



August 2, 2024

David Esquivel, P.E.
City Manager
City of Tomball
401 Market Street
Tomball, TX 77375

Subject: 16-inch Water Line design for City of Tomball

Dear Mr. Esquivel,

Ardurra Group, Inc. (Ardurra) is pleased to submit this proposal to provide engineering design services for the design of 16-inch water line design for the City of Tomball.

PROJECT UNDERSTANDING

The project consists of design and construction of approximately 8,900 LF of 16-inch waterline in City of Tomball. The proposed water line, starting from the east side of the intersection of Holderrieth Road and SH 249 and traversing across to the west side of SH 249, traversing across Holderrieth Road from the north side going south continuing along SH249 until Boudreaux Estates Drive, traversing west along Boudreaux Estates Drive to Rocky Road and south along Rocky Road to south of SH 99. The waterline will start on the north side of Holderrieth Road at the existing 12-inch waterline. The waterline will terminate at the intersection of Rocky Road and Interchange Road at the proposed location of a new waterline. The proposed waterline will be primarily installed by trenchless method of construction, except at few locations, where it will be installed by open cut method of construction. The proposed water line will be placed at a depth of 5 to 7 feet below existing ground and about 10 to 15 feet below existing ground at a few proposed locations.

SCOPE OF SERVICES

- The scope of services is defined in Attachment A.

PROJECT FEE

Ardurra will provide the proposed engineering services identified in the Scope of Services document for a lump sum fee of \$448,420.00. We have attached a spreadsheet which identifies the level of effort as Attachment B.

PROJECT SCHEDULE

Ardurra Group, Inc. will complete the design of the water line in 10 months after the notice to proceed and submit the document for permits subsequent to that. It is anticipated that the permits may take an additional 2 months. A longer lead time may be required if rights-of-way are needed to be acquired for privately owned easement locations.

PROJECT EXCLUSIONS

Items that are not specifically identified within the scope of services are excluded from the scope of services. These include environmental assessments, wetlands delineation, SUE, easement and/or



ROW acquisition and instruments, title research, special permits, construction inspection, public meetings, public hearings, traffic signal design, etc.

We appreciate the opportunity to submit this proposal and trust that we can perform the work satisfactorily per your needs. We will start the work upon receipt of your authorization to proceed. Should you have any questions about this proposal please do not hesitate to contact us directly. Should you have any questions on this proposal please do not hesitate to contact us directly.

Sincerely,
Arcurra Group, Inc.

Jeff Peters, P.E.
Market/Technical Director

Attachment

ATTACHMENT "A"

SCOPE OF SERVICES AND DELIVERABLE DOCUMENTS

CITY OF TOMBALL

16-Inch Water line

A. General

The Engineer shall provide professional engineering services as described in the Contract, and as further defined by this Attachment A, Scope of Services. Reference to City Engineer throughout document refers to the City Engineer of Public Works. Reference to Engineer throughout document refers to the Ardurra Engineering team.

B. Description of Project

The Project is for construction of 16-inch Water line along with all associated appurtenances within an existing easements/public ROW for approximately 8,900 LF along Holderrieth Road, 249 feeder Road, Boudreaux Estates Dr and Rocky Rd.

Standard design for SWPPP, Traffic Control will be required. TxDOT permit required. ROW acquisition is partially assisted and no roadway reconstruction is anticipated for the proposed improvements.

Reference Standards and Criteria

- a) "City of Houston Infrastructure Design Manual" current upon Agreement approval, hereinafter referred to as "City Design Manual."
- b) TxDOT Design Manuals, Standard Details, and Specifications, current upon submittal.

C. Review of Existing Information

- a) Existing utility information, existing record drawings of previous contracts, and existing survey information are readily available to the Engineer and the public. The City shall provide access to such information. It is the responsibility of the Engineer to physically gather this information from all available sources.

D. Correspondence

- a) The Engineer shall reference the City's Project Title and City's Engineering & Planning Project Number on all correspondence and submittals.
- b) The Engineer shall manage the efforts of the Project team members and Consultants, assign manpower, delegate responsibilities, review work progress, monitor conformance to the scope regarding the budget and schedule, and otherwise direct the progress of the work.
- c) Periodic meetings shall be held to review the progress of the engineering effort, or to address other issues which may arise. The City Engineer shall initiate meetings that include the Engineer and his Consultants, and if necessary, the City Engineer and other applicable parties. The Engineer shall prepare and deliver meeting record memorandum of decisions and action items to the City within 3 working days after each meeting.
- d) The Engineer shall notify the City Engineer immediately of any deviation from the Scope of Engineering Services and Fee agreed to in this Scope of Services. The Engineer shall not perform services outside of the Contract scope without an Amendment to this Contract.
- e) Route all written communication with regulatory agencies, neighborhood associations, and City Council through the City Engineer.
- f) Submit invoices on City's standard form, or other approved format, to include a progress report documenting the status of each milestone and/or task noted in the fee schedule to record activities and deliverables completed within the invoice period and to note activities planned for next month.

BASIC SERVICES

1. Phase II Design

Phase II Final Design will consist of developing design and construction bid documents, including plans, specifications, and estimates (PS&E), for 16-inch water line. The final design and construction bid documents will include the PS&E and all required bid forms. All the drawings and documents will be to the City standard requirements.

Specific Basic service tasks for development of the paving and sewer reconstruction package will include:

a) Meetings, Coordination and Management

- Development of the project will require meetings and coordination occurring both in person, virtually and by telephone. Regular meetings will occur to document and confirm the project status and progress. Additional meetings will occur for coordination with other agencies, utility owners, and other affected stakeholders. Meetings related to the project will be of reasonable frequency and duration.
- Engineer shall perform coordination necessary to obtain required reviews and approvals from applicable agencies and utility owners.
- Other agency and stakeholder coordination, including but not limited to:
 - TxDOT
 - Adjacent property owners and facility users
- Progress meetings
- Monthly progress reports & invoicing

b) Plan Set

The Plan Set Drawings will include the following:

- Cover Sheet
- Index of Drawings
- Survey control maps
- Legend, Abbreviations, Plan/Profile Notes
- General Construction Notes
- Soil Bore Layout

c) Engineering drawings and design

The Engineering Drawings will include the following:

- Overall Project Layout
- Horizontal Alignment and Data
- Plan & Profile layouts (1" = 20' H / 1" = 2' V)
- TCP plans
- SWPPP plans
- Miscellaneous details (non-standard)

d) Standard Details

The Standard Detail Drawings will include the following:

- Water details
- TCP details
- SWPPP details
- Project Sign

e) Other Documents

- Specifications & Project Manual

- Summary of estimated quantities and construction costs
- Exhibits and Letters for private utility conflicts
- Construction schedule estimate

f) Agency Approvals and Signatures

- The Engineer shall obtain required signatures from other governmental agencies, public utilities, and private utilities, which may impact the Project prior to final approval by the Department of Public Works and Engineering. Sufficient time in the project schedule should be allocated to secure these approvals. Utility signatures include, but are not limited to, SBC, CenterPoint Energy Entex, Inc., AT&T, and cable TV.
- Obtain necessary approvals (permits, license agreements, etc.) from TXDOT, and pipeline companies prior to final approval by the Department of Public Works and Engineering. Sufficient time in the project schedule should be allocated to secure these approvals prior to bid advertisement.

2. Bidding Services

- The Engineer shall assist the City in conducting the pre-bid conference, addendum, and submit meeting minutes within 3 working days.
- The Engineer shall prepare necessary addenda to address issues or clarifications necessary for completion of the bidding process.
- The Engineer shall furnish a tabulation of bids received with a written recommendation for the award of a construction contract and submit after the bid opening.

3. Phase III - Construction Phase Services

- The Engineer shall assist the City in conducting the pre-construction monthly meetings and submit meeting minutes within 3 working days.
- The Engineer shall review submittals, respond to RFIs, and prepare as-built drawings.

4. Topographic Survey

- Topographic Survey and list of deliverables is attached.

5. Geotechnical Services

- Geotechnical Services Scope and list of deliverables is attached.

6. Reimbursable Expenses

- Reproduction of bid sets for drawings, project manuals and required reports will be paid in accordance with contract requirements on a reimbursable basis.
- The actual cost of special licenses and permits, including required inspection fees, shall be reimbursed by the City.

7. Exclusions

- Environmental assessments, wetlands delineation, SUE, easement and/or ROW acquisition and instruments, title research, special permits, and construction inspection are not included in the scope of work.

8. Cost Summary

Basic Design Services		
Project Management and Coordination	\$ 45,352.00	Lump Sum
Drawings & Specifications	\$ 258,078.00	Lump Sum
Bid Phase Services	\$ 7,371.00	Lump Sum
Engineering Services during Construction	\$ 36,024.00	Lump Sum
Subtotal Basic Design Services		\$ 346,825.00
Additional Services		
Survey Services (Design)	\$ 51,840.25	Lump Sum
Geotechnical Services (Borings)	\$ 48,254.80	Hourly
Reimbursables	\$ 1,499.95	Per Each
Subtotal Additional Services		\$ 101,595.00
Total		\$ 448,420.00



August 2nd, 2024

Mr. Patric Donart, P.E., CFM
ARDURRA
11750 Katy Freeway, Suite 300
Houston, Tx 77079

Sub: Proposal for topographic survey for proposed 16-inch waterline, City of Tomball

Mr. Donart,

We are pleased to submit this revised proposal to perform a topographic survey for the proposed 16-inch waterline, City of Tomball. This proposal is based on our understanding from your e-mail dated 6/14/2024, 6/15/2024, 07/24/2024 and 08/02/2024.

1.0 Scope of Service:

1.1 Limits of topographical survey is as follows:

Holderrieth Rd. (Major thoroughfare) under Tomball Prkwy (249) bridge and 100 feet past the Tomball Prkwy (249) right-of-way ~625 LF.

Tomball Prkwy (249) -Southbound Feeder Rd. (Major thoroughfare) from Holderrieth Rd. to Boudreaux Estates Dr. ~ 5,380LF.

Boudreaux Estates Dr. from Tomball Prkwy (249) – Southbound Feeder Rd. to Rocky Rd. ~ 1,300LF.

Rocky Rd. from Boudreaux Estates Dr. to Interchange Dr. ~ 1,600 LF.

1.2 Set Controls/TBM along the alignment. Tie the survey to nearest available City of Tomball/TXDOT/HECTRA survey control markers.

1.3 Survey Geotech Bores.

1.4 Prepare survey control drawings.

2.0 Deliverables:

2.1 Autocad plan view only drawing with all the topographic features as surveyed in field, and apparent right-of-way and lot lines.

2.2 Survey control drawings at 60%, 90% and 100% submittals.

3.0 Exceptions:

3.1 Plan & Profile drawing.

3.2 Private Utility Coordination.

3.3 Boundary survey or establish right-of-way.

3.4 Additional survey outside the survey limits as identified in above section 1.0.



August 2nd, 2024
Mr. Patric Donart, P.E., CFM
ARDURRA
Survey Proposal for a Water in the City of Tomball
Page 2 of 2

4.0 Client Responsibilities:

- 4.1 Provide the record drawings.
- 4.2 Provide access to site.
- 4.3 Private utility coordination.

5.0 Schedule:

Eight weeks from the date of notice to proceed for submitting the Autocad file of the topographic survey. Survey control drawings will be submitted eventually in accordance with the client's project schedule.

6.0 Fees:

Major Thoroughfare: (625 LF + 5,380 LF) @ \$5.50/LF =	\$33,027.50
Minor roads: (1,300 LF +1,600 LF) @ \$4.00/LF =	\$11,600.00
Survey geotech bore holes (Lumpsum) =	<u>\$2,500.00</u>
Total Amount:	<u>\$47,127.50</u>

We appreciate the opportunity to provide this proposal. Please review the proposal and let us know if you have any questions. Looking forward to working with you on this project.

Regards,

Vas Vellore, P.E., RPLS
ASV Consulting Group, Inc.



GEOTEST ENGINEERING, INC.

Geotechnical Engineers & Materials Testing

5600 Bintliff Drive

Houston, Texas 77036

Telephone: (713) 266-0588

Fax: (713) 266-2977

Proposal No. 1140664699

August 2, 2024

Mr. Sekhar Ambadapudi, PE
Ardurra
11750 Katy Freeway, Suite 300
Houston, Texas 77079

**Reference: Geotechnical Investigation
City of Tomball – 16-inch Waterline
Tomball, Texas**

Dear Mr. Ambadapudi:

As per your request on June 17, 2024, Geotest Engineering, Inc. (Geotest) is pleased to submit this proposal for the above referenced project.

The project consists of design and construction of approximately 8,300 LF of 16-inch waterline in City of Tomball. The proposed water line, starting from the intersection of Holderroeth Road and SH 249 going south along SH249 and traversing west along Boudreaux Estates Drive to Rocky Road and south along Rocky Road to just south of SH 99. The project also includes water line crossing SH 249 connecting to new Costco facility on the east side of SH 249. The proposed waterline will be primarily installed by open cut method of construction, except at few locations, where it will be installed by trenchless method of construction. The proposed water line will be placed at a depth of 5 to 7 feet below existing ground at the open cut areas and about 10 to 15 feet below existing ground at the proposed trenchless locations.

Purpose and Scope

The purpose of this study is to explore the subsurface conditions and to develop geotechnical recommendations pertinent to the proposed water line.

The scope of services is based on the information provided to us through e-mails dated June 17, 2024, June 18, 2024 and August 2, 2024 and consists of the following tasks:

- apply TxDOT permit for borings in TxDOT ROW

- calling Texas 811 and coordinating with utility locators to get areas for the proposed borings cleared and mark the boring locations and coordinate with representatives of utility companies to clear the marked boring locations;
- drilling and sampling:
 - two (2) borings each to a depth of 40 feet at SH 249 crossing.
 - twelve (12) borings each to a depth of 15 feet at the open cut locations.
 - two (2) borings each to a depth of 30 feet for trenchless construction.
 - Convert two (2) borings to piezometers to monitor long term water level measurements.

The proposed boring/piezometer program is presented on Attachment No. 1 and Plan of Borings, Figures 1;

- perform a Desktop Fault Study for the proposed waterline easement;
- perform laboratory tests on selected representative soil samples to determine the engineering properties of the soils and to select design soil parameters;
- perform engineering analyses in accordance with latest Houston Public Works Infrastructure Design Management Manual (IDM), including recommendations for open cut and trenchless construction, bedding and backfill, groundwater control and construction considerations;
- prepare a geotechnical report; and
- prepare a separate trench safety letter report.

It is understood that the survey information of the borings will be provided by Ardurra.

Project Schedule

We should be able to start the field work within two (2) weeks after receiving your written authorization or one (1) week after receiving TxDOT permit access, whichever is latest. The fieldwork will be completed in about two (2) weeks, barring bad weather. The laboratory tests will be completed in about four (4) weeks. The geotechnical investigation report, which will include field and laboratory data and design recommendations, will be submitted in about ten (10) weeks after receiving the notice to proceed.

Cost

Based on the scope of work outlined above, the cost of the field investigation, laboratory testing, engineering analyses, and a final report will be a lump sum of \$43,868.00. The cost breakdown is given on Attachment No. 2.

We appreciate the opportunity to propose this project. We hope this proposal meets your approval. If you have any questions, please contact us.

Very truly yours,
GEOTEST ENGINEERING, INC.



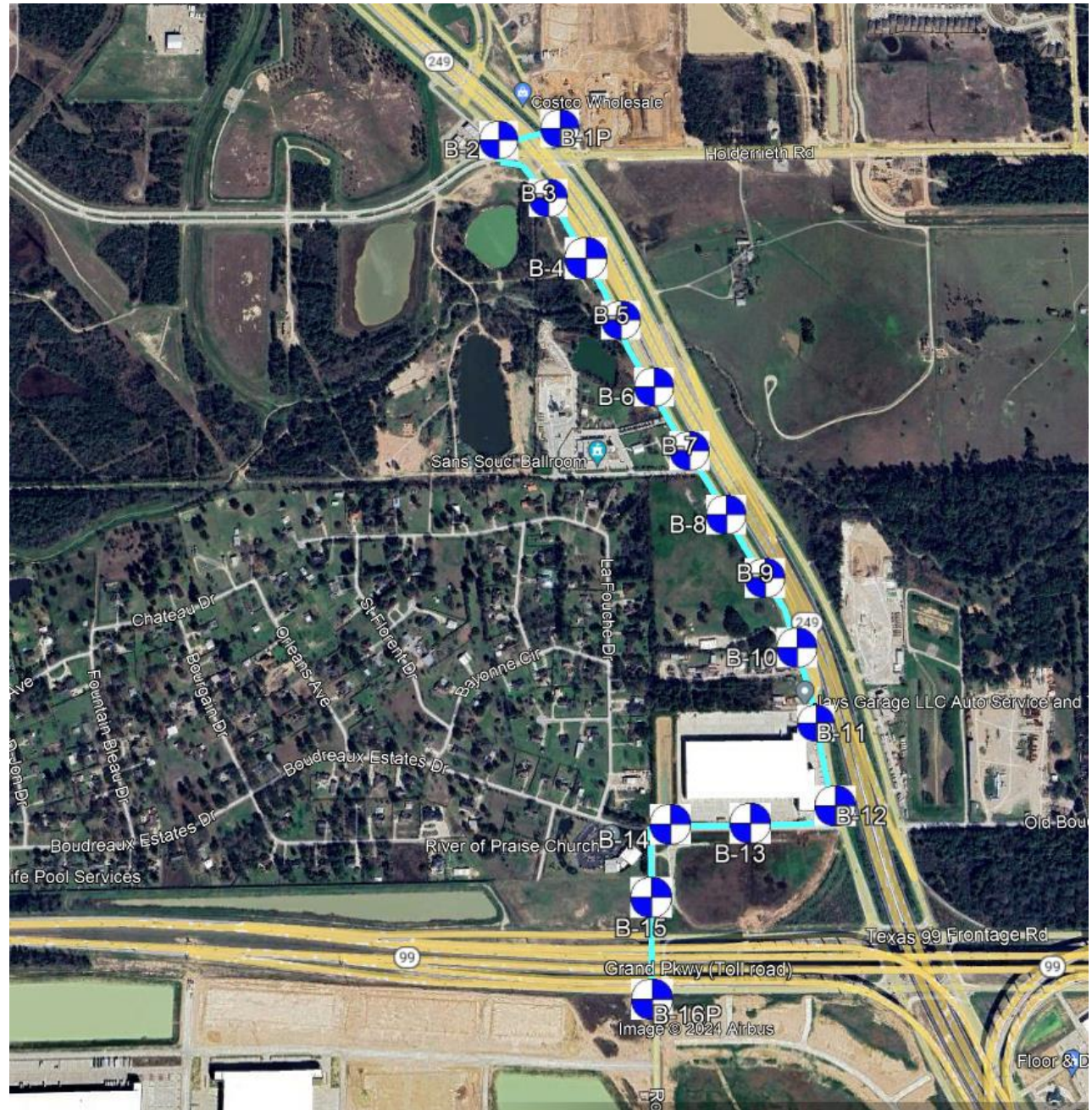
Naresh Kolli, P.E.
Sr. Project Manager

MB\XN\ego
Copies Submitted: (1-PDF)
Enclosures: Attachment No. 1 – Proposed Boring/Piezometer Program
Attachment No. 2 – Cost Breakdown
Plan of Borings, Figure 1
PC38\Geotechnical\Proposals\1140646699.DOC

TABLE 1
BORING/PIEZOMETER DEPTHS

Location	Boring No.	Borings	Piezometers
		Depth (feet)	Depth (feet)
249 Crossing	GB-1P	40	40
	GB-2	40	
249 ROW	GB-3	15	
	GB-4	15	
	GB-5	15	
	GB-6P	15	
	GB-7	15	
	GB-8	15	
	GB-9	15	
	GB-10	15	
	GB-11P	15	
	GB-12	15	
Boudreaux Estates Rd ROW	GB-13	15	
	GB-14	15	
	GB-15	30	
	GB-16P	30	30
Total	15	320	70

TABLE 2				
ITEMIZED FEE - GEOTECHNICAL SERVICES				
A. FIELD EXPLORATION	Quantity	Unit	Unit Rate	Amount
Mobilization/Demobilization (Truck Rig)	1	LS	\$700.00	\$700.00
Technician for Staking, Utilities Clearance, Field Coordination and borehole logging	48.0	hr.	\$90.00	\$4,320.00
Soil Drilling and Sampling (0'-20', Continuous)	260.0	ft.	\$25.00	\$6,500.00
Soil Drilling and Sampling (0'-50', Intermittent)	60.0	ft.	\$23.00	\$1,380.00
Grouting Holes	250.0	ft.	\$12.00	\$3,000.00
Piezometer Installation	70.0	ft.	\$24.00	\$1,680.00
Piezometer Abandonment	70.0	ft.	\$20.00	\$1,400.00
24-Hour and 30-day Ground Water Level Readings	8.0	hr.	\$90.00	\$720.00
Concrete Coring (4" dia upto 6" depth)	7.0	ea.	\$110.00	\$770.00
Concrete Coring-Additional Thickness	35.0	in.	\$12.00	\$420.00
Vehicle Charge	39.0	hr.	\$10.00	\$390.00
Graduate Engineer for Project Coordination, TxDOT County Permits for Field Work	4.0	hr.	\$115.00	\$460.00
			Subtotal	\$21,740.00
B. GEOTECHNICAL LABORATORY TESTING				
Moisture Content (ASTM D-2216)	82	ea.	\$11.00	\$902.00
Atterberg Limits (ASTM D-4318)	22	ea.	\$71.00	\$1,562.00
Passing No. 200 Sieve (ASTM D-1140)	16	ea.	\$55.00	\$880.00
Particle Size Analysis (ASTM D-421)	6	ea.	\$65.00	\$390.00
Unconsolidated-Undrained Triaxial Test (ASTM D-2850)	22	ea.	\$72.00	\$1,584.00
			Subtotal	\$5,318.00
C. ANALYSES & REPORT PREPARATION				
Sr. Project Manager, P.E.	5.0	hr.	\$205.00	\$1,025.00
Project Engineer, P.E.	13.0	hr.	\$165.00	\$2,145.00
Graduate Engineer	50.0	hr.	\$115.00	\$5,750.00
Support Personnel, Word Processing	7.0	hr.	\$70.00	\$490.00
			Subtotal	\$9,410.00
D. ALLOWANCES				
Traffic Control (Major Street)	3.0	day	\$1,800.00	\$5,400.00
Traffic Control (Minor Street)	2.0	day	\$1,000.00	\$2,000.00
			Subtotal	\$7,400.00
			Total	\$43,868.00



Legend		Geotest Engineering, Inc.	
	Boring	City of Tomball - 16-inch Water line Harris County, Texas	
	Proposed Alignment		

City of Tomball - 16-inch Waterline Engineering Design Services

		FEE - LOE								Total Hours	Sub-Consultant Fee	Sub-total Fee
		\$ 325.00	\$ 240.00	\$ 197.00	\$ 165.00	\$ 157.00	\$ 145.00	\$ 126.00				
		No. Sheets	PROJECT PRINCIPAL	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	Sr. Designer	DESIGNER	GRADUATE ENGINEER			
Project Management and Coordination	Project Management		2	8	8	8				26	\$ 5,466.00	
	Progress Meetings (4 Meetings)		2	10		16			16	44	\$ 7,706.00	
	Record Drawings research			2	8	8			12	30	\$ 4,888.00	
	CPE & AT&T Utility Coordination				4	8			16	28	\$ 4,124.00	
	TXDOT Coordination and Permitting			8	12	24		24	40	108	\$ 16,764.00	
	Design Site Visits			4	4	16			16	40	\$ 6,404.00	
Total Project Management and Coordination											\$ 45,352.00	
Drawings and Specifications	Cover Sheet	1		1	1	2		0	8	12	\$ 1,775.00	
	Sheet Index	1		2	2	4		8	4	20	\$ 3,198.00	
	General Notes and Abbreviations	1		2	2	4		8	4	20	\$ 3,198.00	
	Survey Control (Coordination Only)	3				2		8	4	14	\$ 1,994.00	
	Overall sheet Layout	1		2	4	8	4	8	6	32	\$ 5,132.00	
	Soil and Bore layout	1			24	24	10	30	30	118	\$ 18,388.00	
	16" Waterline Plan & Profiles (21 Sheets)	20		20	40	80	160	160	120	580	\$ 89,320.00	
	STD Detail Sheets (Water line & Paving)	5		6	10	15	20	20	20	91	\$ 14,445.00	
	TCP Layouts	3		6	8	9	15	15	12	65	\$ 10,543.00	
	TCP Standard Details and Notes	6			6	8	12	12	6	44	\$ 6,882.00	
	SW3P Layouts	3		3	3	9	12	24	12	63	\$ 9,672.00	
	SW3P Standard Detail and plan notes	2				8	8	12	8	36	\$ 5,324.00	
	Addressing plan review comments (City/County)			4	8	12	18	36	54	132	\$ 19,366.00	
	Addressing plan review comments (TxDOT)			4	4	8	8	36	54	114	\$ 16,348.00	
	Project Manual/Bid Docs (60/90/100)			12	21	24			48	105	\$ 17,025.00	
Cost estimates (60/90/100)			4	16	32	36		36	124	\$ 19,580.00		
QA/QC (60% & 100%)			8	24	24	24		12	92	\$ 15,888.00		
Total Design and Specifications											\$ 258,078.00	
Total Engineering Services Man Hours		47	4	78	138	263	241	329	334	1387		
Bid Phase Services	Prebid Conference			2		2				4	\$ 810.00	
	Issue clarifications and prepare addenda			4		16				20	\$ 3,600.00	
	Bid evaluation and contract award recommendation			3	3	10				16	\$ 2,961.00	
Total Bid Phase											\$ 7,371.00	
Construction Phase Services	Kick-off and Progress Meetings (6 meetings)			15		24			36	75	\$ 12,096.00	
	Review Submittals			10		40			40	90	\$ 14,040.00	
	Respond to RFIs			10		20			20	50	\$ 8,220.00	
	Preparation of as-built drawings					4			8	12	\$ 1,668.00	
Total Construction Phase											\$ 36,024.00	
Additional Services	Topographic survey (incl. mark-up)										47127.5	\$ 51,840.25
	Easement instruments and Title research (incl. mark-up)										0	\$ -
	Geotechnical Investigation (incl. mark-up)										43868	\$ 48,254.80
	Geotechnical Construction Testing (incl. mark-up)										0	\$ -
Total Additional Services											\$ 100,095.05	
Engineering Services	Reimbursables											
	Mileage @ 45mi/ Round Trip		720	\$ 0.65							\$ 468.00	\$ 500.00
	Prints		150	\$ 2.25							\$ 337.50	\$ 999.95
	Total Reimbursables											\$ 1,499.95
Total Engineering Services											\$ 448,420.00	