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

RESOLUTION NO. 08-32

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 § 26.01, 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, the CTRMA is charged with funding and developing transportation improvements throughout the region to help solve the current mobility crisis and improve the quality of life for residents of Central Texas; and

WHEREAS, the general engineering consultant retained by the CTRMA (the "GEC") previously developed a scope of work and a proposed budget to conduct traffic simulations and other feasibility work related to various CTMRA projects and potential projects; and

WHEREAS, the Board of Directors in Resolution No. 06-35, dated June 28, 2006, approved Work Authorization No. 6.0 and found that the scope of work included therein was necessary and appropriate to further assess the feasibility of certain projects and potential projects and has further determined from time to time by appropriate Resolution that various Supplements to Work Authorization No. 6.0 be adopted to fulfill the scope of work; and

WHEREAS, the Board of Directors in Resolution No. 08-16, dated March 26, 2008, authorized contracting with three design consultants for the design and engineering for the 290 East Toll Project (the "Project");and

WHEREAS, with the Project being designed in three sections by the respective design teams, it has been determined that specific coordination of the context sensitive design and related landscape and aesthetics design elements of the Project should be coordinated through the GEC under the scope of Work Authorization No. 6.0; and

WHEREAS, the CTRMA staff and the GEC have represented to the Board of Directors that Supplement No. 4 to Work Authorization No. 6.0 in substantially the form attached hereto as Attachment "A" is necessary and appropriate to provide for coordination by the GEC to ensure the consistency of the context sensitive design aspects of the Project.

NOW THEREFORE, BE IT RESOLVED, that the Board of Directors of the CTRMA approves Supplement 4 to Work Authorization No. 6.0 in substantially the form attached hereto as Attachment "A"; and

BE IT FURTHER RESOLVED, that all work performed under Supplement 4 to Work Authorization No. 6.0 shall be subject to the Agreement for General Consulting Civil Engineering Services between the CTRMA and the GEC.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 25th day of June, 2008.

Submitted and reviewed by:

Tom Nielson

General Counsel for the Central Texas Regional Mobility Authority Approved:

Robert E. Tesch

Chairman, Board of Directors Resolution Number 08-32

Date Passed 6/25/08

Attachement "A" To Resolution No. 08-32 Supplement 4 to Work Authorization No. 6.0

CENTRAL TEXAS RMA

ATTACHMENT A - SCOPE OF WORK

WORK AUTHORIZATION NO. 6.0 SUPPLEMENT NO. 4

SERVICES TO BE PROVIDED BY THE GENERAL ENGINEERING CONSULTANT (GEC)

Project Description

The purpose of this project is to develop Construction Plans, Specifications, and Estimates that will provide guidance to a contractor to bid and install hardscape and landscape planting enhancements, seeding and sodding and an irrigation system(s) along 290E in Travis County. The areas of the 290E will include landscape enhancements along the proposed right-of-way from US 183 to Parmer Lane. The "290E Landscape and Aesthetics Guidelines" approved by the Authority and TxDOT, has established hardscape and landscape planting enhancements for interchanges, underpasses, overpasses, medians, terraced planting, screening, and other unique locations of high visibility. This document will provide the basis for the development of the Construction Plans, Specifications, and Estimates.

Services and Products Provided by GEC

A. Engineering Coordination Period (3 months estimated)

(prior to start of Landscape PS&E)

- 1.1 Coordination Meetings: The Project Manager will attend up to (5) 4 hour meetings; the Design Manager will attend up to (5) 4 hour meetings and (5) 2 hour meetings; and the Production Manager will attend up to (5) 2 hour meetings.
- 1.2 Presentation Meetings: Attend (1) Authority meeting, includes preparation of one (1) digital format presentation (Power Point).
- 1.3 Drainage and Grading: Design coordination for hardscape design and landscape planting design integration, including preliminary recommendations and input to SWP GEC related to erosion control and topsoil/compost areas.

1.4 Planting Zone and Planting/Irrigation Analysis: Analysis of drainage, soil, cross-section and setback overlay determinations, order of magnitude planting scope and construction costs as well as the coordination of irrigation sleeving.

B. Landscape PS&E (6 months estimated)

1.0 Project Management

- 1.1 Project Meetings (6 months of PS&E anticipated)
 - Attend one (2 hour) project PS&E kick-off meeting.
 - Attend required monthly team update meetings at the Authority office.
 Six (6) two hour meetings are anticipated over the course of the project
 - Attend working meetings with Segment Engineers: Six (6) two hour meetings are anticipated during PS&E.
 - Attend Submittal Review /Comment Resolution meetings for the 30%, 60%, 90%, and 100% drawing sets. Eight (8) total meetings (2 hours each) are included.
 - Participate in meetings with TxDOT, and/or the City of Austin. Three
 (3) meetings anticipated, including preparation of exhibits.

1.2 Quality Control / Quality Assurance

 Perform Quality Reviews and document coordination of deliverables at 30%, 60%, 90%, 100%, and Final completion stages of construction plans, specifications, and estimates.

1.3 Sub-Consultant Coordination

- GEC will coordinate information from various disciplines to evaluate designs, including: Irrigation for 290E landscape planting areas.
- GEC will coordinate information regarding topsoil, fine grading, swale locations, grading, and utilities for electrical and water service.

1.4 Project Reports / Project Schedules

- Prepare monthly progress reports, including narrative descriptions of work accomplished and work anticipated in the coming 30-day period;
 Monthly reports are anticipated for the duration of design, which is scheduled for a period of six (6) months.
- Provide Project administration and tracking.

2.0 Field Visits

2.1 Field Visits

- Field-verify existing conditions at each of the selected landscape focus areas.
- · Field visits will be conducted by teams of two people.

3.0 Construction Document Plans, Specifications, and Estimates (PS&E)

- 3.1 Schematic Design 30% plans
 - GEC will prepare schematic designs at a 30% completion level for each of the selected hardscape and landscape focus areas and elements.
 - GEC will prepare One (1) drawing package for hardscape, landscape planting and irrigation included in this contract. The following section (3.1.1-3.1.4) describes the level of drawings completed at 30% design development stage:
 - 3.1.1 Schematic Design: The schematic hardscape design and landscape planting plans will integrate the "290E Landscape and Aesthetic Guidelines" approved concepts for: corridor planting, interchanges, terraces, underpasses, and overpasses.
 - 3.1.2 Graphic/CAD Base Preparation: GEC will develop hardscape and landscape sheets using base CAD files
 - 3.1.3 Concept Illustrations: GEC will prepare conceptual sketches as appropriate for schematic fine grading, hardscape elements, and planting studies.
 - 3.1.4 Irrigation Report: GEC will prepare a 290E Irrigation Report in 8-1/2" x 11" format that identifies local irrigation water sources, potential controller power connections, and communication needs of the system.

The Authority will be given schematic design 30% drawings for review for a period of fourteen (14) days. The Authority is to submit written comments to the GEC at the end of the review period. At the review meeting, all comments will be addressed prior to proceeding into the design development stage.

- 3.2 Design Development 60% plans, specifications, & estimates
 - GEC will provide input regarding topsoil, swale location refinement, fine grading, and overall utility parameters – all as related to hardscape, landscape planting, and irrigation. Recommendations will coordinate with design requirements as determined by Segment Engineers.
 - GEC will provide preliminary water, power and communication connection plans for an irrigation system. Plans will indicate irrigation water sources / connection points, proposed water meter locations and sizes, irrigation controller power connections, and irrigation mainline routing and sizes.
 - GEC will prepare preliminary erosion control, plans, details and SW3P recommendations for landscape focus areas.
 - GEC will provide preliminary traffic control plans related to landscape work.
 - GEC will prepare design development drawings at a 60% completion level for hardscape and landscape planting focus areas and areas to receive seeding and sodding based in part on comments received at schematic design 30% review meeting.
 - GEC will prepare Electrical Service Plans for Landscape Irrigation based on based on Segment Engineers' electrical distribution plans.
 - GEC will prepare draft specifications and preliminary opinion of probable construction cost at 60% design development stage.
 - GEC will attend a 60% design development plan review meeting.
 - GEC will prepare One (1) drawing package for hardscape, landscape planting and irrigation included in this contract. The following section (3.2.1-3.2.7) describes the level of drawings completed at 60% design development stage:
 - 3.2.1 Grading Plans & Details: GEC will develop plans and prototypic details that incorporate the site conditions and rough grading as determined and shown on Segment Engineers' drawings. Review of Soils analysis will be done to understand the average conditions. Preliminary recommendations for special landscape area topsoil treatment, swale erosion control, and swale placement will be given to the Segment Engineers for use in their work.
 - 3.2.2 Landscape Planting Plans and Details: GEC will develop plans and details that respond to the approved "290E Landscape and Aesthetic Guidelines" landscape concepts and to its native plant palette. Specific plants, seed mixes, sod specifications and quantities will be detailed to calculate unit costs.

- 3.2.3 Hardscape Plans & Details: GEC will develop plans and details that respond to the approved "290E Landscape and Aesthetic Guidelines" hardscape concepts. The approved concepts will be developed furthered to insure incorporation to the overall project as well as determine necessary quantities to calculate unit costs.
- 3.2.4 Irrigation System Plans and Details: GEC will develop preliminary power, water supply connections / meters, electrical service location plans and irrigation mainline routing for the landscape areas at 1" – 40' scale. Connection to site electrical panels and service as shown and designed on the Electrical Site Plans.
- 3.2.5 Draft Specifications, Estimates, Quantity and General Note Sheets: GEC will develop an overall estimate and preliminary list of quantities with appropriate general notes for key items.
- 3.2.6 Storm Water Pollution Prevention Plans and Details: GEC will develop erosion control layout sheets (1"=60') showing all necessary erosion control devices such as: sediment control fences, rock filter dams, inlet protection, and other devices as required. Erosion control plan shall be coordinated with the Landscape Focus Areas, Traffic Control Plan and Sequence of Work. Develop plans and details that adhere to regulations related to storm water pollution prevention criteria.
- 3.2.7 Traffic Control Plans and Details: GEC will develop 1"=60" scale plans and details that denote management of traffic at each of the selected landscape focus areas. Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, adjacent to the landscape areas. Plans are to be based on standards developed by AASHTO and MUTCD.

The Authority will be given 60% drawings for the review period of fourteen (14) days. The 2Authority is to submit written comments at the end of the review period. At the review meeting all comments will be addressed prior to proceeding into the 90% level plans.

- 3.3 Construction Documentation 90% plans, specifications, & estimates
 - GEC will provide input regarding topsoil, swale location refinement, fine grading, and overall utility parameters – all as related to hardscape,

landscape planting and irrigation. Recommendations will coordinate with design requirements as determined by Segment Engineers.

 GEC will provide refined water, electrical connections, piping layout and communication plans for the irrigation system.

 GEC will prepare refined erosion control, details and SW3P recommendations for the landscape areas.

 GEC will provide refined traffic control plans related to hardscape and landscape planting work.

 GEC will prepare construction documents at a 90% completion level for hardscape and landscape planting focus areas and areas to receive seeding and sodding based in part to comments received at the design development 60% review meeting.

 GEC will prepare specifications and preliminary opinion of probable construction cost at 90% construction document stage.

 GEC will attend a 90% construction document review meeting as described above (1.1 Project Meetings).

- GEC will prepare One (1) drawing package for hardscape, landscape planting and irrigation included in this contract. The following section (3.3.1-3.3.8) describes the level of drawings completed at 90% construction documentation stage:
 - 3.3.1 Title Page and Sheet Index: GEC will develop title sheet and sheet index that incorporates the information required for an independent bid package.
 - 3.3.2 Planting Layout and Fine Grading Plans: GEC will refine plans that incorporate the requirements and will produce planting layout and fine grading plans for each of the selected landscape focus areas shown in the "290E Landscape and Aesthetic Guidelines" and all areas to receive seeding and sodding. Planting Layout and Fine Grading Plans will be developed to a 90% completion level.
 - 3.3.3 Landscape Planting Plans and Details: GEC will refine landscape plans and details that respond to 60% review comments while maintaining the goal of the "290E Landscape and Aesthetic Guidelines" document. Planting details will be developed to a 90% completion level and show plant material type, size and location. Details will indicate planting pit design, shrub bed preparation, planter section, tree staking,
 - 3.3.4 Hardscape Plans and Details: GEC will refine hardscape plans and details that respond to 60% review comments while maintaining the goal of the "290E Landscape and Aesthetic

Guidelines" document. Hardscape details will be developed to a 90% completion level and show material type, size and location. Details will indicate final material selection, placement and construction methodology.

- 3.3.5 Irrigation System Plans and Details: GEC will develop detailed power, water supply connections / meters, electrical service location plans, irrigation mainline routing and landscape spray, bubbler and emitter layouts for the landscape areas at 1"-40' scale. Details will include shrub spray, tree bubbler, controller base, shrub bubblers, valve box detail, electrical connections at the controller and connection to site electrical panels and service as shown and designed on the Electrical Site Plans.
- 3.3.6 Draft Specifications, Estimates, Quantity and General Note Sheets: GEC will refine an overall estimate and preliminary list of quantities with appropriate general notes for key items.
- 3.3.7 Traffic Control Plans and Details: GEC will develop 1"=60" scale plans and details that denote management of traffic at each of the selected landscape focus areas. Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, adjacent to the landscape areas. Plans are to be based on standards developed by AASHTO and MUTCD.
- 3.3.8 Storm Water Pollution Prevention Plans and Details: GEC will develop erosion control layout sheets (1"=60") showing all necessary erosion control devices such as: sediment control fences, rock filter dams, inlet protection, and other devices as required. Erosion control plan shall be coordinated with the Landscape Focus Areas, Traffic Control Plan and Sequence of Work. Develop plans and details that adhere to regulations related to storm water pollution prevention criteria.

The Authority will be given 90% drawings for review for a period of fourteen (14) days. The Authority is to submit written comments at the end of the review period. At the review meeting all comments will be addressed prior to proceeding into the 100% PS&E.

- 3.4 Construction Documentation 100% plans, specifications and estimates
 - GEC will prepare final plans at a 100% completion level based in part to comments received at construction document 90% review meeting.
 - GEC will prepare final specifications and final opinion of probable construction cost at 100% PS&E stage.
 - GEC will attend coordination meetings with the Authority as described in section 1.1 of the PS& E work in this contract.
 - GEC will attend a 100% PS&E plan review meeting (one meeting is anticipated, as described in Section 1.1 Project meetings).
 - GEC will prepare One (1) drawing package for hardscape, landscape planting and irrigation included in this contract. The following section (3.4.1-3.4.8) describes the level of drawings completed at 100% construction documentation stage:
 - 3.4.1 Title Page and Sheet Index: GEC will develop title sheet and sheet index that incorporates the information required for an independent bid package.
 - 3.4.2 Planting Layout and Fine Grading Plans and Details: GEC will finalize plans and details that incorporate the requirements and will produce planting layout and fine grading plans for each of the selected landscape focus areas shown in the "290E Landscape and Aesthetic Guidelines" and all areas to receive seeding and sodding. Planting Layout and Fine Grading Details will be developed to a 100% completion level.
 - 3.4.3 Landscape Planting Plans and Details: GEC will refine plans and details that respond to 90% review comments while maintaining the goal of the "290E Landscape and Aesthetic Guidelines". Planting details will be developed to a 100% completion level and show plant material type, size and location. Details will indicate planting pit design, shrub bed preparation, planter section, tree staking,
 - 3.4.4 Hardscape Layout Plans and Details: HNTB will refine plans and details that respond to 90% review comments while maintaining the goal of the "290E Landscape and Aesthetic Guidelines". Hardscape details will be developed to a 100% completion level and show material type, size and location. Details will indicate final material selection, placement and construction methodology.
 - 3.4.5 Irrigation System Plans and Details: GEC will develop detailed power, water supply connections / meters, electrical service location plans and irrigation mainline routing for the landscape

- areas. Details will include shrub spray, tree bubbler, controller base, shrub bubblers, valve box detail, electrical connections at the controller and connection to site electrical panels and service as shown and designed on the Electrical Site Plans.
- 3.4.6 Final Specifications, Estimates, Quantity and General Note Sheets: GEC will refine an overall estimate and preliminary list of quantities with appropriate general notes for key items.
- 3.4.7 Traffic Control Plans and Details: GEC will develop 1"=60" scale plans and details that denote management of traffic at each of the selected landscape focus areas. Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, adjacent to the landscape areas. Plans are to be based on standards developed by AASHTO and MUTCD.
- 3.4.8 Storm Water Pollution Prevention Plans and Details: GEC will develop erosion control layout sheets (1"=60") showing all necessary erosion control devices such as: sediment control fences, rock filter dams, inlet protection, and other devices as required. The Erosion control plan shall be coordinated with the Landscape Planting and Hardscape Focus Areas, Traffic Control Plan and Sequence of Work. Develop plans and details that adhere to regulations related to storm water pollution prevention criteria.

Deliverables

- For submittals at Schematic Design 30%, it is anticipated that 11"x17" bond paper will be used. It is estimated that 10 sets shall be produced for reviews. PDF sheets will be digitally transferred to the Authority for "Accept/Reject" review prior to the 30% submission.
- For preliminary submittals at 60%, 90%, and 100% it is anticipated
 that 11" x 17" bond paper will be used. It is estimated that 10 sets
 shall be produced for reviews. PDF sheets will be digitally transferred
 to the Authority for "Accept/Reject" review prior to the 60%, 90% and
 100% submittal.
- Prior to letting, GEC shall submit the final plans in the following formats:
 - 11" x 17" white film (Mylar) GEC shall submit one (1) set of final construction plans on 11" x 17" white polyester film coated on both sides (for laser printer use). This shall be the original

record copy, which shall be signed and sealed by the Engineer of Record and the Landscape Architect.

- 11" x 17" bond paper GEC shall submit one (1) original set of final construction plans (printed directly from printer) on 11" x 17" bond paper (min. 24 lb.). This copy shall be the "make ready" set for use in printing copies for bidding by the Authority.
- Additional copies required from stated amount above will be billed as separate reimbursable.

3.5 Bidding

- GEC will assist the Authority to advertise and identify potential bidders. GEC will assist the Authority in evaluating bids. GEC will attend Pre-Bid Meetings.
- 3.5.1 One PS&E bid package has been identified with the following activities:
 - GEC will attend 1 Pre-Bid Meetings (one for the respective bid package).
 - GEC will produce 1 Bid Tabulations (one for the respective bid package).
 - Assistance in evaluation of bids received (one for the respective bid package).

4.0 Sub-consultants and Miscellaneous Design Items

4.1 Irrigation Design

 GEC shall provide Irrigation services through the use of a consultant to accomplish the design of irrigation system. The GEC team shall support irrigation by establishment of CAD sheets for design, using base information provided by the Segment Engineers as described above.

5.0 Services Not Included

The following Services are **not** included in this contract, but shall be provided as Additional Services if authorized or confirmed in writing by the Authority.

 Preparation of materials and management of material not specified in this contract.

- Board meetings/presentations/field visits and any other meeting not specified in this contract.
- Community/neighborhood meetings and/or presentations and preparation of graphics, drawings, digital presentations, etc. not specified in this contract.
- · Development of separate or phased plan/specification packages.
- Soil borings, testing, and/or analysis other than planting feasibility/evaluation.
- · Design of irrigation pump stations.
- · Modifications and/or extensions of fiber optic systems.
- · Construction Administration Services including:
 - Bidding services beyond those defined in Item 3.5
 - Plant Selection / Plant Procurement
 - Plant nursery site visits and/or plant material pretagging/inventory services.
- · As-Built Drawings
- Lighting and signalization
- Tree surveys/inventory

IA GEC 3 Corporation - MANHOUR BREAKDOW 8, 2008		SUM	MARY					CTRMA WORK AUTI	HORIZATIO!	N 6.0 SUPPLI	MENT 4.0	
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290E Landscape PS&E	\$278,291		0	0	60)	264	510	726	0	851	
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Total Loaded Labor Total Direct Expenses	\$ 243,291 \$ 35,000											
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CTRM... JEC HNTB Corporation - MANHOUR BREAKDOWN June 18, 2008 CTRMA
WORK AUTHORIZATION 6.0 SUPPLEMENT 4.0

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A		ing Coordination Period							20		20		30		10						80
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		nage and Grading	2662-626223						100		20		20		30				30		100
	4.0 Plan	ting Zone and Planting/Irrigation	n Analysis						10		10		20		10				20		70 0
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	1.0 Proj	ect Management																			0
	1.1	Project Meetings							8		62		32		20				2.4		146
	1.2	QA/QC							16				48		48						112
	1.3	Subconsultant Coordination									20		60		24						104
	1.4	Project Reports/Project Schedules	5								30		60						20		110
	2.0 Field	d Visits																			0
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		struction Document PS&E																			O
	3.1	Schematic Design - 30% Plans									16		40		100				185		341
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		Labor Costs		S		\$		\$	4,080	S	15,048	\$	22,440	S	23,958	5	-	S	19,573	5	85,099
		Overhead Costs	155.26%	5		S	-	S	6,335	S	23,364	S	34,840	5	37,197	\$	52	5	30,389	\$	132,12
		Profit	12%	\$	123	5	-	S	1,250	\$	4,609	S	6,874	\$	7,339	5	4	\$	5,995	S	26,067
		Total Loaded Labor		5	⊕±s	\$	*	S	11,664	\$	43,021	5	64,154	5	68,494	S		\$	55,957	S	243,29
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		Subconsultant - Irrigation Design	1	5	35,000																
		Total Direct Expenses		5	35,000																
		Total Loaded Labor		5	243,291																
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