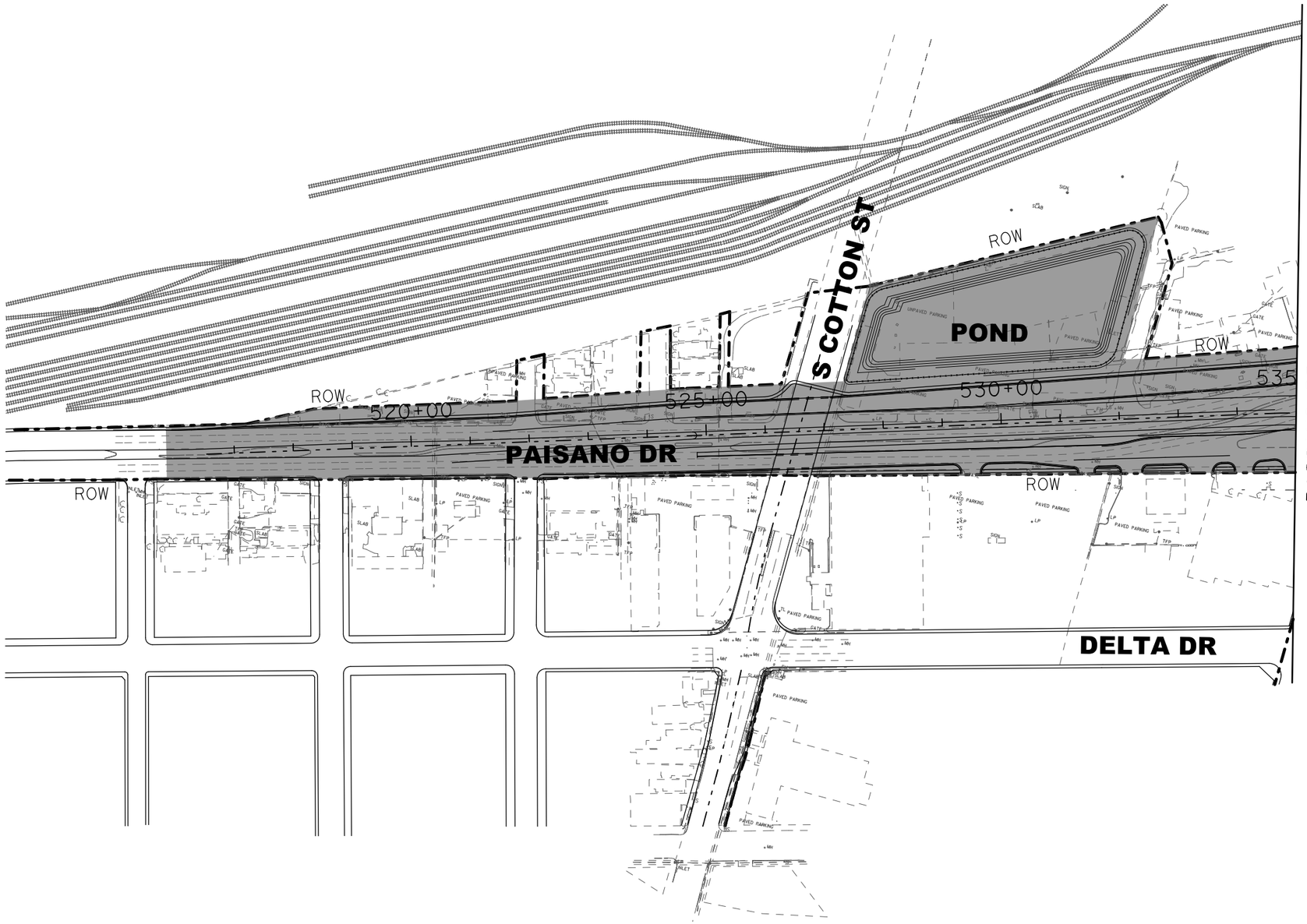
COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 13 OF 15

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 13
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL



LEGEND

LIMITS OF MAINTENANCE

RIGHT-OF-WAY

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COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

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SCALE: 1" = 200'

SHEET 14 OF 15

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL	14

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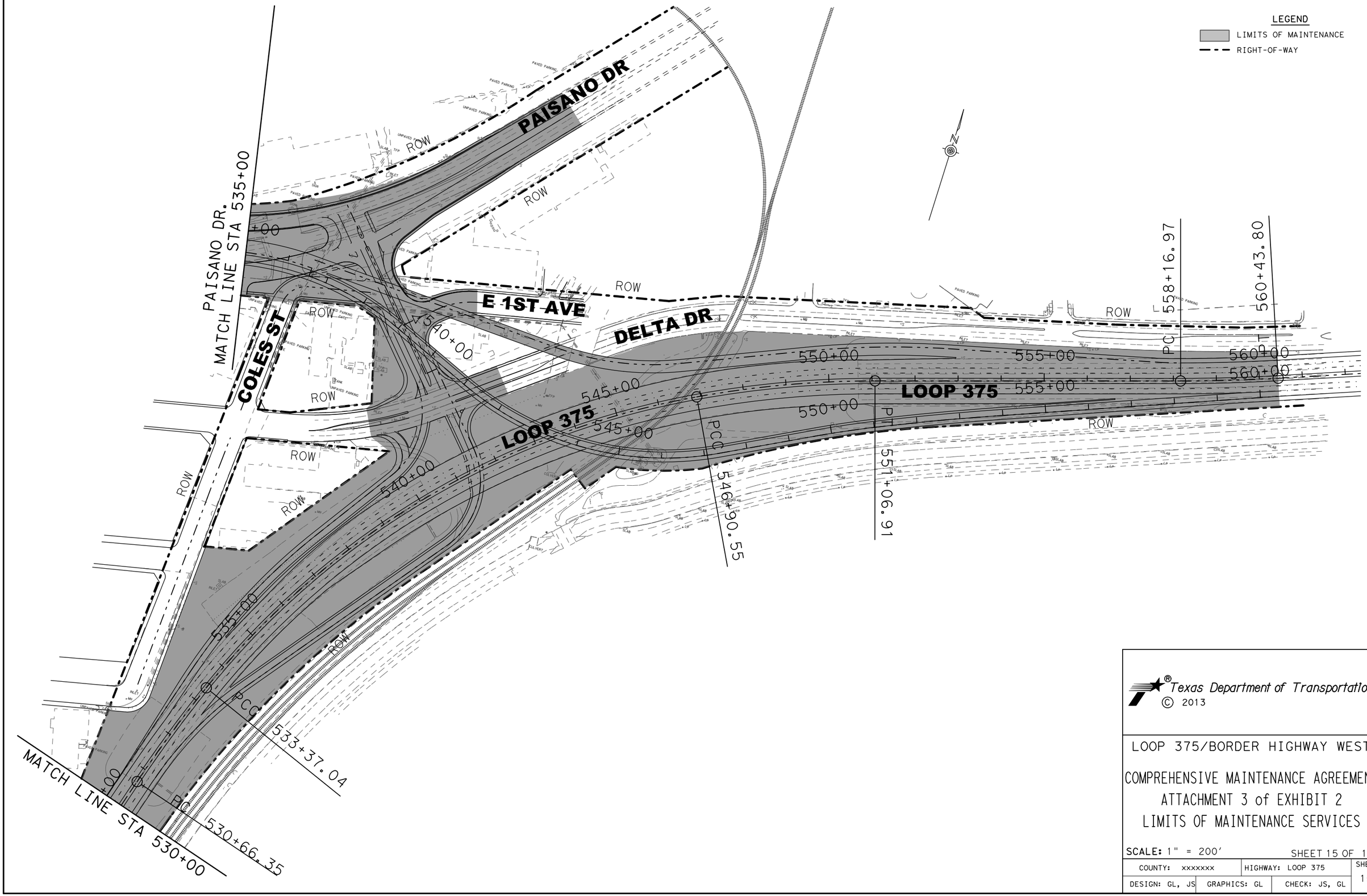
DATE: 11/1/2013



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COMPREHENSIVE MAINTENANCE AGREEMENT
ATTACHMENT 3 of EXHIBIT 2
LIMITS OF MAINTENANCE SERVICES

SCALE: 1" = 200'

SHEET 15 OF 15

COUNTY: xxxxxxx	HIGHWAY: LOOP 375	SHEET 15
DESIGN: GL, JS	GRAPHICS: GL	CHECK: JS, GL

FILE: Z:\Projects\VEC0206 WA 08\Border Highway\dlw\3750MI5.dgn
DATE: 11/1/2013

ATTACHMENT 4: NOT USED

ATTACHMENT 5: NOT USED

ATTACHMENT 6: RESTRICTIONS ON TRAFFIC MANAGEMENT

Lane Closure restrictions for maintenance work will be as follows:

No Lane Closure that restricts or interferes with traffic shall be allowed from noon on the day preceding to 10:00 PM on the day after the following holiday schedule. For this Project, unless otherwise noted in the plans and/or as directed by TxDOT, daily Lane Closures shall be limited according to the following restrictions:

A. General restrictions for mainlanes, ramps, and arterials:

- Easter Holiday Weekend (Friday through Sunday)
- Memorial Day Weekend (Friday through Monday)
- Independence Day (July 3 through noon on July 5)
- Labor Day Weekend (Friday through Monday)
- Thanksgiving Holiday (Wednesday through Sunday)
- Christmas and New Year's Eve Holiday (December 15 through December January 1)
- Spring break week (Saturday through the following Sunday)
- Tax-free shopping weekend (Saturday and Sunday)
- At least one through mainline in each direction shall remain open at all times, unless otherwise approved by TxDOT
- Complete closure of the mainlanes will not be allowed, unless approved by the TxDOT.

B. Arterial crossings:

- At least one through mainline in each direction shall remain open at all times, unless otherwise approved by TxDOT.
- Provide and maintain access to properties and businesses adjacent to the right-of-way at all times unless otherwise directed by the TxDOT.
- No mainlane and arterial road closures may occur at the same time, unless approved by the TxDOT.

C. Ramps:

- No two adjacent ramp closures may occur at the same time.

ATTACHMENT 7 : MAINTENANCE PLANNING ACTIVITIES & ASSOCIATED FUNC. CODES

All segment 78 functions are trackable

DISTRICT CROSS REFERENCE CODE CHART 12 (FIMS SEGMENT 78, AND PORTIONS OF 70, 71 AND 72)

Effective September, 2012 (Rev Date: July, 2011)

110	P03	CY	Removal and Replacement Removal of base and/or subgrade materials from distressed or failed areas and replacement with suitable materials. (Includes resurfacing.)	522	RD	MI	Street Sweeping Routine street sweeping. Units are the actual miles swept regardless of centerline miles.	593	T04	LF	Cable Median Barrier Installation and maintenance of high tension cable median barrier systems, including the cable, posts and end treatments.	733	T03	EA	Vandalized Signs Replacement or repair of signs damaged by vandalism.
120	P03	CY	In Place Repair In place repair base and/or subgrade material. (Includes resurfacing, and may or may not include additional stabilizing material.)	523	R1	MI	Debris Routine patrolling to remove and dispose of debris, including dead animals.	594	T04	LF	Concrete Barrier Installation, removal and maintenance of concrete barriers, including attached headlight barrier fence.	738	111	EA	Installation and Maintenance of Flashing Beacons Installation and maintenance of overhead flashing beacons, pedestal or sign mounted flashing beacons, etc.
135	R05	EA LF	Install and/or Maintain Underdrains Installation, repair and maintenance of all types of underdrains.	524	RD	AC	Spot Litter Spot removal and disposal of litter, including dead animals, from the right of way.	595	T04	LF	Guard Fence Installation and maintenance of guard fence, MBGF, turn down ends, headlights barrier fence, including posts, metal beams, etc. (End treatment other than turn down ends, see function 596.)	742	T07	EA	Illumination Installation, maintenance and operation of illumination systems, including continuous lighting, safety lighting and sign illumination.
145	S06	SY	Unpaved Road Maintenance Repair of gravel or dirt roads, including blading, addition of base, etc.	525	RD	HRS	Adopt-A-Highway Installation of posts and signs, materials furnished to groups, and the personnel and equipment used to assist in removal and disposal of collected litter.					743	T06	EA	Installation and Maintenance of Isolated Traffic Signals Maintenance and operation of isolated traffic signals, diamond interchange signals, etc.
				526			Deleted replaced by 522	596	T05	EA	Guardrail End Treatment Systems Installation and maintenance of guardrail end treatment systems. (For attenuators other than GETS, see function 725).	744			Replaced by Function Code 743
211	P01	SY	Leveling or Overlay with Laydown Machine The application of asphaltic tack coat and placing of asphaltic concrete materials to improve the ride qualities or level up low spots.	527	RD	SY	Hand Sweeping Hand sweeping of riprap, islands, medians, curb & gutter, bullpens, driveways, etc.					745	T08	CL MI	Traffic Management System Maintenance and operation of traffic management systems on freeways or non-freeways, entrance/exit ramps, motorist information (e.g. changeable message signs, highway advisory radio, etc.) surveillance and related communications equipment. (ITS Control Center personnel should charge to segment 70, detail 0570.)
212	P01	SY	Leveling or Overlay with a Manfiance The application of asphaltic tack coat and placing layers of asphaltic concrete material.	530	S1D	SF	Removal of Graffiti Removal of graffiti from fixtures, wing walls, bridge structures, etc. Not to be used in lieu of function 733 (Vandalized Signs), 731 or 732 (Sign Installation).	597	T03	EA	Mailboxes, Installation and Maintenance				
				531	SD6	HRS	Picnic Area Maintenance (Without Restrooms) Refer to function 532 for description.	598	S06	HRS	Boat Ramp Maintenance Work performed in maintaining boat ramps, including mowing, litter removal, emptying litter barrels, maintenance of paved and unpaved areas, etc.	750	T09	EA	Installation and Removal of Pavement Markers Installation and/or removal of traffic buttons or reflective pavement markers.
213	P01	SY	Leveling by Hand The application of asphaltic tack coat and placing layers of asphaltic concrete material by hand. This includes repair of pavement areas greater than one square	532	SD6	HRS	Rest Area Maintenance (With Restrooms) Work performed in janitorial and grounds maintenance, including mowing, litter pickup, emptying litter barrels, maintenance of plantings, cleaning restroom, cleaning arbors, graffiti removal, minor paintings, etc. This item shall also include special maintenance required to repair/replace arbors, picnic tables, fixtures, litter barrels, paved areas, etc. (including maintenance of treatment plants and dump stations).	610	S04	HRS	Bridge, Movable Span Operation, routine maintenance and inspection of movable span bridges (swing barge, lift or turn). Restricted use: Beaumont, Houston, Pharr and Yoakum Districts only.	790	S07	HR	Miscellaneous Traffic Services All traffic surveys (including all motor vehicle and pedestrian counts at intersections and directly related locations) and other traffic services not covered elsewhere. **Note**: Traffic control performed during the pavement evaluation process should be charged to segment 71, detail 3214 and the appropriate function (600 thru 690).
214	P01	SY	Leveling or Overlay with Drag Box The application of asphaltic tack coat and placing layers of asphaltic concrete material.					611	S04	HRS	Bridge, Portable Installation, removal, maintenance and inspection of portable bridges.				
225	P06	LM	Sealing Cracks Cleaning, filling and sealing cracks in the pavement using asphaltic rubber or other sealants.	533	SD6	HRS	Rest Area Facility Maintenance through Regional Contracts (Maintenance Division Use Only)	620	S05	CY	Bridge Channel Maintenance Removal of silt and drift, filling eroded areas, channel maintenance (including easements) and maintenance and repair of jetties and dikes.	799	S07	HR	Traffic Control The placement, maintenance and removal of barricades, signs, cones, lights and other such devices needed to handle traffic during emergencies or special events. This includes flaggers.
231	P05	SY	Seal Coat Application of a single layer of asphaltic material followed by the application of a single layer of aggregate over the full width of the lane or a shoulder (greater than 6' in width) for a minimum of 1000 continuous feet.	535	SD	HRS	Maintenance of Specialty Facilities All maintenance costs to specialty facilities including border safety inspection facilities (BSIFs), toll booths, service plazas, fencing and associated appurtenances. This includes both temp and perm facilities. The highway class code will determine the type of facility.	628	S02	LF	Bridge Rail Maintenance of bridge rail, posts & post connections to deck, including painting.	806			Replaced by Function Code 799
								645	S02	LF	Bridge Joint Maintenance Repair of bridge joints, including cleaning and sealing.	807			Replaced by Function Code 799 Accident Flag selected
								646	S02	LF	Bridge Joint Replacement Replacement of bridge joints.	809			Replaced by Function Code 799 Disaster Project Task number
232	P04	SY	Strip or Spot Seal Coat Application of a single layer of asphaltic material followed by the application of a single layer of aggregate over areas less than the full width of the lane or shoulder (6' or less in width), or the full width of the lane or shoulder but less than 1000 feet in length.	538	RD	AC	Pest Control Activities related to use of predatory animal and insect control whether in turf and ornamental sites or on the ROW.	650	S01	SF	Bridge Deck Repair to bridge decks.	811	S07	HR	Snow and Ice Response Emergency response to clear roads during or after a snowvice event. Includes sanding, deicing, cleaning and removal, etc.
				540	RD	HRS	Hand Vegetation Control Hand cleaning vegetation out of islands, medians, riprap, drainage channels, etc. by chemical, manual or mechanical means.	660	S01	SF	Bridge Superstructure, Concrete Routine maintenance of the concrete components of the bridge superstructure, including bearings, concrete diaphragms, and beams.	813			Replaced by Function Code 799, 523 Disaster Project Task number
233	P04	SY	Fog Seal Retain aggregate, enliven surface and/or seal hairline cracks by the application of a thin layer of asphaltic material.	541	RD	AC	Chemical Vegetation Control, Foliage Complete control of vegetation encroaching in pavement edges, shoulders, medians, islands and curbs with herbicides.	665	S01	SF	Bridge Superstructure, Steel Routine maintenance of the steel components of the bridge superstructure, including steel diaphragms and beams.	814			Replaced by Function Code 563 Disaster Project Task number
235	P04	SY	Microsurfacing The application of a polymer modified high performance emulsion coupled with fine graded aggregate, mineral fillers and special additives in a slurry, to full ruts or to a new wearing surface. (Caution: Should not be used to seal cracked pavements.)	542	RD	AC	Chemical Vegetation Control, Overspray Control of undesirable vegetation growth by overspraying wide areas of the right of way including fixtures (i.e. signs, delineators, guardrails, culverts, etc.) with herbicides.	670	S03	SF	Bridge Substructure, Concrete Routine maintenance of the concrete components of the bridge substructure, including caps, columns, abutments, wingwalls, pilings, etc.	824			Replaced by Function Code 211, 212, 213, 214
241	P09	EA	Pothole Repair The repair of holes with an area of less than or equal to one square yard. Charge to Function 213 if greater than one square yard.	544	RD	AC	Chemical Vegetation Control, Rope wick Control of tall vegetation (i.e. Johnsongrass) in the right of way with a wick applicator.	675	S03	SF	Bridge Substructure, Steel and Timber Routine maintenance of the steel or timber components of the bridge substructure, including caps, abutments, pile extensions, etc.	826			Replaced by whatever Function Code, Disaster or Damage Claim Project Task number
242			Replaced by Function 241	545	RD	HRS	Chemical Vegetation Control, Basal Application Control of undesirable brush species in the right of way with a low volume basal bark application.	680	S03	SF	Bridge Painting Cleaning and painting of superstructure or substructure.	827			Replaced by Function Code 743, Disaster or Damage Claim Project Task number
245	P10	SY	Adding or Widening Pavement Widening travel lanes up to 2 feet, adding shoulders up to 4 feet to correct a maintenance problem (includes sub-grade, base & surfacing), or adding turn lanes to improve safety.	548	RD	SY	Seeding, Sodding, Hydromulching and Blanketing Seeding, sodding, hydromulching and/or placing soil retention blankets.	690	S04	HRS	Bridge, Mechanical and Electrical Maintenance and repair of the electrical & mechanical components of a bridge.	828			Replaced by Function Code 721, 731, 732; Disaster or Damage Claim Project Task number
								695	S04	HRS	Fender Systems Installation and maintenance of fender systems.	829			Replaced by Function Code 742, Disaster or Damage Claim Project Task number
252	P02	SY	Milling and Planing The removal of pavement surface by milling or planing.	551	RD	AC	Landscaping The installation or maintenance of landscape plantings and their facilities including planter walls, borders, sprinkler systems, etc. (excluding picnic and rest areas).					830	R1	HR	Hazardous Material Cleanup, Spills or Leaking Storage Tanks Investigations, testing, clean up, removal, disposal and restoration work associated with a spill or leaking storage tanks.
253	P02	SY	Spot Milling The removal of pavement surface by milling using a small milling machine (4 feet or less drum width).	552	RD	CL	Tree and Brush Control The trimming, pruning and disposal of shrubs, vines, and trees (excluding picnic and rest areas).	711	T01	LF	Paint and Bead Striping Striping or re-striping lane lines, centerlines and edge lines using paint and beads.	831	R1	HR	Hazardous Material Cleanup, Abandoned Materials Investigations, testing, clean up, removal, disposal and restoration work associated with abandoned hazardous materials of unknown ownership.
265	P04	SY	Treat Bleeding Pavement Treatment of excess asphalt on the pavement surface.	558	RD	LF	Storm Water Pollution Protection Maintenance or installation of storm water pollution protection plan (SW3P) in accordance with EPA regulations on projects designated by area engineers.	712	T02	LF	High Performance Striping Striping or re-striping lane lines, centerlines and edge lines using thermoplastic or other high performance materials.	**Segment 70**			**Maintenance Section Overhead Costs** Detail 0XXX (XX = Office No.), not reasonably identifiable to a roadway
270	P07	LF	Edge Repair Repair of raveled, low or damaged pavement edges with asphaltic materials.	560	R06	SY	Riprap Installation and Maintenance Installation and maintenance of ditch liners, retards, down drains, riprap, flumes, concrete mowing strips, gabions, retaining walls and other erosion protection.	713	T02	EA	Specialty Striping (Cutting, support, contractor support, damage claims) Medians, islands and other pavement markings not covered under function 711 or 712 (including make-ready operations for all stripe alignment, such spotting, tabs, temporary tape, etc.)	400			Training (informal or on the job training)
315	P08	SY	Slab Stabilization / Jacking Leveling concrete pavement through the use of hydraulically placed material.									401			Meetings (non-coded meetings, Safety Banquets)
325	P06	LF	Cleaning and Sealing Joints and Cracks Cleaning, filling and sealing joints and cracks in concrete pavement.	561	R04	CY	Ditch Maintenance Removal and hauling of silt, drift, and/or filling eroded areas. Not to be used for work at culverts or bridges (see functions 570 or 620).	715	T02	LF	Removal of Pavement Striping Use when striping is not going to be replaced.	402			Yard Maintenance and Inspections (maintenance/inspections to facilities or yard)
330	P08	SY	Blowouts and Stress Relief Repair of blowouts and cutting pavement for stress relief.									403			Office/Section Administration (pick up/purchase supplies, HR admin., office tech duties)
345	P08	SY	Repair Spalling Clean and repair spalled areas (not full depth of concrete slab).	562	R04	LF	Reshaping Ditches Reshaping ditches using maintainer and/or gradall, etc. Not to be used for work at culverts or bridges (see functions 570 or 620).	716	S11	LM	Performance Based Contract Destination (Contract Payments ONLY) These contracts are set up to pay the contractor a fixed price on a periodic basis of type of work performed and/or amount of work performed.	404			Section Supervision (customer support, contractor support, damage claims)
360	P08	SY	Full Depth Removal and Replacement The removal and replacement of failed areas for the full depth of the concrete slab.	563	R06	SY	Slope Repair/Stabilization Slope repair and/or stabilization. Not to be used for work at culverts or bridges (see functions 570 or 620).	721	T03	EA	Delineators Installation, maintenance and/or replacement of damaged or missing reflectors and/or posts. This function shall include straightening of posts. Measured by each post and each reflector replaced.	405			Section Management (checking on crews, supervisor admin, meeting with local govts.)
455	P07	LF SY	Reshaping Unpaved Shoulders Restore sod or flexible base shoulders to original sections. Includes reshaping front slope to eliminate low pavement edges along a paved shoulder.	570	RD	EA	Culvert and Storm Drain Maintenance The installation, repair and maintenance of culverts up to bridge classification (identify feet measured along centerline of roadway). This work includes silt and debris removal from inlet, storm drains, retention ponds and culverts (except those costs associated with function 571).	724	T04	LF	Roadway Access Control Installation and maintenance of barriers (other than those covered by functions 594 or 595) designed to control access on highways, including post and cable fences, ROW fences and cattle guards.	406			Material Management (inventory mgmt, material deliveries from WH to yard, hauling)
480	S08	SY	Side Road Approaches, Crossovers and Turnouts The installation or maintenance of side road approaches, crossovers, historical markers, mailbox and litter barrel turnouts, etc.									407			Standby Time (weekend and weekday)
488	S08	SY	Concrete Appurtenance Installation and Maintenance The maintenance, installation, or removal of concrete appurtenances which include curbs and/or gutters, raised medians, sidewalks and sound barriers.	571	RD	EA	Storm Water Pump Station Maintenance Repair and maintenance of motors, pumps, generators, wet wells, dry wells, debris screening baskets, buildings, etc., including costs of utility services.	725	T05	EA	Vehicle Attenuators Installation and maintenance of vehicle attenuators, crash cushions, etc. (Excludes the end treatment devices on guard fence.)	408			General Overhead
495	S06	SY	Parking Area Maintenance Repair of sub-grade, base or surface of areas including parking lots, park and ride lots and camping pads.	580	T03	EA	Removal of Illegal Signs on ROW, TEMP (Temporary with special handling required.) Removal of illegal signs on right of way, including disposal and written notice to owners.	731	T03	EA	Installation/Maintenance of Small Signs The installation or maintenance of signs (less than 4 ft. X 4 ft.). Includes the installation of an old sign on a new post, the installation of a new sign on an existing post, removing or straightening of signs and posts. Not to be used in lieu of function 732 (Installation of Large Signs), function 733 (Vandalized Signs), or function 525 (Adopt-A-Highway). Measured by each post and each sign maintained.	**Segment 71**			**Direct District Charges (No specified road location)** Detail 1305, function 020, field inspections not identifiable to a roadway, including damage assessments, night inspections, permit inspections, bridge inspections
511	R02	AC	Mowing Mowing of the right of way.	581	T03	EA	Removal of Illegal Signs on ROW, PERM (Permanent, special handling required.) Removal of illegal signs on right of way, including disposal and to written notice to owners.								Detail 1310, function 020; special services not identifiable to a roadway, including cleaning stockpile locations, collecting ditch grade data, and counting loads of RAP for county assistance
513	R02	HRS	Spot Mowing Spot mowing of the right of way.	582	S10	HRS	Removal of Encroachments, Other than Signs Removal of illegal encroachments (other than signs) on the ROW, including disposal and written notice to owners.	732	T10	EA	Installation/Maintenance of Large Signs The installation or maintenance of signs (equal to or greater than 4 ft. X 4 ft.). Includes the installation of an old sign on a new post, the installation of a new sign on an existing post, removing or straightening of signs and posts. Not to be used in lieu of function 731 (Installation of Small Signs), function 733 (Vandalized Signs), or function 525 (Adopt-A-Highway)				
520	R10	CY	Illegal Dumpsite Removal and Disposal Removal and disposal of debris discarded or deposited in an unauthorized area in the right of way such as under a bridge, overpass, culvert, etc.	585	S08	SY	Driveway Installation/Removal and Maintenance See access management policy.								Detail 1315, function 020; Courtesy Patrol
521	R03	AC	Litter Removal and disposal of litter from the entire right of way, excluding paved areas, picnic and rest areas.	591	S09	HRS	Utilities and Driveway Inspection								**Roadway Evaluation**
															Detail 3214, function codes 600 thru 690; functions related to Pavement Management, including traffic control while performing pavement evaluation
												Segment 72			**Off-Systems Disaster Cleanup**
												500			Detail 000470001, off-system assistance that has been approved by the Disaster District Chairman
												501			Debris Removal
												505			Fire Control
												510			Evacuee Assistance
												515			Traffic Control for Disasters
												520			Sign and Signal Repair for Disasters
															Repairs to Roads for Disasters

P01	Pavement Leveling	R01	Sweeping	S01	Bridge Superstructure Maintenance	T01	Paint and Bead Striping		
P02	Milling	R02	Mowing	S02	Bridge Rail and Joints	T02	High Performance Striping		
P03	Base Repair	R03	Litter Control	S03	Bridge Substructure Maintenance	T03	Sign Maintenance		
P04	Spot Seal Coat	R04	Drainage Maintenance	S04	Specialty Bridge Maintenance	T04	Safety Barrier Maintenance		
P05	Full Width Seal Coat	R05	Drainage Structures	S05	Bridge Channel Maintenance	T05	Crash Attenuators		
P06	Crack Seal	R06	Erosion Control	S06	Specialty Maintenance	T06	Traffic Signal Maintenance		
P07	Edge Maintenance	R07	Vegetation and Pest Control	S07	Traffic Control Services	T07	Illumination Maintenance		
P08	Concrete Pavement Maintenance	R08	Tree and Brush Control	S08	County Road Approaches, Crossovers, & Turnouts	T08	Traffic Management Systems		
P09	Pothole Repair	R09	Landscape Maintenance	S09	Utility & Driveway Inspection	T09	Raised Pavement Markings		
P10	Adding or Widening Pavement	R10	Debris and Cleanup	S10	Graffiti & Encroachment Removal	T10	Large Sign Maintenance		
						T11	Beacon Maintenance		