

EXHIBIT "E"
HIDALGO COUNTY
Professional Engineering Services
Agreement # C-08-226-09-30
Work Authorization Form

WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 7 of the **Agreement** made by and between the **HIDALGO COUNTY**, acting herein by and through the **Commissioner's Court**, hereinafter called the "**Owner**", and **TEDSI Infrastructure Group, Inc.**, professional engineers of Mission, Texas, hereinafter called the "**Engineer**".

PART 1. Scope of Work. The purpose of this Work Authorization is to provide services for Mile 2W from Mile 12 North to 0.44 north of US-83 as indicated below:

The scope of services to be provided by the **Owner** is identified in **ATTACHMENT "A" –Scope of Services to be Provided by the Owner** attached hereto.

The scope of services to be provided by the **Engineer** is identified in **ATTACHMENT "B" –Scope of Services to be Provided by the Engineer** attached hereto.

PART 2. Estimated Cost. The Lump Sum cost for services under this Work Authorization is **\$604,859.71**. This amount is based upon the costs outlined in the **Estimated Cost Proposal** attached hereto as **ATTACHMENT "D"**.

PART 3. Payment. Compensation and payment to the **Engineer** for the services established under this Work Authorization shall be made in accordance with Articles 5, 6, and 7 of the **Agreement**.

PART 4. Funding. This Work Authorization No. 1 shall be funded through funding source: Account No. 8-1315-431-00-121-0390-731
Requisition Number _____ (MUST BE INCLUDED AFTER CC APPROVAL)

PART 5. Period of Service. This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon completion of scopes of the work authorization.

PART 6. Responsibilities and Obligations. This Work Authorization does not waive the parties' responsibilities and obligations provided under the **Agreement**.

PART 7. Acceptance and Acknowledgement.

Acknowledgement and confirmation by Hidalgo County Precinct No. 1.

Commissioner Sylvia Handy as to content and detail of this Work Authorization No. # 1.

HIDALGO COUNTY
COMMISSIONER PRECINCT NO. 1:

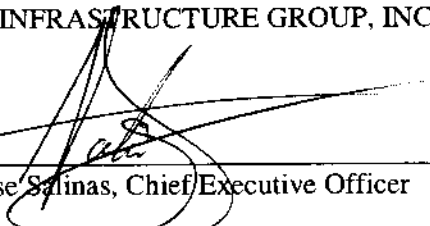
BY: _____

PART 8. Acceptance and Approval

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on as indicated below and effective as of ____ day of _____, 2008.

THE ENGINEER:
TEDSI INFRASTRUCTURE GROUP, INC.

THE OWNER:
HIDALGO COUNTY



By: Jesse Salinas, Chief Executive Officer

By: Juan D. Salinas, III, County Judge

ATTEST:

By: Arturo Guajardo Jr., County Clerk

LIST OF ATTACHMENTS

- ATTACHMENT "A" - Services to be Provided by the Owner
- ATTACHMENT "B" - Services to be Provided by the Engineer
- ATTACHMENT "C" - Work Schedule
- ATTACHMENT "D" - Estimated Cost Proposal

WORK AUTHORIZATION NO. 1
MILE 2 WEST ROAD -- PHASE II
Mile 12 North to 0.44 miles north of US-83

ATTACHMENT "A"
Services to be Provided by the Owner

The following provides an outline of the services to be provided by the **Owner** in the development of the **Work Authorizations**.

The **Owner** will provide to the **Engineer** the following:

- 1) Prepare and execute a Purchase Order with Hidalgo County Purchasing Department
- 2) Authorization to the Engineer to begin work.
- 3) Payment for work performed by the engineer.
- 4) Assistance to the Engineer, as necessary, to obtain required data and information from other local, regional, and state agencies that the Engineer cannot easily obtain.
- 5) Secure required Environmental permits from regulatory agencies
- 6) Acquire additional Right of Way identified by the Engineer
- 7) Provide any available relevant data that may on file concerning the Project.
- 8) Provide timely review and decisions in response to the Engineers request for information and/or submittals and deliverables.
- 9) Attend and participate in progress meetings as required and as coordinated and conducted by the Engineer.
- 10) Advertise and award, as assisted and recommended by the Engineer, construction contracts for the PS&E developed by the Engineer.
- 11) Attend pre-bid and pre-construction conferences coordinated and conducted by the Engineer.
- 12) Review and approve monthly and final estimates, developed by the Engineer, for payment to the Contractor. Compensate and pay the Contractor for work performed as identified in the approved monthly and final estimates.
- 13) Provide assistance to Engineer where necessary and possible with Owner information/resources to ensure project is completed within timely/efficient basis.
- 14) TxDOT to provide the Owner flexible pavement design for proposed pavement.

WORK AUTHORIZATION NO. 1
MILE 2 WEST ROAD – PHASE II
Mile 12 North to Mile 7 ½ North

ATTACHMENT "B"
Scope of Services to be Provided by the Engineer

CSJ: 0921-02-170
Highway: Mile 2 West Road
County: Hidalgo
Limits: From Mile 12 North Road, to 0.44 miles north of US-83
Project Length: 4.75 miles
Area Office: Pharr Area Office

Project Description
Reconstruct and Widen Roadway

Existing Conditions
The existing 20-foot paved two-lane roadway

Proposed Improvements
Construct 40-foot paved rural roadway consisting of two 12-foot travel lanes and two 8-foot shoulders.

GENERAL MANAGEMENT/COORDINATION

- 1) The Engineer shall design, develop and prepare all documents in English units.
- 2) The Engineer shall develop/submit a work schedule with milestone activities and/or deliverables identified.
- 3) The Engineer shall utilize Microstation computer graphics system. Roadway design for the route study will be developed in GEOPAK.
- 4) The Engineer shall be required to meet with designated County's representatives, utility companies, adjacent and affected landowners as required for coordination during the development of the project.
- 5) The Engineer shall be required to prepare the minutes for any meeting as required for documentation purpose.
- 6) The Engineer shall perform quality control and assurance (QC/QA) on all deliverables associated with this project.
- 7) The Project Manager will continually review the quality, progress and cost of the various tasks assigned to all firms within the team. Quality review will include technical requirements.

FIELD SURVEYING

- 1) Work shall assure compliance and adherence to all rules, regulations and policies as set forth by the Texas Board of Professional Land Surveyors.
- 2) The Engineer shall provide all traffic control, labor and equipment for the Traffic Control Plan (TCP) while performing services under this work authorization. The Engineer's Surveyor shall comply with the regulations of the most recent edition of the "Texas Manual on Uniform Traffic Control Devices".
- 3) Establish Horizontal and Vertical Control Benchmarks by setting permanent benchmarks with an Aluminum disk on a 5/8" iron rod set in concrete, every 1000' throughout the limits of the project. Establish elevations on set points within the specifications of the TSPS Category 8. If applicable, NGS first order benchmarks shall be incorporated into the level loops utilizing the NAVD88 Datum elevations. Signed and Sealed, RPLS, control data sheets shall be created for the newly establish BMs and included in the deliverables.
- 4) Stake existing centerline
 - a) Set 2' #5 iron rods at every 1000 ft, at all angle points, PC's, PT's and all intersecting roadways. Center points to be set are every 1000 feet.
 - b) Reference all angle points, PC's, PT's, and at 1000 foot interval stations with iron pins on the right of way line (on both sides).
 - c) Stationing shall correspond with the design centerline. Stationing shall be painted at 500-foot stations on the pavement using traffic paint.

- 5) Obtain cross sections every 100 ft at whole stations. Cross sections to extend 10 ft outside of proposed right of way.
- 6) Obtain driveway cross sections. Cross sections to extend 10 ft outside of proposed right of way.
- 7) Update Inventory public access, commercial, and private driveways by type (dirt, caliche, gravel, concrete or paved).
- 8) Side Drains
 - a) Obtain approximate roadway centerline station.
 - b) Obtain size, length, description of structure, and conditions.
 - c) Obtain F.L. elevations at both ends and offsets to driveway or turnout centerline.
 - d) Label descriptions (size and length) on each side drain.
- 9) Culverts:
 - a) Obtain size of drainage structure, type, skewed angle, and material. Label and describe each structures (for example if it's an irrigation or drainage culvert) size and length.
 - b) Locate and obtain inlet and outlet flow lines elevations at structures, top of headwall, aprons, edge of pavement, and center line.
 - c) Obtain profile and cross sections of upstream and downstream ravines on man-made channels leading from and to the existing or proposed structure. These profiles and cross sections shall extend from inlet and outlet flow lines to distance of 500 ft. beyond the right of way or as directed by the Engineer.
 - d) Determine type of wingwall (i.e. flared wingwall, parallel, etc...) and safety end treatments (pipe runners, safety end treatments, barrier rail, etc...) according to TxDOT standards. For barrier rail include type of end treatments, location, type, length, and height.
 - e) Obtain pictures of culverts barrels and outlet and inlet view to right of way line.
- 10) Fence, Mailboxes, and Sign Inventory:
 - a) Locate and obtain mailboxes inventory (type-identify as single, double or multiple) for all mailboxes within R.O.W. and at all intersection locations. Include photographs.
 - b) Locate and obtain sign inventory (type) for all signs within R.O.W. and at all intersection locations Include pictures.
- 11) Miscellaneous
 - a) This item requires the surveyor to pick up any items that may be an obstruction for the proposed construction or may require special attention during the development of construction plans (ex: oil and gas on proposed right of way, etc.)
 - b) ASCII files shall be provided to the State. These files shall be retrieved from GPS/Data Collector and shall be compatible with Microstation.
 - c) Field books, containing all information gathered in the field, this information shall be to the surveyor's best knowledge, accurate and complete.

UTILITY SURVEY

- 1) The Engineer shall meet with Utility providers periodically to coordinate the work efforts and resolve any utility related problems. The Engineer shall prepare the minutes for these meetings and forwarded to the County. The Engineer shall address the following issues and any other items deemed necessary during the Utility Coordination meetings:
 - a) Activities completed since last meeting
 - b) Problems encountered.
 - c) Late activities.
 - d) Activities required by the next progress meeting.
 - e) Solutions for unresolved and/or anticipated problems.
 - f) Information or items required from other agencies/consultants.
- 2) If a reimbursable utility relocation exists, the Engineer shall request conveyance documents from the utility provider.
- 3) The Engineer shall notify the Utility companies in writing and request the following information in writing:
 - a) Project letting date and request they relocate prior to letting.
 - b) Develop their relocation plan according to Utility Accommodation Policy Manual.
 - c) Forward their relocation plan to the Engineer.
 - d) Request in writing when relocation of utilities will be complete.
 - e) Upon immediate completion of relocation, request they forward as-built plans to the County.
- 4) The Engineer shall develop the typical sections, alignment, and preliminary cross sections and shall forward these to the respective utility company.
- 5) The Engineer shall update all files and plans based on the utility company responses.

- 6) The Engineer shall identify all utility conflicts on the plans and prepare layouts and profiles of existing utility crossings showing conflicts of utilities with proposed improvements. The Engineer shall forward these layouts to the County and the utility companies. During design process, the Engineer shall field verify all visible utility conflicts.
- 7) The Engineer shall verify the proposed relocation plan submitted by the Utility companies to assure their design is according to Utility Accommodation Policy Manual. Upon the Engineer's review and concurrence with the proposed relocation plan, they shall forward their recommendation for approval to the State.
- 8) The Engineer shall provide one-time staking of proposed right of way and drainage easement.
- 9) Contact "One Call" to request marking of underground utilities
- 10) Request existing utility information from local utility companies
- 11) The Engineer will perform any surveying necessary to survey in located, "Flagged", underground utilities and visible overhead utilities.
- 12) The Engineer will obtain measure downs on utilities as follows
 - a) Top of key on gas line values
 - b) Top of key on water line values
 - c) Flowline, size of tie-ins and direction of flow for sanitary sewer manholes
 - d) Flowline, size pipe for irrigation systems
 - e) Flowline and size of system for inverted siphons.
- 13) Subsurface Utility Engineering is not included in the scope of work.

PLAN, SPECIFICATIONS AND ESTIMATE SERVICES

- 1) The Engineer shall prepare and submit work under this task in accordance to the PS&E Preparation Manual. The location of project should depict the entire project with beginning and ending (Station Numbers/Reference Markers) for each noted CSJ. Mapping landmarks (side streets, creeks, etc.) along with North Arrow and a scale should be shown to help relate the physical location of the project.
- 2) The Engineer shall use the Design Speed, the Funding Category, Average Daily Traffic, ADT, Roadway Classification, Location Type, and the appropriate Design Criteria to develop the typical sections as set forth in the Roadway Design Manual, PS&E Preparation Manual and other deemed necessary State approved manuals to prepare and submit the work under this task. The existing typical section should be shown with current roadway (pavement, right of way, etc.) characteristics. The proposed typical sections should be shown below the existing typical section with all related pertinent (pavement, right of way, etc.) information for the proposed roadway construction.
- 3) Pavement Design to be the same as recently completed adjacent northern section.
- 4) For Roadway, Bridge and Traffic quantities, the Engineer shall prepare and submit work under this task in accordance to the PS&E Preparation Manual and other deemed necessary State approved manuals. All summaries shall be consolidated per CSJ, City or County participation, etc. Any quantities shown "For Contractor Information Only" should be shown as such.

TRAFFIC CONTROL PLANS (TCP)

- 1) The Engineer will develop a conceptual traffic control plan (TCP), roll plot, and narrative. These information will be submitted to the County and TxDOT for review. The Engineer shall make a presentation to the District Traffic Control Safety Review Committee to obtain approval of the TCP prior to development of plan sheets. Modifications requested by TxDOT or County after approval will be consider additional work and be added by supplemental agreement.
- 2) The Engineer shall notify the State if they plan on requesting a speed reduction at the work zones. The Engineer shall prepare the request form using the latest approved Strip Map within the project limits in conjunction with the Traffic Standards for this request. If the project limits is within the city limits, the request shall be coordinated with the State and the local municipality at the early design process.
- 3) The Engineer shall provide the State with a hardcopy and accompanying electronic file of a schedule and Critical Path Method for project duration for each phase of construction using SureTrack software
- 4) The Engineer shall describe the type of work to be performed for each phase of sequence of construction and any special instructions (ex: storm sewer, culverts, bridges, railing, illumination, signals, retaining walls, signing, paving surface sequencing or concrete placement, ROW restrictions, utilities, etc.) that the contractor should be made aware to include limits of construction, obliteration, and shifting or detouring of traffic prior to the proceeding phase.
- 5) The Engineer shall include the work limits, the location of channelizing devices, positive barrier, location & direction of traffic, work area, stations, pavement markings, and other information deemed necessary for each phase of sequence of construction.

- 6) If Engineer determines that a standard is not applicable to address the entire project, then the Engineer shall prepare layouts for each respective phase of sequence of construction to illustrate any necessary additional construction details not covered by the Standards to address work limits for each sequence in stations, channelizing devices, barricades, positive barrier, tapers, buffer zones, TCP signage, signs, work zone pavement markings, work area, location & direction of traffic, locations for pedestrian crossings, and other information deemed necessary for each phase of sequence of construction. The Engineer shall develop the layouts by referring to the TxDOT standards, latest version of the TxMUTCD for non-TCP signage that may be needed as part of the TCP signage for intersections. The layouts shall address construction of detours, access to business, homes, side streets, and driveways, and reroute of traffic to other roads.
- 7) The Engineer will address drainage issues that are a result of changes in horizontal and vertical profiles by specifying the location and size of the temporary drainage structures.
- 8) The Engineer shall prepare the plan and profile sheets and cross sections for all detours.
- 9) The Engineer will develop TCP plans as double stacked, 1" = 100'. TCP plans will be developed for a two phase approach to traffic control.

ROADWAY DETAILS

- 1) The alignment sheet(s) include the following for complex projects and/or where it is not desirable to show the following information on the plan and profiles sheet(s): include the project limits for the entire project, label curve data bearings/coordinates for each alignment, computer generated data may be graphically place on the sheet(s) and if applicable the State Plane Coordinates System should be noted on this sheet(s).
- 2) The Benchmark Data sheet shall be developed in tabulated form and accompanied by surveyor's sketch showing the Station Number from respective alignment, Offset, and Elevation and Physical Description.
- 3) The Engineer shall design the plan (horizontal) and profile (vertical) including roadway transitions based on the controlling criteria previously defined and as set forth in the previously listed. The Engineer shall develop the alignment for the project in GEOPAK format. Plan and Profile sheets will be developed at 1" = 100'.
- 4) The Engineer shall identify and notify the State all locations not meeting the set criteria. In addition, the Engineer shall provide alternatives and a recommendation to address these design issues.
- 5) The Engineer shall develop and verify all cross sections in preparation of the proposed traffic control plan, drainage, utilities, right-of-way, and access onto adjacent properties. In addition, the cross sections shall be drained to maintain the natural watershed unless otherwise directed by the State.
- 6) The Engineer shall determine all cut and fill quantities.
- 7) The Engineer shall design all intersections to accommodate the design vehicles turning radius. The ADA-wheelchair ramps shall be designed in accordance to the TDLR compliance and the latest TxDOT's Pedestrian Ramp Standards in conjunction with the requirement of the latest version of the TxMUTCD as it relates location of the traffic signals pedestrian heads, signage, and pavement markings.
- 8) The Engineer shall design all longitudinal barriers (railing and guardrail), raised median, fencing, bus bays, parking areas, mailboxes, and shoulder texturing in accordance to the criteria set forth in the roadway design manual and standards. Miscellaneous Details Sheet(s) may be developed to illustrate any necessary additional construction details not covered by the Standards.

DRAINAGE DETAILS

- 1) The Engineer shall use the Roadway Design Manual, Hydraulic Manual, PS&E Preparation Manual, and other deemed necessary State approved manuals to prepare and submit the work under this section
- 2) The Engineer shall use the above-listed manuals to prepare and submit the work under this task. The hydraulic calculations shall have the following based on previously County approved drainage study:
 - a) Description-Material, Size, & Entrance (headwall)
 - b) Design discharges, Flow per barrel, barrel slope, and Manning n-value
 - c) Inlet flow line, allowable headwater, roadway (shoulder) elevation, calculated inlet headwater elevation
 - d) Outlet flow line, Tailwater for design frequency/frequencies, type of flow, critical depth, and calculated friction losses, calculated outlet water elevation
 - e) Controlling headwater elevation, outlet velocity, and recommended countermeasures to maintain an acceptable outlet velocity.
- 3) The Engineer shall show the location of culverts and ditches on the roadway plan view.
- 4) The Engineer shall use TxDOT standards preferably at all times. Modification to inlets, pipe connection, bedding details, and other elements pertaining to drainage details shall be included under this work task. The BCS sheet must

be submitted for all box culverts within the project limits. This sheet must be signed and sealed by the Engineer.

TRAFFIC ITEMS

The Engineer shall inventory all signage through the project limits including those limits that are considered incidental to the project limits. All intersections and roadway signage shall be designed and spaced according to the requirements set forth in TxDOT's Sign Crew Field Book and standards for work under this task. Any signs no longer used by the State shall be taken out and replaced by an accepted TxMUTCD sign. The Engineer shall design all signage according to the latest version of the TxMUTCD, Supplemental to TxMUTCD, and TxDOT's Signs and Markings Manual. Design of flashing beacons or traffic signals not specifically indicated in Attachment D is not included. Additional locations will be added by supplemental agreement.

STORM WATER POLLUTION PREVENTION PLANS (SW3P)

The Engineer shall submit and prepare separate SW3P sheets when soil is to be disturbed as part of the erosion control measures during each phase of the sequence of construction. The general plan for the SW3P on this project is to enclose the area under construction including existing and proposed inlets with erosion control devices and provide a stabilized construction entrances at points where traffic will be entering or leaving the construction site. The Engineer shall also design structures or features to control erosion and suspended sediments for post-construction. A standardized General Note will serve as the SW3P where there is to be no soil disturbance (seal coats, overlays, etc.) in the project. The Engineer shall refer to the Hydraulic Design Manual, TxDOT standards, TxDOT Storm Water Management Guidelines, the Environmental Manual, and District Environmental Staff for guidance on work under this task. Erosion Control measures shall conform to one or more of the approved TxDOT / Texas Natural Resources Conservation Commission (TNRCC) / US Environmental Protection Agency (EPA) / US Army Corps of Engineers (USACE) Best Management Practices. The appropriate Best Management Practice(s) shall be listed on the Environmental Issues, Permits, and Commitments (EIPC) sheet to be included as a Plan Sheet and shall be followed by the Engineer and Contractor to completion. Plan sheets will be developed separate from TCP as 1"=100', double stacked.

CROSS SECTIONS

For the Final Submission, the Engineer shall furnish the final cross - section plots, on 36" wide x 120" long roll plots, showing both the original terrain and the design cross-sections, showing the roadway template, at a vertical scale of 1"=10' and a horizontal scale of 1"=10'. The design cross - sections shall indicate the slope rate on the side slopes. The Engineer shall use GeoPak software and provide the state with the applicable files. Cross sections are to show proposed pavement thickness, top of subgrade, finish grade of side bar ditches with slopes and location of right of way. Indicating other features within the cross sections is not part of the scope of work, ie. Underground utilities, storm sewer lines, top soil, etc.

DELIVERABLES

PS&E

The Engineer shall deliver to the County and TxDOT Project Manager one copy and one CD's containing PDF's of the plan sheets provided, respective of the 1st, 2nd, and 3rd submittal. For the final submittal, the Engineer shall submit one set in Mylar accompanied by a paper copy and two CD's containing PDF's of the final plans.

1st Submittal -

- 1) Design Summary Report
- 2) Title Sheet
- 3) Typical Sections (existing and proposed)
- 4) Traffic Control Plan
- 5) Utility Layout (conflicts identified)
- 6) Plan & Profile
 - a) Vertical Alignment (existing and proposed)
 - b) Horizontal Alignment (existing and proposed)
- 7) Miscellaneous Details
- 8) Corresponding Quantity Summary Sheets
- 9) Corresponding Standard Detail Sheets for all Items of Work in this submittal

- 10) Preliminary Estimate
- 11) Design Exceptions/Waivers required
- 12) Newly created Special Provisions/Specifications to be used (Form 1814)
- 13) R.O.W. (issues identified)
- 14) 2 Rolls of Cross Sections

2nd Submittal -

- 1) Index Sheet
- 2) Hydrologic Computation Sheets
- 3) Hydraulic Data Sheets
- 4) Drainage Area Maps
- 5) Drainage Plan & Profile
- 6) Drainage Structure Details
- 7) Storm Sewer Details
- 8) Storm Water Pollution Prevention Plan
- 9) Miscellaneous Details
- 10) Corresponding Quantity Summary Sheets
- 11) Corresponding Standard Detail Sheets for all Items of Work in this submittal
- 12) Updated Estimate
- 13) Utility Adjustment/Relocation Details
- 14) R.O.W. Acquisition Detail
- 15) 2 Rolls of Cross Sections

3rd Submittal -

- 1) Final Index of Sheets
- 2) Pavement Marking Layout/Details
- 3) Miscellaneous Details
- 4) Corresponding Quantity Summary Sheets
- 5) Corresponding Standard Detail Sheets for all Items of Work in this submittal
- 6) Final Estimate
- 7) General Notes
- 8) Certifications
- 9) Form 1002
- 10) Cross Sections

4th Submittal - PS&E Package 100% complete.

SURVEY DELIVERABLES

The Engineer shall submit, after completion of PS&E, all original field books containing all survey information requested for this work authorization. The field book shall contain all information gathered in the field. The survey information provided shall be to the surveyor's best knowledge, accurate, and complete.

Electronic files (*.txt) containing survey information with proper identification and with the following data format x, y, and z NAD-83 coordinate system. The x-coordinate corresponding to the east bearing, the y-coordinate corresponding to the north bearing, and the z-coordinate corresponding to the vertical elevation.

Electronic 2d and 3d Microstation files (*.dgn) containing survey information with proper identification and with the following data format x, y, and z NAD-83 coordinate system.

	Months						
	1	2	3	4	5	6	7
Notice To Proceed							
SURVEY							
Horiz. & Vert. Control Benchmarks							
PS&E Production							
TxDOT Reviews @ 30%, 60% & 90%							

Description	General Management/Coordination			Sr. Eng. Tech	Eng. Tech	Admin	
	Sr. Project Manager	Senior Engineer	Project Engineer				
Project Meetings	45		24			12	84
Preliminary Estimate	2	4	8				14
Project Administration	12					12	24
Total	62	4	32	0	0	24	122

Description	Topographic Survey			Sr. Eng. Tech	Eng. Tech	Admin	
	Sr. Project Manager	Senior Engineer	Project Engineer				
QA/QC Survey				24			36
Subconsultant Management	24					24	48
Total	24	12	0	24	0	24	84

Description	Utility Coordination			Sr. Eng. Tech	Eng. Tech	Admin	
	Sr. Project Manager	Senior Engineer	Project Engineer				
Utility coordination/meeting	32				40	24	96
Prepare and send utility submittals	1				24	24	49
Determine/resolve utility conflicts	4		24		40		68
Maintain communication documentation	1		16			10	27
QA/QC Survey		12		24			36
Total	38	12	40	24	104	58	276

Description	General PS&E			Sr. Eng. Tech	Eng. Tech	Admin		Sheet Count
	Sr. Project Manager	Senior Engineer	Project Engineer					
Title Sheet	1		4		8		13	1
Project Layout	1		4		16		21	4
Typ Sections	1	4	8		16		29	2
General Notes	1	4	8			4	17	
Estimate and Quantity	2		24		24	8	58	6
Miscellaneous Forms	1	2				1	4	
Preparation of Submittals	5	10		28	28	10	81	
Review meetings	10		10			10	30	
Determine and Plot Standards	2	4			30		36	
QA/QC Submittals	40	60				12	112	
Summaries	2	4		20	32		58	40
Total	66	88	58	48	154	45	459	53

Traffic Control Plan	Sr. Project Manager	Senior Engineer	Project Engineer	Sr. Eng. Tech	Eng. Tech	Admin		Sheet Count
Typical Sections	4	8	16		16		44	2
Phase Layouts (Two Phase, Double Stacked, 1"=100')	16	40	60		100		216	26
Total	24	64	76	0	116	8	288	30

Roadway Details	Sr. Project Manager	Senior Engineer	Project Engineer	Sr. Eng. Tech	Eng. Tech	Admin		Sheet Count
Benchmark Data Sheets		1			4		5	2
Plan and Profile (Roadway) (1"=100')	24	32	60	120	140		376	26
Intersection Details	4		24	32	60		120	6
Cross Sections (2 per STA, 12 per sheet)	1	12	32	40	80		165	42
Driveway Details	1		8		16		25	2
Misc. Details	1	4	12	24	32		73	4
Total	32	51	136	216	336	0	771	64

Drainage Details	Sr. Project Manager	Senior Engineer	Project Engineer	Sr. Eng. Tech	Eng. Tech	Admin		Sheet Count
Hydrology Calculations	4	12	20			4	40	2
Hydraulic Calculations	4	12	20			4	40	2
Culvert Layouts, Cross-sections and Detail Sheets	8	12	20	40	50		130	12
Misc. Details			4		12		16	2
Total	20	48	64	40	102	8	302	22

Traffic Items	Sr. Project Manager	Senior Engineer	Project Engineer	Sr. Eng. Tech	Eng. Tech	Admin		Sheet Count
Traffic Signal Warrant Study (Mile 2 West @ Mile 11 North)	1	4	4		10	2	21	
Four-Way Stop Warrant Study (Mile 2 West @ Mile 10 North)	1	4	4		10	4	23	
Existing Conditions - Mile 2 West @ Mile 11 North Rd	1	2	4		10	2	19	
Prop. Flashing Beacon Layouts (Modify Exist) - Mile 2 West @ Mile 11 North Rd	1	4	4		10	1	20	2
Existing Conditions - Mile 2 West @ Mile 10 North Rd	1	2	4		10	2	19	1
Prop. Flashing Beacon Layouts - Mile 2 West @ Mile 10 North Rd	1	4	4		10	1	20	2
Existing Conditions - Mile 2 West @ Mile 9 North Rd	1	2	4		10	2	19	1
Prop. Flashing Beacon Layouts (Modify Exist) - Mile 2 West @ Mile 9 North Rd	1	4	4		10	1	20	2
Existing Conditions - Mile 2 West @ Mile 8 North Rd	1	2	4		10	2	19	1
Prop. Flashing Beacon Layouts - Mile 2 West @ Mile 8 North Rd	1	2	4		10	1	18	2
Electrical Service Data Sheet	0	4	4		4	0	12	2
Summary of Quantities for Signalization	1	4			4	1	10	1
Signing and Striping Plans	6	24	40		60		130	25
Summary of Quantities for Signs	1	4			15		20	4
Summary of Quantities for Striping	2	2			8		12	1
Intersection striping details	1	8			20		28	6
District Standard Detail Drawings	1	3	6		6		16	4
Total	22	79	90	0	217	19	427	55

Environmental & SW3P	Sr. Project Manager	Senior Engineer	Project Engineer	Sr. Eng. Tech	Eng. Tech	Admin		Sheet Count
SW3P Sheets (Two Phases, Double Stacked, 1"=100')	6	24	32		80	16	160	26
Epic Sheet	2		5		8		16	2
Total	10	24	38	0	88	16	176	28

Total Hours	298	382	554	352	1117	202	2905	272
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\$ 183.19	\$ 154.46	\$ 137.55	\$ 117.91	\$ 103.37	\$ 59.03	
\$ 54,590.62	\$ 58,003.72	\$ 76,202.70	\$ 41,504.32	\$ 115,464.29	\$ 11,924.06	\$ 358,689.71

Project DirectCosts

Copies, Bond Plots, Mylar Plots & Mileage	\$ 16,000.00
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Sub-Total Basic Fee \$ 374,689.71

Additional Services

Right of Way Mapping 35 parcels at \$2750/parcels	35 Ea. X \$2,750/Ea.	=	\$96,250.00
Horiz. & Vert. Control Benchmarks	24 Ea. X \$1,400.00/ Ea.	=	\$33,600.00
Topographic Survey	25,080 Lf X \$4.00/ Lf	=	\$100,320.00

Sub-Total Additional Services = \$230,170.00

Total Lump Sum Fee (Basic +Additional) = \$ 604,859.71