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

RESOLUTION NO. 10-20

Supplement No. 1 to Work Authorization No. 1 with LJA
for Engineering and Design Services

WHEREAS, the Central Texas Regional Mobility Authority ("CTRMA") was created pursuant to the request of Travis and Williamson Counties and in accordance with provisions of the Transportation Code and the petition and approval process established in 43 Tex. Admin. Code § 26.1, *et seq*. (the "RMA Rules"); and

WHEREAS, the Board of Directors of the CTRMA has been constituted in accordance with the Transportation Code and the RMA Rules; and

WHEREAS, in a minute order approved on August 25, 2005, the Texas Transportation Commission authorized the CTRMA to pursue the development of the 290 East Turnpike Project (the "Project"); and

WHEREAS, in Resolution No. 07-70, dated December 7, 2007, the CTRMA Board of Directors authorized CTRMA staff to initiate the process for procuring design and engineering services for the design and engineering of the Project in three segments; and

WHEREAS, in Resolution No. 08-16, dated March 26, 2008, the Board of Directors authorized entering into a contract with LJA Engineering & Surveying. Inc. ("LJA") for the design and engineering of Segment 2 of the Project; and

WHEREAS, the CTRMA executed a contract, including Work Authorization No. 1, with LJA for the design and engineering of Segment 2; and

WHEREAS, the CTRMA subsequently determined that it would be beneficial to allow for segregation of the originally defined Segment 2 into two separate projects, Segment 1A and the new Segment 2 of the Project; and

WHEREAS, the segregation of the Project necessitates certain changes to the scope of services under Work Authorization No. 1 with LJA; and

WHEREAS, attached hereto and incorporated herein as Attachment "A" is Supplement No. 1 to Work Authorization No. 1 under the contract with LJA ("Supplement No. 1"), which sets forth a revised scope of services for engineering and design services for Segments 1A and 2 of the Project; and

WHEREAS, it is necessary that the Board of Directors approve Supplement No. 1 and its execution by the Executive Director.

NOW THEREFORE, BE IT RESOLVED, that the Board of Directors of the CTRMA hereby approves Supplement No. 1 and the related Scope of Services in the form or substantially the same form attached hereto as Attachment "A"; and

BE IT FURTHER RESOLVED, that Supplement No. 1 may be finalized and executed by the Executive Director on behalf of the CTRMA and that Supplement No. 1 may be amended from time to time by written amendment as deemed necessary by the Board of Directors.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 31st day of March 2010.

Submitted and reviewed by:

Andrew Martin
General Counsel for the Central
Texas Regional Mobility Authority

Approved:

Ray A. Wilkerson
Chairman, Board of Directors
Resolution Number 10-20
Date Passed 03/31/10

ATTACHMENT "A"
TO
RESOLUTION NO. 10-20
SUPPLEMENT NO. 1 TO LJA WORK AUTHORIZATION NO. 1

ATTACHMENT C

C-2

SUPPLEMENTAL WORK AUTHORIZATION NO. 1

TO WORK AUTHORIZATION NO. 1

CONTRACT FOR ENGINEERING SERVICES

THIS SUPPLEMENTAL WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 4 of the Contract for Engineering Services (the Contract) entered into by and between the Central Texas Regional Mobility Authority (the Authority) and **LJA Engineering & Surveying, Inc. ("LJA"),** (the Engineer) dated **07.30.08**.

The following terms and conditions of Work Authorization No. 1 are hereby amended as follows:

Part I. The Engineer will perform engineering services generally described as transportation engineering and design services for the 290 East Toll Project - Segments 01A and 2 (approximate limits from just west of Tuscany Way to just west of FM 3177) in accordance with the project description attached hereto and made a part of this Supplemental Work Authorization. The Engineer will provide the services outlined in the attached Exhibit B-1 modified to complete 100% PS&E for Segment 01A and a 60% PS&E for Segment 2.

Part II. The maximum amount payable for services, as modified under this Supplemental Work Authorization is **$8,156,176.00** which is **$339,483.00** less than the Lump Sum amount of the original Work Authorization. This amount is based upon the Engineer's revised estimated Work Authorization fee included in Exhibit D-1, Fee Schedule, which is attached and made a part of this Supplemental Work Authorization. The basis for payment will remain as shown in Exhibit D of the original Work Authorization.

This Supplemental Work Authorization shall become effective on the date of final execution of the parties hereto. All other terms and conditions of Work Authorization No. 1, not hereby amended, are to remain in full force and effect.

IN WITNESS WHEREOF, this Supplemental Work Authorization is executed in duplicate counterparts and hereby accepted and acknowledged below.

LJA ENGINEERING & SURVEYING, INC.	**CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**
By: _____	By: _____
Name: Jeff Collins, P.E.	Name: _____
Title: Senior Vice President	Title: _____
Date: _____	Date: _____

LIST OF EXHIBITS (amended)

Exhibit A-1	Services to be provided by the Authority
Exhibits B-1	Supplemental Services to be provided by the Engineer
Exhibit C-1	Work Schedule
Exhibit D-1	Fee Schedule
Attachment H-2	DBE Sub-provider Form

EXHIBIT A-1

SERVICES TO BE PROVIDED BY THE AUTHORITY

The Authority shall perform and provide the following in a timely manner so as not to delay the Services to be provided by the Engineer:

1. Authorize the Engineer in writing to proceed.

2. Payment for work performed by the Engineer and accepted by the Authority.

3. Assistance to the Engineer, as necessary, to obtain the required data and information from other local, regional, State and Federal agencies that the Engineer cannot easily obtain.

4. Place at Engineer's disposal all reasonably available information pertinent to the Project, including previous reports, drawings, specifications, or any other data relative to the design and construction of the Project.

5. Provide available existing ROW plans.

6. Review and approve the Engineer's progress schedule with milestone activities and/or deliverables identified.

7. Provide timely review and decisions in response to the Engineer's request for information and/or required submittals and deliverables, in order for the Engineer to maintain the agreed-upon work schedule identified in Exhibit C.

8. Provide Project Design Manual and CADD Design Manual.

9. Attend the Design Concept Conference to approve design criteria.

10. Attend and participate in progress meetings as required.

11. Designate in writing a person to act as the Authority's representative, such person to have complete authority to transmit instructions, receive information, and interpret and define Authority's decisions with respect to the Services to be provided by the Engineer.

EXHIBIT B-1
SEGMENT #01A and SEGMENT #2 – LJA Engineering & Surveying, Inc.

SUPPLEMENTAL SCOPE OF SERVICES
TO BE PROVIDED BY THE SEGMENT ENGINEER

Amend Exhibit B, Scope of Services, to provide a 100% PS&E for Segment 01A (detailed in Exhibit B-1A) and a 60% set of plans for the completion of Segment 2 (detailed in Exhibit B-1B) for the CTRMA.

The limits of Segment 01A are from the Segment 1 Direct Connector project to just west of the MoKan corridor. Segment 01A is a breakout project of the 290 East Toll Project Segment 2 (approximate limits from just west of Tuscany Way to just west of FM 3177).

Exhibit B-1A provides for the development of the Segment 01A 100% PS&E, consisting of the incorporation of the necessary portion of the 290E Segment 1 plans and the effort required to prepare a separate PS&E.

Exhibit B-1B provides for the development of a Segment 2 60% PS&E. The scope includes the effort to complete a 60% deliverable and update the current design as needed to incorporate the Segment 01A design and limits.

EXHIBIT B-1A
SEGMENT #01A – LJA Engineering & Surveying, Inc.

SUPPLEMENTAL SCOPE OF SERVICES TO BE PROVIDED BY THE SEGMENT ENGINEER

Supplement Exhibit B, Scope of Services, to provide a separate 100% PS&E for the Segment 01A project. The Segment Engineer, herein referred to as the "Engineer", shall be responsible for the work outlined in this Scope of Services.

1.09 Roadway Design

A. Basic Plan Sheets

1. Prepare the PS&E Title Sheet(s) for Segment 01A.
2. Prepare the detailed Index of Sheets for Segment 01A that identifies each sheet location in the plan set, as well as its corresponding sheet number.
3. Prepare Project Layout Sheets for Segment 01A at a scale of 1"=200' that clearly indicates the limits of the entire project.
4. Prepare Horizontal and Vertical Control Sheets for Segment 01A.

B. Roadway Plans & Geometry

The Engineer will:

1. Develop and revise the Proposed Typical Sections Sheets for the temporary design condition of Segment 01A, including new typical sections for the Westbound Direct Connector Entrance Ramp, Segment 1 Westbound Mainlanes, Segment 1 Eastbound Frontage Road. Add Mainlane, Cross Street and Frontage Road Transition Sections and revise the completed 100% Proposed Typical Sections Sheets to reflect a permanent condition for the Segment 01A project.
2. No changes in scope.
3. Develop and revise the Mainlane Roadway Plan and Profile sheets for the temporary design condition of Segment 01A depicting the proposed construction of the 290 East Toll main-lanes, frontage roads, ramps, and temporary transitions in the plan view. Revise the Mainlane Plan and Profiles to depict the permanent condition for the Segment 01A project, including revised transitions to meet higher design speeds. Drawing will be prepared at a scale of 1"=100' H and 1"=20'V.
4. Complete Frontage Road Plan and Profile Sheets for the temporary design condition of Segment 01A separate from the main-lanes, depicting the area in the plan view from main-lane centerline out for each direction. Create additional Frontage Road Plan and Profile sheets to define beginning and end limits at adjacent Segment 1 and Segment 2 projects. Revise the Frontage Road Plan and Profile Sheets to depict the permanent condition for the Segment 01A project. Drawings will be prepared at a scale of 1"=100' H and 1"=10'V.
5. Prepare Cross Street Plan and Profiles and Intersection Details for Tuscany Way and Springdale Road for the temporary design condition of Segment 01A showing spot

elevations and contours. Revise the Cross Street Plan and Profiles and Intersection Details to depict the permanent condition for the Segment 01A project.

6. Complete Ramp Plan and Profile sheet for the Westbound Direct Connector entrance ramp.
7. Develop Ramp Gore Layout for the Westbound Direct Connector entrance ramp at the intersection of the ramp with its adjacent roadways.
8. Prepare Horizontal Alignment Data Sheets for the temporary design condition of Segment 01A depicting the horizontal geometric information for the project roadways to be included in the construction plan set, adding the Westbound Direct Connector Ramp alignment and revising the mainlane, eastbound and westbound frontage road alignments within the Segment 01A project limits. Revise the Horizontal Alignment Data Sheets to depict the permanent condition for the Segment 01A project and include the mainlane and frontage road transitions.
9. Develop Superelevation Data Sheet for the temporary design condition of Segment 01A to be included in the PS&E set. This sheet will define the pavement cross slopes for individual roadway alignments and describe transition locations and values. Revise the Superelevation Data Sheet to include the mainlane and frontage road transitions for the permanent condition of Segment 01A project.
10. Prepare Removal Plan Sheets at a 1"=100' scale for Segment 01A. Removal sheets shall clearly indicate pavement and other pertinent items to be removed. Revise sheets to include the Segment 1 limits and project removals.
11. Develop Pedestrian and Bicycle Facilities. Prepare plan and profile sheets for the temporary design condition of Segment 01A for the Shared-Use Path with details relating to the construction of the path. Incorporate Segment 1 plan and profile sheets into the Segment 01A plan set.

C. Grading and Details

The Engineer will:

1. Prepare Design Cross Sections at 100-foot stations and other locations as necessary for the determination of cut and fill quantities for the temporary design condition of Segment 01A and new pavement structure design. Revise the Design Cross Sections to include the mainlane and frontage road transitions for the permanent condition of Segment 01A project.
2. No changes in scope.
3. No changes in scope.
4. Develop Miscellaneous Roadway Detail sheets for the temporary design condition of Segment 01A. Sheets will depict details required that are not defined in TxDOT standard detail sheets. When possible Statewide TxDOT or Austin District standard will be used for the project development.
5. No changes in scope.(Hardscape details for Project 01A to be included in Project 2)
6. No changes in scope.

D. Segment 01A CADD revisions – update various Roadway Plan sheets (Project Layouts, Existing Typical Sections, Frontage Road Plan and Profiles, Cross Street Plan and Profiles, Shared Use Path Plan and Profiles) to address the proposed revisions to the completed 100% Segment 01A Roadway Plans, consisting of background reference updates, sheet callout references, and revised limits of construction.

1.10 Drainage Design

A. No changes in scope.

B. Drainage Impact Study: Update Study to reflect a model of Segment 01A limits and potential impacts.

C. Bridge and Culvert Plan Sheets

1. Hydraulic Data Sheets: The Engineer will create hydraulic data sheets for mainlane bridges over Walnut Creek and Walnut Creek Tributary and for cross culverts A and B within the Segment 01A project.
2. External Drainage Area Maps: The Engineer will prepare exterior drainage area map sheets for the design condition of Segment 01A.
3. Culvert Layouts: the Engineer will update culvert plan and profile layouts for cross culverts A and B for the temporary design condition of Segment 01A.

D. Storm Drain Plan Sheets

The Engineer will address the required project storm drain systems as follows:

1. Storm Drain Computations: The Engineer will revise and update Runoff, Inlet, and Conveyance Computations for the temporary design condition of Segment 01A. Add computation sheets for temporary ties to the Segment 2 storm sewer system. Design additional temporary ditches and culverts to accommodate the Segment 01A limits. Computations and design information will be presented in the appropriate plan sheets. Revise the Computations to accommodate the bridge overbuild and pavement transitions for the permanent condition of Segment 01A project.
2. Interior Drainage Area Maps: The Engineer will create interior drainage area map plan sheets for the temporary design condition of Segment 01A at an appropriate scale. Revise the Drainage Area Maps to accommodate the bridge overbuild and pavement transitions for the permanent condition of Segment 01A project.
3. Drainage Plan and Profile Sheets: The Engineer will revise and update the drainage plan and profile sheets for the temporary design condition of Segment 01A depicting locations of temporary inlets, manholes, storm drains, culverts, utilities, channel improvements, ditch locations, cross-sections and flowlines as required. Create additional Drainage Plan and Profile sheets to accommodate Segment 1 drainage areas. Revise the Drainage Plan and Profile Sheets to accommodate additional flow from the bridge overbuild and pavement transitions for the permanent condition of

Segment 01A project.

4. Lateral Profiles Sheets: The Engineer will revise the Lateral Profile Sheets for the temporary design condition of Segment 01A for the enclosed storm drain systems. Create new Lateral Profile Sheets to detail additional laterals for the temporary limits of Segment 01A. Revise and update the 100% Segment 01A Lateral Profile Sheets, and create additional lateral profiles to accommodate revised pavement limits and transitions for the permanent condition of Segment 01A project.
5. Ditch Layout Schedule: The Engineer will prepare a tabular ditch layout schedule for the temporary design condition of Segment 01A that depicts pertinent information about the roadside ditch geometry and design. Revise the Ditch Layout Schedule to accommodate the permanent condition of Segment 01A.
6. Drainage Detail Sheets: The Engineer shall use TxDOT standard details where practical. The Engineer shall provide drainage design for the temporary design condition of Segment 01A for "non-standard" drainage structures in instances where TxDOT standard details cannot be utilized. Revise Drainage Detail Sheets to accommodate the permanent condition of Segment 01A.
7. Temporary Drainage Facilities: The Engineer will prepare additional sheets to develop temporary drainage facilities plans for the temporary design condition of Segment 01A necessary to allow staged construction of the Segment 01A project.
8. Trench Protection Determination: The Engineer will identify additional storm drain and culvert construction areas for the temporary design condition of Segment 01A that will require trench protection or special shoring and indicate this information on the plans.

E. Scour Analysis

The Engineer will conduct scour analysis of Walnut Creek and Walnut Creek Tributary crossings for contraction scour conditions and local scour of piers and abutments for the Segment 01A design and will provide estimates of total scour depth for use in the design process.

F. Storm Water Pollution Prevention Plan (SW3P)

1. Erosion and Sediment control plans: The Engineer will develop a temporary erosion and sediment control plan for the temporary design condition of Segment 01A that compliments the design and construction phasing of the Segment 01A project, and will include notes that the contractor is responsible for detailed sequencing of the devices. The Engineer will update and revise the completed 100% Segment 01A Erosion and Sediment control plans to address the bridge overbuild and pavement transition revisions.
2. SW3P: The Engineer will prepare a SW3P summary plan sheet for the Segment 01A design.
3. No changes in scope.
4. No changes in scope.

G. No changes in scope.

H. Deliverables
The Engineer shall provide 100% drainage design, plan sheets, reports, and models as described in Exhibit B, Scope of Services for the temporary design condition of Segment 01A. Engineer will provide additional deliverable to revise and update the completed 100% Segment 01A drainage plans to address the bridge overbuild and pavement transition revisions.

1.11 Structural Design

Prepare 100% bridge plans as described in Exhibit B, Scope of Services for the Eastbound Mainlane Tuscany/Springdale Overpass. Update the completed design and details to accommodate an additional 14 foot change in bridge width.

A. Bridge Layouts: The Engineer shall update RDS for the change in bridge geometry. The Engineer shall coordinate changes in column spacing, beam spacing, and deck dimensions with project team.

B. Final Design Calculations and Details: The Engineer shall update final design calculations and final detail drawings.

C. Summary of Bridge Quantities: The Engineer shall update bridge quantity summaries and bearing seat elevations.

D. Abutment Details: The Engineer shall update the design and details to account for new beam spacing and the addition of the MSE retaining wall in the median.

E. Foundation Details: The Engineer shall update the design and details for the modifications made to the bridge design.

F. Interior Bent Details: The Engineer shall update the design and details to account for the change in bent length, column spacing, and beam spacing.

G. Framing Plan: The Engineer shall update the beam spacing and data tables.

H. Slab Plan: The Engineer shall update the design and details for the increase in slab width and beam spacing.

I. Drainage Details: The Engineer shall update the drainage quantities as necessary.

J. Modified Bridge Standard Details: The Engineer shall update the IBND sheets accordingly.

K. Context Sensitive Design Coordination: The Engineer shall coordinate with project team concerning details and the development of project standards.

1.12 Retaining Wall Design

EXHIBIT B-1A
SEGMENT #01A – LJA Engineering & Surveying, Inc.

A. The engineer shall revise and update the layouts for (scale Max:1"=40' and min: 1"=100'), elevations, quantity estimate, summary of quantities, typical cross sections, and structural details of all retaining walls within the limits of the temporary design condition of Segment 01A.

1. The Engineer shall determine if any additional walls are required within the limits of the Segment 01A project and verify the need for and length of the retaining walls. The proposed new and revised Segment 01A retaining walls are noted in the Proposed Retaining Wall Table below.
2. The Engineer will prepare additional Retaining Wall Layout Sheets identified in the Proposed Retaining Wall Table below for the temporary and permanent design conditions of Segment 01A showing plan and profile of retaining walls. The Engineer will update the Retaining Wall Layout Sheets to illustrate the permanent condition of Segment 01A.
3. Prepare corner details as needed for cutback walls (RW05A, RW07A, and RW06A) until future retaining wall completion
4. Engineer will identify temporary shoring needs within the limits of the temporary design condition of Segment 01A and prepare layouts as necessary. Revise and add temporary shoring to accommodate the revised mainlane transitions.
5. No changes in scope.
6. No changes in scope.
7. No changes in scope.
8. Proposed additional and revised retaining walls for Segment 01A:

Description	Location (STA)	Orientation	Length	Type
RW01 (revise to match Segment 1 retaining wall)	265+00 - 274+50	Right	950	MSE
RW03 (revise to a partial build, revise for WBTR01 transition)	265+00 - 271+00	Left	600	MSE
RW05 (revise abutment wall to a partial build)	274+50	Abut	110	MSE
RW05A (added for permanent Segment 01A condition)	271+00 – 274+50	Left	350	MSE
RW06 (revise to a partial build, revise for EBTR01 transition)	292+50 – 295+00	Right	250	MSE
RW06A (added for permanent Segment 01A condition)	295+00	Right	25	MSE
RW06B (added for permanent Segment 01A condition)	295+00 – 297+00	Right	200	MSE
RW07 (revise abutment wall to a partial build)	293+00	Abut	120	MSE
RW07A (added for permanent Segment 01A condition)	293+00 – 295+00	Left	200	MSE
RW08 (revise to accommodate TxDOT comment)	293+50 – 300+00	Left	650	MSE
RW08A (added for permanent Segment 01A condition)	294+00 – 300+00	Left	600	MSE

B. Compute and Summarize Quantities – Retaining Walls. The Engineer shall provide the summaries and quantities within all Segment 01A formal submittals.

C. No changes in scope.

D. Segment 01A CADD revisions – update various Retaining Wall Plan sheets (Overall

Retaining Wall Layouts, Boring Logs, Design Parameters, Retaining Wall Alignments) to address the proposed revisions to the completed 100% Segment 01A Roadway Plans, consisting of background reference updates, sheet callout references, and revised limits of construction.

1.13 Signing, Markings and Signalization

A. Review the Preliminary Signage Concept Plan prepared by the GEC. The Engineer will review/revise additional Signage Concept Plans to incorporate TxDOT recommendations. The Engineer will prepare a preliminary signing schematic for the proposed Segment 01A project.

B. Signing and Pavement Marking Layouts: The Engineer shall prepare pavement marking layouts, specifications, and details for pavement markings for the Segment 01A project. The Engineer will revise the completed 100% Segment 01A plans to address TxDOT recommendations. The pavement markings on the mainlanes, ramps and sidestreets shall consist of raised pavement markers to allow for removal when Segment 2 is constructed. The Engineer shall coordinate with the GEC (and other Engineers as required) for overall temporary and final signing strategies including toll signing and placement of signs outside contract limits. The Engineer shall prepare drawings, specifications and details for permanent signs for Segment 1A. Permanent small signs shall be depicted on the Eastbound Frontage Road and mainlane pavement marking layouts. It is assumed that this includes a maximum of six (6) large guide signs and their associated structures.

The Engineer shall provide the following information on signing and pavement marking layouts for the Segment 01A project:

1. No changes in scope
2. No changes in scope
3. No changes in scope
4. No changes in scope
5. No changes in scope
6. No changes in scope
7. No changes in scope
8. No changes in scope
9. No changes in scope
10. The Engineer shall detail permanent and temporary pavement markings and channelization devices on plan sheets for the Segment 01A project. Pavement marking plans shall also be prepared for toll gantry areas within the limits of the project. The Engineer shall provide details for toll gantry locations in the pavement marking plans. The Engineer shall coordinate with the GEC (and Toll Systems Integrator if necessary) for overall temporary, interim, and final pavement marking strategies. Pavement markings shall be selected from the latest TxDOT standards.
11. No changes in scope
12. No changes in scope

13. No changes in scope
14. No changes in scope

C. No changes in scope.
D. No changes in scope.

E. Signing Summaries: Engineer shall provide sign summary sheets at 60%, Pre-Final and Final Plan submittals of the Segment 01A project. The Engineer will revise the completed 100% Segment 01A plans to address TxDOT recommendations.

F. Large Signing Details: Engineer shall provide details for large signs for the Segment 01A plan set. The Engineer will provide additional structural information for three signs moved from temporary to permanent structures.

G. Compute and Summarize Quantities – Signing, Pavement Markings: Engineer shall provide quantity summary sheets at 60%, Pre-Final and Final Plan submittals of the Segment 01A project. The Engineer will revise the completed 100% Segment 01A plans to address TxDOT recommendations and provide permanent raised pavement markings

H. No changes in scope.

I. Traffic Signal Plans – Existing and Proposed: Prepare plans in response to TxDOT and City of Austin Pre-Final design recommendations. The scope will consist of preparing traffic signal plans for the permanent signals to be installed along the Eastbound Frontage Road at Tuscany and Springdale intersections in the Segment 01A plans. The Engineer will prepare additional sheets for the permanent Westbound Frontage Road signal poles and foundations to be installed along the existing US 290 Westbound Mainlane intersections at Tuscany Way and Springdale Road. The Engineer shall coordinate this activity with the City of Austin.

The following information shall be provided in the Traffic Signal Plans for the Segment 01A project:

1. No changes in scope.
2. No changes in scope.
3. No changes in scope.
4. Phase sequence diagram(s)
   a. Prepare phase sequence diagrams. Assist the GEC in coordination with the City of Austin regarding signal phasing, timing and operations of the signals.
5. Construction detail sheet(s)
   a. Poles (TxDOT standard sheets – no dual mast arm design)
   b. (VIVDS) Layouts (temporary conditions/traffic control phasing)
   c. Video Detectors (temporary conditions/traffic control phasing)
   d. Pull Box and conduit layout

e. Controller foundation standard sheet (include both NEMA and 2070 foundations)
f. Loop Detector Layout (permanent construction)

6. No changes in scope.
7. Electrical and ITS
   a. Wireless radio interconnect for immediate operations (when applicable).
   b. Aerial or underground interconnect details (when applicable).
   c. Confirm power source.
   d. Electrical summary table.

J. No changes in scope.

K. Temporary Traffic Signal Plans: Engineer shall prepare temporary signal plans for the Segment 01A project. These locations to include existing US 290 Westbound Mainlane intersections at Tuscany Way and Springdale Road. Temporary signal plans shall be provided based on the Segment 01A traffic control phasing

1.14 Traffic Control Plan

The Engineer will:

A. Review the Preliminary Construction Sequencing Concept Plan prepared by the GEC for the Segment 01A project and ensure compatability with the Segment 2 project. The Engineer will update the concept plan for Segment 01A to accommodate revised transitions and the overbuild of the Tuscany/Springdale bridge overpass.

B. Prepare Traffic Control Typical Sections for each stage of the construction sequence for the Segment 01A project to clearly delineate the position of the existing traffic with respect to the proposed construction.

C. Develop TCP Overview Plans for each stage of traffic control for the Segment 01A project.

D. Prepare Advanced Warning Sign Layouts for the Segment 01A project.

E. Prepare Detailed Traffic Control Plan Sheets for the Segment 01A project.

F. Prepare a detailed Sequence of Construction narrative for the Segment 01A project and submit it to the GEC for review.

G. Prepare Detour Layout Sheets for the Segment 01A project showing plan & profiles where required to define the geometry for detours required in the traffic control plans.

H. Prepare Temporary Shoring Profiles for temporary shoring required during construction for the Segment 01A project. Revise Temporary Shoring Profiles to accommodate the

revised mainlane transitions.

I. Develop Traffic Control Details for the Segment 01A project for items not covered by TxDOT standard drawings.

J. No changes in scope.

K. Prepare an Engineer's Opinion of Construction Schedule for the Segment 01A project to determine an approximate duration for each phase of construction.

L. TCP Detours and Temporary Signals: The Engineer shall prepare temporary signal layouts for the Segment 01A project if necessary to accommodate the proposed traffic control plan.

M. No changes in scope.

N. Advanced Signing Layouts. The Engineer shall provide a detailed layout and arrangement of construction signs for the Segment 01A project.

O. Compute and Summarize Quantities – TCP, the Engineer shall provide summary of TCP quantities at the 60%, Pre-Final and Final Plan submittals for the Segment 01A project.

P. Segment 01A CADD revisions – update various Traffic Control Plan sheets (TCP Overviews, Advance Warning Sign Layouts, Detailed Traffic Control Phasing Sheets, Shoring Profiles) to address the proposed revisions to the completed 100% Segment 01A TCP Plans, consisting of background reference updates, sheet callout references, and revised limits of construction.

1.15 Traffic Management System – No changes in scope.

1.16 Illumination

The Engineer will provide all lighting and electrical services necessary to complete the lighting plans portion for the Segment 01A design as follows:

1. Re-locate poles for transition alignment changes.
2. Re-calculate voltage drops as necessary.
3. Re-calculate Electrical Services as necessary.
4. Re-calculate Quantities as necessary.
5. Prepare Plan Sheets for 100% and Final mylar submittal.
6. Address 100% and Final comments from CTRMA/GEC.

1.17 Toll Facility Design

The Engineer will prepare the Toll Facility design documents for the Segment 01A project. The following additional roadway and civil tasks for the toll facilities are required to accommodate changes in the roadway configuration:

1. Review and evaluate the latest design for Segment 1A transition design.
2. Review, coordinate and prepare master design files for toll location.
3. Revise and prepare toll plan facilities layout and toll gantry plan sheets.
4. Revise and prepare toll gantry typical sections based on the new transition design.
5. Revise and prepare joint, loop and conduit detail sheets based on the new transition design. Two sheets will be needed for these details.
6. Revise and prepare toll gantry conduit plan.
7. Update Temporary Gantry Foundation Plan and foundation design,
8. Update framing plan and gantry truss design,
9. Update Gantry Elevation and column design
10. Update OSBT(MOD) for new span length
11. Revise and prepare toll gantry cross sections based on the new transition design.
12. Revise and Coordinate Toll facility design elements with roadway, ITS, drainage, illumination, utilities, and toll gantry structure designers.
13. Compute and Summarize revised Quantities – Toll Gantry: The Engineer shall provide revised summary of quantities at the 100% and Final plan submittals.
14. Prepare Toll facility plans for 100% submittal.
15. Address any comments from CTRMA/GEC.
16. Prepare Toll facility plans for final submittal

1.18 Miscellaneous

A. Quantities and Summary Sheets

The Engineer will tabulate quantities and prepare Summary Sheets to accommodate changes in the Segment 01A roadway configuration. Update the completed 100% Segment 01A quantities and summaries to address TxDOT recommendations.

B. Standards, Specifications and Estimate

The Engineer shall:

1. Download the appropriate TxDOT Standards from the State's website to accommodate changes in the Segment 01A roadway configuration. The Engineer will coordinate with the GEC to incorporate updates in TxDOT standards due to extension in time
2. The Engineer shall provide (signed and sealed) any necessary details required to supplement standard details to accommodate changes in the Segment 01A roadway configuration.
3. Prepare a tabulation of applicable Specifications, Special Specifications and Special

Provisions for the Segment 01A project for submission with the final PS&E package. Revise the completed 100% Segment 01A specification lists to address TxDOT recommendations.

4. Review General Notes provided by the GEC for applicability for the Segment 01A project. The Engineer will mark-up a set and return it to the GEC for their inclusion in the final plan set. Revise the completed 100% Segment 01A general notes to address TxDOT recommendations.

5. Prepare Construction Cost Estimates for the Segment 01A plan set at the 60% PS&E, Pre-Final and final PS&E submittal. Revise the completed 100% Segment 01A construction cost estimate to address TxDOT recommendations.

C. No changes in scope.

1.19 Coordination, Meetings & Invoicing

A. The Engineer will attend one (1) revised project Kick-off meeting for the Segment 01A project.

B. The Engineer will participate and attend ten (10) additional bi-weekly design coordination meetings for development of the Segment 01A project. Attend ten (6) additional meetings with Segment 1 Engineer for coordination of Segment 1 and Segment 01A. Facilitate and participate in ten (10) additional internal coordination meetings for the development of Segment 01A PS&E.

C. The Engineer will need to participate in the review process and attend comment resolution meetings for Segment 01A submittal milestones. The Engineer will participate in four (4) additional review processes for the Segment 01A project development.

D. The Engineer will coordinate with the Segment 1 Engineer to incorporate Segment 1 plans into the Segment 01A 100% submittal and perform additional QA/QC reviews to ensure accuracy and completeness of the Segment 1 plans. The Engineer will provide an additional QA/QC review of the 100% Segment 01A plans.

E. No changes in scope.

F. Provide additional invoices and progress reports due to extension in time.

G. No change in scope.

H. No change in scope.

1.20 Construction Phase Services - No changes in scope.

EXHIBIT B-1B
SEGMENT #2 – LJA Engineering & Surveying, Inc.

SUPPLEMENTAL SCOPE OF SERVICES
TO BE PROVIDED BY THE SEGMENT ENGINEER

Amend Exhibit B, Scope of Services, to provide a 60% set of plans for the completion of Segment 2 for CTRMA. Refer to the 290 East Project Manual and 290E Segment 2 60% Design Deliverables memorandum detailing the 60% design deliverables. Revise and update the current Segment 2 plans to incorporate the Segment 01A final design.

The Segment Engineer, herein referred to as the "Engineer", shall be responsible for the work outlined in this Scope of Services.

1.09 Roadway Design

A. Basic Plan Sheets

The Engineer will:

1. Prepare the PS&E Title Sheet for the 60% submittal of Segment 2 project.
2. Complete the detailed Index of Sheets for the 60% submittal of Segment 2.
3. Prepare Project Layout Sheets to a 60% design. Revise the Segment 2 Project Layout Sheets to accommodate the Segment 01A project limits.
4. Prepare Benchmark Layout Sheets to a 60% design.

B. Roadway Plans & Geometry

The Engineer will:

1. Develop Proposed Typical Sections Sheets to a 60% design completion. Create and revise the proposed Segment 2 typical sections to accommodate the Segment 01A project limits.
2. Complete Existing Typical Sections Sheets to a 60% design. Update the Segment 2 existing typical sections to include the Segment 01A project limits.
3. Complete Mainlane Roadway Plan and Profile sheets to a 60% design completion. Revise the Segment 2 Mainlane Plan and Profiles to accommodate the Segment 01A design.
4. Complete Frontage Road Plan and Profile Sheets to a 60% design completion. Revise the Segment 2 Frontage Road Plan and Profiles to accommodate the Segment 01A design.
5. Prepare Cross Street Plan and Profiles and Intersection details to a 60% design completion. Revise the Segment 2 Cross Street Plan and Profiles and Intersection Details to accommodate the Segment 01A intersection design at Springdale Road and Tuscany Way
6. Complete separate Ramp Plan and Profile sheets to a 60% design completion.
7. Develop Ramp Gore Layouts to a 60% design.
8. No changes in scope.
9. No changes in scope.

10. Removal Plan Sheets will not be prepared for the 60% submission. Removal quantities including Segment 01A revisions will be estimated and included with the 60% submission.
11. Develop Pedestrian and Bicycle Facilities. Prepare plan and profile sheets to a 60% design completion for the Shared-Use Path with details relating to the construction of the path. Revise the Segment 2 Shared Path Plan and Profiles to accommodate the Segment 01A design.

C. Grading and Details

The Engineer will:

1. Prepare Design Cross Sections to a 60% design completion. Revise the Segment 2 Design Cross Sections to accommodate the Segment 01A design.
2. No changes in scope.
3. Develop Driveway Profiles to a 60% design.
4. Develop Miscellaneous Roadway Detail sheets to a 60% design.
5. Develop Hardscaping Details to a 60% design. Revise the Hardscaping Details to accommodate the Segment 01A intersection design at Springdale and Tuscany.
6. No changes in scope.

1.10 Drainage Design

A. No changes in scope.

B. No changes in scope.

C. No changes in scope.

D. Storm Drain Plan Sheets

The Engineer will address the required project storm drain systems as follows:

1. Storm Drain Computations: The Engineer will analyze and design both open channel (ditches) and enclosed storm drains to a 60% design completion. Revise the Segment 2 Storm Drain Computations to accommodate the Segment 01A design.
2. Interior Drainage Area Maps: The Engineer will prepare interior drainage area map plan sheets to a 60% design. Revise the Segment 2 Drainage Area Maps to accommodate the Segment 01A design.
3. Drainage Plan and Profile Sheets: The Engineer will prepare drainage plan and profile sheets to a 60% design. Revise the Segment 2 Drainage Plan and Profile Sheets to accommodate the Segment 01A design.
4. Lateral Profiles Sheets: The Engineer will prepare lateral profile sheets to a 60% design completion for the enclosed storm drain systems. Revise the Segment 2 Lateral Profile Sheets to accommodate the Segment 01A design.
5. Ditch Layout Schedule: The Engineer will design additional special ditches to

accommodate the Segment 01A design.

6. Drainage Detail Sheets: The Engineer shall provide additional drainage details to accommodate the Segment 01A design.
7. Temporary Drainage Facilities: The Engineer will develop temporary drainage facilities plans necessary to allow staged construction of the project. Additional temporary drainage facilities anticipated to accommodate the Segment 01A design.
8. No changes in scope.

E. No changes in scope

F. Storm Water Pollution Prevention Plan (SW3P) Sheets will not be prepared for the 60% submission. SW3P quantities including the Segment 01A revisions will be estimated and included with the 60% submission.

G. No changes in scope.

H. Deliverables

The Engineer will update the CADD elements for the various Drainage plan sheets to incorporate the Segment 01A design and limits. The Engineer shall deliver a 60% drainage design as detailed in the 290 East Project Manual and the 290E Segment 2 60% Design Deliverables memorandum.

1.11 Structural Design

The Engineer will prepare a 60% bridge design for the remaining Segment 2 structures identified in Exhibit B, Scope of Services not designed with the Segment 01A project.

A. Bridge Layouts: shall be complete except for foundation information.

B. Final Design Calculations and Details: The Engineer shall prepare a 60% bridge design and detail drawings in accordance with standard requirements of TxDOT. The 60% bridge design shall meet the level of detail provided in the 60% Segment 01A structural submittal.

C. Proposed Bridge Limits Table: "EBML Tus/Spr Overpass", "WBML Over Wal Crk & Wal Crk Trib", and "EBML Over Wal Crk & Wal Crk Trib" to be designed to 100% and included with the Segment 01A project.

D. Summary of Bridge Quantities: Bearing Seat and Estimated Quantity Sheets: No bearing seat elevations to be provided. Only bid items shown with no quantities.

E. Abutment Details: complete except for rebar lengths and quantities, concrete quantity to be shown.

F. Interior Bent Details: all dimensions to be shown, typical rebar pattern to be shown, concrete quantity to be shown. Rebar spacing, lengths and quantities not to be provided.

G. Beam Layouts: essentially complete showing data from RDS. Prestressed Concrete Beam Design Sheets: one provided per bridge, essentially complete.

H. Prestressed Beam Unit Sheets: essentially complete except for dead load deflections and haunch details. Concrete slab quantity shown. Class "S" concrete or rebar quantities not to be provided.

I. Deck Drainage Details: essentially complete.

J. Miscellaneous Details: essentially complete

K. Standard Details: essentially complete

M. No changes in scope

1.12 Retaining Wall Design

A. Retaining Walls. The Engineer shall provide layouts to incorporate the Segment 01A design and limits.

1. No changes in scope.
2. Engineer will prepare Segment 2 retaining wall layout sheets showing plan and profile of retaining walls to a 60% design completion. Revise the retaining wall layouts identified below to accommodate the Segment 01A retaining wall partial build condition.
3. Engineer will prepare structural details to a 60% design completion for non-proprietary wall designs, (i.e., tie-back, soil nailed, drilled shaft).
4. Engineer will identify temporary shoring needs and prepare layouts to a 60% design completion as necessary.
5. No changes in scope.
6. No changes in scope.
7. No changes in scope.
8. Retaining walls to be revised and updated for Segment 2:

Description	Location (STA)	Orientation	Length	Type
RW03 (complete Segment 01A partial build)	265+00 - 271+00	Left	600	MSE
RW05 (complete Segment 01A partial build)	274+50	Abut	110	MSE
RW06 (complete Segment 01A partial build)	292+50 – 295+00	Right	250	MSE
RW07 (complete Segment 01A partial build)	293+00	Abut	120	MSE
RW08 (revise to accommodate Segment 01A limits)	293+50 – 300+00	Left	650	MSE

B. Compute and Summarize Quantities - Retaining Walls. The Engineer shall provide the 60% design summaries and quantities.

C. No changes in scope.

D. No changes in scope.

1.13 Signing, Markings and Signalization

A. No changes in scope.

B. Signing and Pavement Marking Layouts: The Engineer shall revise layouts, specifications, and details for pavement markings and signs to incorporate the Segment 01A design into a 60% completion of Segment 2.

The Engineer shall provide the following information on signing and pavement marking layouts:

1. No changes in scope.
2. No changes in scope.
3. No changes in scope.
4. No changes in scope.
5. No changes in scope.
6. Existing signs to removed will be quantified but not shown.
7. No changes in scope.
8. No changes in scope.
9. No changes in scope.
10. No changes in scope.
11. No changes in scope.
12. No changes in scope.
13. No changes in scope.
14. No changes in scope.

C. No changes in scope.

D. Compute and Summarize Quantities - Overhead Signs: Engineer shall provide quantity summary sheets to incorporate the Segment 01A design and limits into a 60% completion of Segment 2.

E. Signing Summaries: Engineer shall provide sign summary sheets to incorporate the Segment 01A design and limits into a 60% completion of Segment 2.

F. No changes in scope.

G. No changes in scope.

H. No changes in scope.

I. Traffic Signal Plans - Existing and Proposed: Prepare plans in response to TxDOT and City of Austin Pre-Final design recommendations. The scope will consist of preparing traffic signal plans to incorporate the Segment 01A design into a 60% completion of Segment 2.

The following information shall be provided in the Traffic Signal Plans:

1. No changes in scope.
2. No changes in scope.

3. No changes in scope.
4. Phase sequence diagram(s)
   a. Prepare phase sequence diagrams. Assist the GEC in coordination with the City of Austin regarding signal phasing, timing and operations of the signals.
5. Construction detail sheet(s)
   a. Poles (TxDOT standard sheets – no dual mast arm design)
   b. (VIVDS) Layouts (temporary conditions/traffic control phasing)
   c. Video Detectors (temporary conditions/traffic control phasing)
   d. Pull Box and conduit layout
   e. Controller foundation standard sheet (include both NEMA and 2070 foundations)
   f. Loop Detector Layout (permanent construction)
6. No changes in scope.
7. Electrical and ITS
   a. Wireless radio interconnect for immediate operations (when applicable).
   b. Aerial or underground interconnect details (when applicable).
   c. Confirm power source.
   d. Electrical summary table.

J. No changes in scope.

K. Temporary Traffic Signal Plans: Engineer shall prepare temporary signal plans where applicable. Temporary signal plans to be revised to accommodate revised TCP phasing for Segment 2.

1.14 Traffic Control Plan (TCP)

The Engineer will:

A. Review the Preliminary Construction Sequencing Concept Plan prepared by the GEC. Revise and update the original Concept Plan to accommodate the Segment 01A project.

B. Prepare TCP Typical Sections to a 60% design completion for each stage of the construction sequence to clearly delineate the position of the existing Segment 01A traffic with respect to the proposed construction. Revise and update the TCP Typical Sections to accommodate the Segment 01A project and limits.

C. Develop TCP Overview Plans to a 60% design completion for each stage of traffic control. Revise and update the TCP Overview Plans to accommodate the Segment 01A project and limits.

D. Prepare Advanced Warning Sign Layouts to a 60% design completion for the 290 East Toll Project and all cross streets. Revise and update the TCP Advanced Warning Sign Layouts to accommodate the Segment 01A project and limits.

E. Prepare Detailed Traffic Control Plan Sheets to a 60% design completion. Revise and update the Detailed TCP Sheets to accommodate the Segment 01A project and limits.

F. Prepare a detailed Sequence of Construction Narrative to a 60% design completion and submit it to the GEC for review. Revise and update the Narrative to accommodate the Segment 01A project.

G. Prepare Detour Layout Sheets to a 60% design completion showing plan & profiles where required to define the geometry for detours required in the traffic control plans. Revise and update the Detour Layout Sheets to accommodate the Segment 01A project and limits. Create additional detours as needed to maintain Segment 01A traffic movements.

H. Prepare Temporary Shoring Profiles to a 60% design completion for temporary shoring required during construction. Revise and update the Temporary Shoring Profiles to accommodate the Segment 01A project and limits. Create additional Shoring Profiles as needed to maintain Segment 01A traffic movements.

I. No changes in scope.

J. No changes in scope.

K. No changes in scope.

L. No changes in scope.

M. No changes in scope.

N. No changes in scope.

O. Compute and Summarize Quantities- TCP. The Engineer shall provide summary of TCP quantities for the 60% submittal.

1.15 Traffic Management System

Intelligent Vehicle Highway Systems: Utilize the ITS Concept to provide 60% grading plans for the ITS HUB building. Others will design duct bank, pull boxes, etc.

1.16 Illumination

The Illumination design documents will be prepared by the Segment 1 Consultant for the entire corridor as a single set of illumination plans for all three segments and incorporate into the PS&E package. The Engineer shall coordinate and provide 60% plan drawings showing the locations of roadway and other facilities designed for Section 2.

1.17 Toll Facility Design

The Toll facility design documents will be prepared by the Segment 3 Consultant and incorporated into the PS&E package. The Engineer shall coordinate and provide 60% plan drawings showing the locations of roadway and other facilities designed for Segment 2.

1.18 Miscellaneous

A. Quantities and Summary Sheets

The Engineer will tabulate quantities and prepare Summary Sheets for a 60% design submittal .

B. Standards, Specifications and Estimate

The Engineer shall:

1. Download the appropriate TxDOT Standards from the State's web site. The Engineer will revise and seal any Standard that requires modification for the Segment 2 design. The Engineer will coordinate with the GEC to accommodate updates in TxDOT standards due to extension in time.
2. The Engineer shall provide (signed and sealed) any necessary details required to supplement standard details to accommodate the Segment 2 project and limits.
3. Specifications, Special Specifications and Special Provisions will not be provided with the final 60% PS&E submittal.
4. General Notes will not be provided with the final 60% PS&E submittal.
5. Prepare a Construction Cost Estimate for the 60% PS&E submittal and supply a copy to the GEC in Microsoft Excel format.

C. Deliverables

The Engineer will submit ten (10) 11" X 17" paper copies for the 60% PS&E submittal.

1.19 Coordination, Meetings & Invoicing

A. No changes in scope.

B. The Engineer will need to participate and attend additional monthly and bi-weekly design coordination meetings and production meetings as further detailed in the 290 E Project Manual. The Engineer shall also participate in additional meetings (bi-weekly) with the Engineer's internal team of sub-consultants. Engineer will participate and attend additional design coordination meetings due to extension in time.

C. No changes in scope.

D. No changes in scope.

E. No changes in scope.

F. Follow invoice procedures as described in the 290 E Project Manual. Engineer will provide additional invoicing due to extension in time.

G. No changes in scope

H. No changes in scope

1.20 Construction Phase Services – No changes in scope.

SUPPLEMENTAL WORK AUTHORIZATION
C-1

SUPPLEMENTAL WORK AUTHORIZATION NO. 1
TO WORK AUTHORIZATION NO. 1
CONTRACT FOR ENGINEERING SERVICES

EXHIBIT C-1
WORK SCHEDULE

The Engineer will perform engineering services as described in this Work Authorization and will submit deliverables to the Authority based on the following work schedule:

Segment 1A:

Transmittal of completed Final Submittal .....May 28, 2010

Segment 2:

Transmittal of completed 60% Design..... July 30, 2010

Central Texas Regional Mobility Authority
Contract # 08290E22702E
290E Segment 01A and Segment 2

EXHIBIT D-1 FEE SCHEDULE

OVERALL SUMMARY

CATEGORY	TOTALS							
	HOURS				COST			
	Original Effort	Revised Effort			Original Effort	Revised Effort		
		Total	SEG 1A	SEG 2		Total	SEG 1A	SEG 2
1.02 GOVERNMENTAL AGENCY COORDINATION	150	150	0	150	$ 8,566	$ 8,566	$ -	$ 8,566
1.03 DATA COLLECTION	308	308	0	308	$ 14,483	$ 14,483	$ -	$ 14,483
1.04 GEOTECHNICAL INVESTIGATION	2,294	2,294	0	2,294	$ 489,274	$ 489,274	$ -	$ 489,274
1.05 SUPPLEMENTAL SURVEYING	1,305	1,305	0	1,305	$ 148,382	$ 148,382	$ -	$ 148,382
1.06 ROW MAPPING	64	64	0	64	$ 2,912	$ 2,912	$ -	$ 2,912
1.07 UTILITY COORDINATION AND DESIGN	160	160	0	160	$ 6,489	$ 6,489	$ -	$ 6,489
1.08 INITIAL DESIGN AND DCC	3,126	3,132	6	3,126	$ 140,487	$ 140,815	$ 328	$ 140,487
1.09 ROADWAY DESIGN	10,708	11,265	1,736	9,529	$ 428,676	$ 452,415	$ 71,267	$ 381,148
1.10 DRAINAGE DESIGN	9,576	7,668	813	6,855	$ 365,323	$ 301,528	$ 35,737	$ 265,791
1.11 STRUCTURAL DESIGN	21,313	17,338	678	16,660	$ 909,818	$ 738,308	$ 28,265	$ 710,043
1.12 RETAINING WALL DESIGN	3,075	2,607	434	2,173	$ 135,353	$ 115,619	$ 18,916	$ 96,703
1.13 SIGNING, MARKINGS AND SIGNALIZATION	4,927	4,136	1,169	2,967	$ 195,117	$ 164,358	$ 47,025	$ 117,333
1.14 TRAFFIC CONTROL PLAN	3,940	5,112	1,812	3,300	$ 168,248	$ 221,415	$ 78,646	$ 142,769
1.15 TRAFFIC MANAGEMENT SYSTEMS	56	47	12	35	$ 3,349	$ 2,763	$ 670	$ 2,093
1.16 ILLUMINATION	44	151	123	28	$ 2,614	$ 8,351	$ 6,682	$ 1,669
1.17 TOLL FACILITY DESIGN	700	1,338	535	803	$ 26,185	$ 50,112	$ 21,330	$ 28,781
1.18 MISCELLANEOUS	857	1,018	496	522	$ 33,715	$ 41,402	$ 20,712	$ 20,690
1.19 COORDINATION, MEETINGS & INVOICING	2,608	3,616	1,213	2,403	$ 136,453	$ 187,095	$ 62,641	$ 124,453
DIRECT SALARY SUBTOTALS					$ 3,215,445	$ 3,094,285	$ 392,220	$ 2,702,065
OVERHEAD					$ 4,404,420	$ 4,216,738	$ 691,826	$ 3,524,912
PROFIT					$ 838,857	$ 801,793	$ 130,085	$ 671,708
TOTAL LABOR COST					$ 8,458,722	$ 8,112,817	$ 1,214,132	$ 6,898,685
DIRECT EXPENSES					$ 36,937	$ 43,360	$ 7,512	$ 35,848
TOTALS	65,211	61,709	9,027	52,682	$ 8,495,659	$ 8,156,176	$ 1,221,643	$ 6,934,533
DBE PERCENTAGE	26.4%							
OVERALL PERCENTAGES	100.0%							

Central Texas Regional Mobility Authority
Contract # 08290E22702E
290E Segment 01A and Segment 2

EXHIBIT D-1 FEE SCHEDULE

BREAKDOWN BY FIRM

CATEGORY	LJA							
	HOURS				COST			
	Original Effort	Revised Effort			Orlginal Effort	Revised Effort		
		Total	SEG 1A	SEG 2		Total	SEG 1A	SEG 2
1.02 GOVERNMENTAL AGENCY COORDINATION	97	97	0	97	$ 5,224	$ 5,224	$ -	$ 5,224
1.03 DATA COLLECTION	128	128	0	128	$ 5,373	$ 5,373	$ -	$ 5,373
1.04 GEOTECHNICAL INVESTIGATION	72	72	0	72	$ 4,058	$ 4,058	$ -	$ 4,058
1.05 SUPPLEMENTAL SURVEYING	64	64	0	64	$ 3,241	$ 3,241	$ -	$ 3,241
1.06 ROW MAPPING	40	40	0	40	$ 1,952	$ 1,952	$ -	$ 1,952
1.07 UTILITY COORDINATION AND DESIGN	160	160	0	160	$ 6,489	$ 6,489	$ -	$ 6,489
1.08 INITIAL DESIGN AND DCC	1,314	1,314	0	1,314	$ 56,284	$ 56,284	$ -	$ 56,284
1.09 ROADWAY DESIGN	5,044	6,461	1,736	4,725	$ 199,772	$ 259,905	$ 71,267	$ 188,638
1.10 DRAINAGE DESIGN	4,180	3,166	664	2,502	$ 159,496	$ 129,697	$ 30,331	$ 99,366
1.11 STRUCTURAL DESIGN	10,518	8,480	70	8,410	$ 460,736	$ 373,008	$ 3,349	$ 369,659
1.12 RETAINING WALL DESIGN	1,788	1,730	434	1,296	$ 77,536	$ 75,985	$ 18,916	$ 57,069
1.13 SIGNING, MARKINGS AND SIGNALIZATION	0	168	168	0	$ -	$ 8,430	$ 8,430	$ -
1.14 TRAFFIC CONTROL PLAN	3,779	4,975	1,812	3,163	$ 159,679	$ 214,366	$ 78,646	$ 135,720
1.15 TRAFFIC MANAGEMENT SYSTEMS	32	32	12	20	$ 1,829	$ 1,813	$ 670	$ 1,143
1.16 ILLUMINATION	32	56	36	20	$ 1,854	$ 3,135	$ 1,976	$ 1,159
1.17 TOLL FACILITY DESIGN	40	125	100	25	$ 2,405	$ 6,688	$ 5,185	$ 1,503
1.18 MISCELLANEOUS	398	724	480	244	$ 15,271	$ 29,422	$ 19,981	$ 9,441
1.19 COORDINATION, MEETINGS & INVOICING	976	2,089	978	1,111	$ 50,432	$ 107,356	$ 51,049	$ 56,307
DIRECT SALARY SUBTOTALS	28,662	29,881	6,490	23,391	$ 1,211,631	$ 1,292,426	$ 289,800	$ 1,002,626
OVERHEAD	177.70%				$ 2,153,068	$ 2,296,641	$ 514,975	$ 1,781,666
PROFIT	12.00%				$ 403,764	$ 430,688	$ 96,573	$ 334,115
TOTAL LABOR COST					$ 3,768,463	$ 4,019,755	$ 901,348	$ 3,118,407
DIRECT EXPENSES					$ 19,096	$ 24,408	$ 5,801	$ 18,608
TOTALS					$ 3,787,559	$ 4,044,163	$ 907,149	$ 3,137,015
DBE PERCENTAGE								
OVERALL PERCENTAGES	49.6%							

Central Texas Regional Mobility Authority
Contract # 08290E22702E
290E Segment 01A and Segment 2

EXHIBIT D-1 FEE SCHEDULE

BREAKDOWN BY FIRM

CATEGORY	RTG*			
	HOURS		COST	
	Original Effort	Revised Effort	Original Effort	Revised Effort
1.02 GOVERNMENTAL AGENCY COORDINATION	53	53	$ 3,342	$ 3,342
1.03 DATA COLLECTION	112	112	$ 5,848	$ 5,848
1.04 GEOTECHNICAL INVESTIGATION	16	16	$ 960	$ 960
1.05 SUPPLEMENTAL SURVEYING				
1.06 ROW MAPPING	24	24	$ 960	$ 960
1.07 UTILITY COORDINATION AND DESIGN				
1.08 INITIAL DESIGN AND DCC	1,264	1,264	$ 62,462	$ 62,462
1.09 ROADWAY DESIGN	4,927	4,067	$ 209,115	$ 172,720
1.10 DRAINAGE DESIGN	3,508	2,657	$ 138,915	$ 105,957
1.11 STRUCTURAL DESIGN				
1.12 RETAINING WALL DESIGN	1,000	640	$ 46,811	$ 30,542
1.13 SIGNING, MARKINGS AND SIGNALIZATION	44	27	$ 2,680	$ 1,650
1.14 TRAFFIC CONTROL PLAN	161	137	$ 8,569	$ 7,049
1.15 TRAFFIC MANAGEMENT SYSTEMS	24	15	$ 1,520	$ 950
1.16 ILLUMINATION	12	8	$ 760	$ 510
1.17 TOLL FACILITY DESIGN	32	20	$ 1,976	$ 1,235
1.18 MISCELLANEOUS	459	278	$ 18,444	$ 11,249
1.19 COORDINATION, MEETINGS & INVOICING	978	738	$ 52,882	$ 40,561
DIRECT SALARY SUBTOTALS	12,614	10,056	$ 555,244	$ 445,995
OVERHEAD	149.94%		$ 832,532	$ 668,724
PROFIT	12.00%		$ 166,533	$ 133,766
TOTAL LABOR COST			$ 1,554,309	$ 1,248,485
DIRECT EXPENSES			$ 4,492	$ 4,492
TOTALS			$ 1,558,801	$ 1,252,977
DBE PERCENTAGE	15.4%			
OVERALL PERCENTAGES	15.4%			

* DENOTES NO ADDITIONAL EFFORT
Δ DENOTES 100% SEGMENT 2 COMPLETION

Central Texas Regional Mobility Authority
Contract # 08290E22702E
290E Segment 01A and Segment 2

EXHIBIT D-1 FEE SCHEDULE

BREAKDOWN BY FIRM

CATEGORY	CPY							
	HOURS				COST			
	Original Effort	Revised Effort			Original Effort	Revised Effort		
		Total	SEG 1A	SEG 2		Total	SEG 1A	SEG 2
1.02 GOVERNMENTAL AGENCY COORDINATION								
1.03 DATA COLLECTION								
1.04 GEOTECHNICAL INVESTIGATION								
1.05 SUPPLEMENTAL SURVEYING								
1.06 ROW MAPPING								
1.07 UTILITY COORDINATION AND DESIGN								
1.08 INITIAL DESIGN AND DCC								
1.09 ROADWAY DESIGN								
1.10 DRAINAGE DESIGN								
1.11 STRUCTURAL DESIGN	8,991	7,060	608	6,452	$ 381,588	$ 297,990	$ 24,916	$ 273,074
1.12 RETAINING WALL DESIGN								
1.13 SIGNING, MARKINGS AND SIGNALIZATION	1,957	1,755	569	1,186	$ 81,313	$ 71,319	$ 22,038	$ 49,281
1.14 TRAFFIC CONTROL PLAN								
1.15 TRAFFIC MANAGEMENT SYSTEMS								
1.16 ILLUMINATION								
1.17 TOLL FACILITY DESIGN								
1.18 MISCELLANEOUS								
1.19 COORDINATION, MEETINGS & INVOICING	390	408	109	299	$ 20,507		$ 5,853	$ 15,455
DIRECT SALARY SUBTOTALS	11,338	9,223	1,286	7,937	$ 483,408	$ 390,616	$ 52,807	$ 337,809
OVERHEAD	185.00%				$ 894,305	$ 722,639	$ 97,692	$ 624,947
PROFIT	12.00%				$ 165,326	$ 133,591	$ 18,060	$ 115,531
TOTAL LABOR COST					$ 1,543,038	$ 1,246,846	$ 168,559	$ 1,078,287
DIRECT EXPENSES					$ 7,304	$ 8,139	$ 1,386	$ 6,754
TOTALS					$ 1,550,342	$ 1,254,985	$ 169,945	$ 1,085,041
DBE PERCENTAGE								
OVERALL PERCENTAGES	15.4%							

Central Texas Regional Mobility Authority
Contract # 08290E22702E
290E Segment 01A and Segment 2

EXHIBIT D-1 FEE SCHEDULE

BREAKDOWN BY FIRM

CATEGORY	KFA							
	HOURS				COST			
	Original Effort	Revised Effort			Original Effort	Revised Effort		
		Total	SEG 1A	SEG 2		Total	SEG 1A	SEG 2
1.02 GOVERNMENTAL AGENCY COORDINATION								
1.03 DATA COLLECTION								
1.04 GEOTECHNICAL INVESTIGATION								
1.05 SUPPLEMENTAL SURVEYING								
1.06 ROW MAPPING								
1.07 UTILITY COORDINATION AND DESIGN								
1.08 INITIAL DESIGN AND DCC								
1.09 ROADWAY DESIGN								
1.10 DRAINAGE DESIGN	1,888	1,845	149	1,696	$ 66,912	$ 65,873	$ 5,406	$ 60,467
1.11 STRUCTURAL DESIGN								
1.12 RETAINING WALL DESIGN								
1.13 SIGNING, MARKINGS AND SIGNALIZATION								
1.14 TRAFFIC CONTROL PLAN								
1.15 TRAFFIC MANAGEMENT SYSTEMS								
1.16 ILLUMINATION								
1.17 TOLL FACILITY DESIGN								
1.18 MISCELLANEOUS								
1.19 COORDINATION, MEETINGS & INVOICING								
DIRECT SALARY SUBTOTALS	1,888	1,845	149	1,696	$ 66,912	$ 65,873	$ 5,406	$ 60,467
OVERHEAD	159.86%				$ 106,966	$ 105,303	$ 8,641	$ 96,662
PROFIT	12.00%				$ 20,865	$ 20,540	$ 1,685	$ 18,855
TOTAL LABOR COST					$ 194,743	$ 191,716	$ 15,732	$ 175,984
DIRECT EXPENSES					$ 1,135	$ 1,312	$ 227	$ 1,085
TOTALS					$ 195,878	$ 193,028	$ 15,959	$ 177,069
DBE PERCENTAGE	2.4%							
OVERALL PERCENTAGES	2.4%							

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EXHIBIT D-1 FEE SCHEDULE

BREAKDOWN BY FIRM

CATEGORY	PES							
	HOURS				COST			
	Original Effort	Revised Effort			Original Effort	Revised Effort		
		Total	SEG 1A	SEG 2		Total	SEG 1A	SEG 2
1.02 GOVERNMENTAL AGENCY COORDINATION								
1.03 DATA COLLECTION	68	68	0	68	$ 3,262	$ 3,262	$ -	$ 3,262
1.04 GEOTECHNICAL INVESTIGATION								
1.05 SUPPLEMENTAL SURVEYING								
1.06 ROW MAPPING								
1.07 UTILITY COORDINATION AND DESIGN								
1.08 INITIAL DESIGN AND DCC	548	548	0	548	$ 21,742	$ 21,742	$ -	$ 21,742
1.09 ROADWAY DESIGN								
1.10 DRAINAGE DESIGN								
1.11 STRUCTURAL DESIGN	1,804	1,798	0	1,798	$ 67,494	$ 67,310	$ -	$ 67,310
1.12 RETAINING WALL DESIGN	287	237	0	237	$ 11,006	$ 9,091	$ -	$ 9,091
1.13 SIGNING, MARKINGS AND SIGNALIZATION	414	362	0	362	$ 14,636	$ 12,870	$ -	$ 12,870
1.14 TRAFFIC CONTROL PLAN								
1.15 TRAFFIC MANAGEMENT SYSTEMS								
1.16 ILLUMINATION								
1.17 TOLL FACILITY DESIGN	628	1,088	330	758	$ 21,804	$ 37,440	$ 11,397	$ 26,043
1.18 MISCELLANEOUS								
1.19 COORDINATION, MEETINGS & INVOICING	264	358	103	255	$ 12,632	$ 16,869	$ 4,738	$ 12,131
DIRECT SALARY SUBTOTALS	4,013	4,459	433	4,026	$ 152,576	$ 168,584	$ 16,134	$ 152,450
OVERHEAD	160.00%				$ 244,122	$ 269,735	$ 25,815	$ 243,920
PROFIT	12.00%				$ 47,604	$ 52,598	$ 5,034	$ 47,564
TOTAL LABOR COST					$ 444,302	$ 490,917	$ 46,983	$ 443,934
						$ -		
DIRECT EXPENSES					$ 790	$ 874	$ 84	$ 790
TOTALS						$ -		
					$ 445,092	$ 491,791	$ 47,067	$ 444,724
DBE PERCENTAGE					6.0%			
OVERALL PERCENTAGES					6.0%			

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EXHIBIT D-1 FEE SCHEDULE

BREAKDOWN BY FIRM

CATEGORY	H/SA							
	HOURS				COST			
	Original Effort	Revised Effort			Original Effort	Revised Effort		
		Total	SEG 1A	SEG 2		Total	SEG 1A	SEG 2
1.02 GOVERNMENTAL AGENCY COORDINATION								
1.03 DATA COLLECTION								
1.04 GEOTECHNICAL INVESTIGATION								
1.05 SUPPLEMENTAL SURVEYING								
1.06 ROW MAPPING								
1.07 UTILITY COORDINATION AND DESIGN								
1.08 INITIAL DESIGN AND DCC								
1.09 ROADWAY DESIGN								
1.10 DRAINAGE DESIGN								
1.11 STRUCTURAL DESIGN								
1.12 RETAINING WALL DESIGN								
1.13 SIGNING, MARKINGS AND SIGNALIZATION	2,512	1,824	432	1,392	$ 96,488	$ 70,088	$ 16,557	$ 53,531
1.14 TRAFFIC CONTROL PLAN								
1.15 TRAFFIC MANAGEMENT SYSTEMS								
1.16 ILLUMINATION								
1.17 TOLL FACILITY DESIGN								
1.18 MISCELLANEOUS								
1.19 COORDINATION, MEETINGS & INVOICING								
DIRECT SALARY SUBTOTALS	2,512	1,824	432	1,392	$ 96,488	$ 70,088	$ 16,557	$ 53,531
OVERHEAD	150.00%				$ 144,732	$ 105,133	$ 24,836	$ 80,297
PROFIT	12.00%				$ 28,946	$ 21,026	$ 4,967	$ 16,059
TOTAL LABOR COST					$ 270,166	$ 196,247	$ 46,360	$ 149,887
						$ -		
DIRECT EXPENSES					$ -	$ -	$ -	$ -
TOTALS						$ -		
					$ 270,166	$ 196,247	$ 46,360	$ 149,887
DBE PERCENTAGE								
OVERALL PERCENTAGES	2.4%							

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EXHIBIT D-1 FEE SCHEDULE

BREAKDOWN BY FIRM

CATEGORY	MB		ISE	
	SEGMENT 1A		SEGMENT 1A	
	HOURS	COST	HOURS	COST
1.02 GOVERNMENTAL AGENCY COORDINATION				
1.03 DATA COLLECTION				
1.04 GEOTECHNICAL INVESTIGATION				
1.05 SUPPLEMENTAL SURVEYING				
1.06 ROW MAPPING				
1.07 UTILITY COORDINATION AND DESIGN				
1.08 INITIAL DESIGN AND DCC			6	$ 328
1.09 ROADWAY DESIGN				
1.10 DRAINAGE DESIGN				
1.11 STRUCTURAL DESIGN				
1.12 RETAINING WALL DESIGN				
1.13 SIGNING, MARKINGS AND SIGNALIZATION				
1.14 TRAFFIC CONTROL PLAN				
1.15 TRAFFIC MANAGEMENT SYSTEMS				
1.16 ILLUMINATION	87	$ 4,706		
1.17 TOLL FACILITY DESIGN			105	$ 4,749
1.18 MISCELLANEOUS			16	$ 731
1.19 COORDINATION, MEETINGS & INVOICING			23	$ 1,002
DIRECT SALARY SUBTOTALS	87	$ 4,706	150	$ 6,810
OVERHEAD	154.45%	$ 7,269	185.00%	$ 12,598
PROFIT	12.00%	$ 1,437	12.00%	$ 2,329
TOTAL LABOR COST		$ 13,413		$ 21,737
DIRECT EXPENSES		$ -		$ 15
TOTALS		$ 13,413		$ 21,752
DBE PERCENTAGE	0.2%			
OVERALL PERCENTAGES	0.2%		0.3%	

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EXHIBIT D-1 FEE SCHEDULE

BREAKDOWN BY FIRM

CATEGORY	VERDI*Δ		MCGRAY*Δ		FUGRO*Δ	
	SEGMENT 2		SEGMENT 2		SEGMENT 2	
	HOURS	COST	HOURS	COST	HOURS	COST
1.02 GOVERNMENTAL AGENCY COORDINATION						
1.03 DATA COLLECTION						
1.04 GEOTECHNICAL INVESTIGATION					2,206	$ 484,256
1.05 SUPPLEMENTAL SURVEYING			1,241	$ 145,141		
1.06 ROW MAPPING						
1.07 UTILITY COORDINATION AND DESIGN						
1.08 INITIAL DESIGN AND DCC						
1.09 ROADWAY DESIGN	737	$ 19,790				
1.10 DRAINAGE DESIGN						
1.11 STRUCTURAL DESIGN						
1.12 RETAINING WALL DESIGN						
1.13 SIGNING, MARKINGS AND SIGNALIZATION						
1.14 TRAFFIC CONTROL PLAN						
1.15 TRAFFIC MANAGEMENT SYSTEMS						
1.16 ILLUMINATION						
1.17 TOLL FACILITY DESIGN						
1.18 MISCELLANEOUS						
1.19 COORDINATION, MEETINGS & INVOICING						
DIRECT SALARY SUBTOTALS	737	$ 19,790	1,241	$ 145,141.00	2,206	$ 484,256
OVERHEAD	145.00%	$ 28,696		$ -		$ -
PROFIT	12.00%	$ 5,818		$ -		$ -
TOTAL LABOR COST		$ 54,304		$ 145,141		$ 484,256
DIRECT EXPENSES		$ 1,220		$ 2,900		$ -
TOTALS		$ 55,524		$ 148,041		$ 484,256
DBE PERCENTAGE	0.7%		1.8%			
OVERALL PERCENTAGES	0.7%		1.8%		5.9%	

* DENOTES NO ADDITIONAL EFFORT
Δ DENOTES 100% SEGMENT 2 COMPLETION