CITY OF
WASILLA
• ALASKA •

Date of Action: 2/27/17	
Approved ☑	Denied ☐
By:	

CITY COUNCIL ACTION MEMORANDUM

AM No. 17-08: Contract Award to HDL Engineering Consultants in the amount of $139,306 for E. Susitna Well Connection Engineering Services.

Originator: Public Works Director
Date: February 15, 2017 Agenda of: February 27, 2017

Route to:	Department Head	Signature	Date
X	Public Works Director		2/16/17
X	Finance Director		2-16-17
X	Deputy Administrator		2/16/17
X	City Clerk		2/16/17

Reviewed by Mayor Bert L. Cottle: 2/17/2017

Fiscal Impact: ☒yes $139,306 **Funds Available:** ☒yes

Account name/number: Wells & Completion of Pumphouse/320-4369-436.45-61
Attachments: HDL Proposal (13 pages)

Summary Statement: This is an extension of the engineering contract awarded to HDL Engineering Consultants on March 21, 2016 through Action Memorandum No. 16-09 for engineering a new well for the East Susitna Reservoir. Well construction was successful in 2016 and this contract will provide the necessary engineering to connect the well to the E. Susitna Reservoir. This project is grant funded through the State of Alaska.

Once the engineering design is complete for connecting the new well, an invitation to bid will be issued for construction and connection of the well this year. The new well will replace the existing well that has been offline for 2 years due to elevated arsenic levels detected in the drinking water.

Staff Recommendation: Adopt AM No. 17-08.

HDL ENGINEERING Consultants

January 17, 2017

Archie Giddings, Public Works Director
City of Wasilla
290 E. Herning Avenue
Wasilla, AK 99654

RE: Scope and Fee Proposal
City of Wasilla – East Susitna Well Connection

Dear Mr. Giddings:

CIVIL ENGINEERING

GEOTECHNICAL ENGINEERING

TRANSPORTATION ENGINEERING

ENVIRONMENTAL SERVICES

PLANNING

SURVEYING & MAPPING

CONSTRUCTION ADMINISTRATION

MATERIAL TESTING

RIGHT-OF-WAY SERVICES

HDL Engineering Consultants (HDL) is pleased to present this proposal for professional services to connect the recently drilled East Susitna Water Well to Wasilla's water system. This project includes professional services for surveying, preliminary engineering, permitting, final design, and bid phase services to outfit the well with a pump and controls equipment; construct approximately 1,000 linear feet of water main; and connect to the water system at the City's existing well house north of Home Depot. We have teamed with All Points North, LLC to provide Surveying/Mapping services and EDC to design electrical/controls for the new well and interior piping for the well house connection.

Background/Summary. During the summer/fall of 2015, HDL assisted with drilling and testing of an exploratory water production well on City owned property near East Susitna Avenue. Results of the drilling program indicated that the 8-inch water well drilled can support continued pumping at a rate of approximately 300 gallons per minute (GPM) with short term maximum pumping rates of up to 500 gpm. Water quality testing also indicated that the water produced is below the Environmental Protection Agency's maximum contaminant limit (MCL) of 10 micrograms per liter for arsenic. The City would like to use this well to provide water to the system and potentially blend it with an existing well that produces arsenic just above the MCL.

SCOPE OF WORK

To meet the City's goal for the project, we propose to provide professional services for the following scope of work:

Task 1 – Design

HDL will provide design services required to prepare a bidding package of plans and specifications to: outfit the East Susitna well with a pump and with controls equipment; install approximately 1,000 linear feet of 8-inch water main from the well to near the Home Depot water reservoir; and make necessary modifications to the well house and interior piping to connect into the City's water system. We anticipate the following major work items under this task:

Surveying/Mapping. All Points North will provide surveying/mapping services as detailed on the attached fee proposal. They will perform a topographic survey of the proposed alignment and set control points and benchmarks for construction. They will download survey data and deliver a base map with underground utilities, 1 foot contours, existing easements, property lines, monuments, and visible improvements. They will also prepare a survey control diagram for the final plan set.

Preliminary Design. After surveying, the first step in design is to establish baseline parameters for the overall project. The factors that have the greatest impact for future design phases will be analyzed during this phase, including:

Future Road. The City has indicated a desire for the proposed water main to follow an alignment which will not interfere with a future road connecting East Susitna Avenue with Roberts Street. Therefore, one of the first design tasks will consist of preliminary roadway design to ensure that the water main will not interfere with the future road. We will perform a brief analysis of a typical residential road section along the proposed alignment to generate an approximate finished grade surface of the future road. This will establish the minimum 10-foot bury depth for the proposed water main.

Hydraulic Analysis. Concurrently with the preliminary roadway design, we will perform a hydraulic analysis of the system to size a well pump and water pipe connection that will maximize water production from the well. Our team will review record drawings from previous projects to determine reservoir operating levels and potential areas for head losses within the system. This will also establish power requirements for the new well so that EDC can select appropriate electrical switchgear, size conductors, and design well controls.

Well Connection. We anticipate that the connection between the new buried piping and existing piping will be made using arctic pipe penetrating the side of the existing building. This will allow a new water meter and piping run to be placed as near to the chlorination and controls equipment as possible, potentially allowing the existing, higher arsenic well to be used by blending water prior to distribution. EDC will design interior piping to connect into the system.

The deliverables for this task will be a Preliminary Engineering Technical Memorandum to serve as the basis for our design, and to satisfy the Engineer's Report requirements for Alaska Department of Environmental Conservation (ADEC), Approval to Construct permits. We will also compile a set of conceptual design documents and a preliminary construction cost estimate for submittal and review by the City.

65% Plans, Specifications and Estimate. Upon completion of the preliminary design phase, our team will prepare an assembly of engineered drawings and specifications to approximately the 65% completion level. Specifications and contract documents will be based on the City of Wasilla's standard modifications to the Municipality of Anchorage Standard Specifications (MASS). Construction plans and specifications will be delivered in hardcopy format for review by City staff.

We anticipate approximately 21 plan sheets for the project, as follows:

1	Cover Sheet / Drawing Index
1	Notes, Abbreviations and Legend
1	Sheet Map, Project Layout Plan
1	Survey Control Diagram
2	Typical Sections
4	Plan and Profile – Water Extension
2	Civil Details
7	Electrical/Controls Plans and Details
2	Mechanical/Piping Plans and Details
21	**Total**

We will update our preliminary construction cost estimate based on 65% plans and specifications. The 65% cost estimate will include the necessary bid items to complete construction and will present the anticipated bid schedule for the project.

100% Bid-Ready Documents. We will address comments received from the City on the 65% design package and continue to refine the construction documents to 95% complete. We will submit the 95% plans and specifications for review, address comments and finalize the documents. The 100% complete plans and specifications will then be submitted to ADEC for review and Approval to Construct (Task 2). Any comments from ADEC will be incorporated into the final bid-ready documents.

We will update the construction cost estimate to reflect final quantities and pay items determined in the final detailing of the work. Quantities and bid items will be updated from the previous cost estimate and unit prices adjusted based on the current bidding climate to provide an accurate final estimate.

The final deliverables for this task will be bid-ready 11"x17" plans, stamped and signed by a professional engineer registered in the State of Alaska, a bid-ready Project Manual including bidding information, general contract requirements and technical specifications, and an engineer's construction cost estimate. We will provide two (2) hardcopy sets of deliverables and a CD in PDF format.

Task 2 – Environmental Review and Permitting

State Environmental Checklist. Design of this project is being funded with a State of Alaska Department of Community, Commerce, and Economic Development (DCCED) grant. HDL's environmental group will complete a State Environmental Checklist for the project to document that all required agency consultation is completed and required permits have been acquired. We will consult with appropriate resource agencies, conduct necessary environmental review and research, and complete applications to obtain required permits prior to construction. All findings and supporting documentation will be included in the State Environmental Checklist. Concurrently, we will consult with the State Historic Preservation Office (SHPO) and request concurrence with a finding of No Historic Properties Affected.

Completion of these items will ensure all required environmental documentation has been performed for the current funding source. However, if federal funds are used for construction of the project, an amendment to provide additional environmental documentation may be required.

ADEC Approval to Construct. We will submit applications, stamped design drawings, specifications, design calculations and reports to the ADEC for Approvals to Construct the water main extensions and the new water source.

Alaska Department of Natural Resources (ADNR) Water Rights. ANDR will require that a Temporary Water Use Permit (TWUP) be in place throughout the application process for water rights. The previous TWUP has expired and will need to be reprocessed. HDL will draft the application on behalf of the City of Wasilla to ensure it is in place throughout the process of obtaining water rights authorization. In addition, HDL will draft the ADNR Water Rights Permit and Statement of Beneficial Use on behalf of the City of Wasilla. Per ADNR, a public notice is required if the appropriation of water is greater than 5,000 gpd. We have included reimbursable expenses in our fee estimate to assist the City with developing and publishing a public notice.

Task 3 – Bid Phase Services

After completion of bid-ready documents, HDL will assist the City with bidding and in getting the successful bidder under contract for the work. On behalf of the City, we will prepare the invitation to bid, respond to bidder's questions, attend a pre-bid conference, issue written addendums, tabulate bids and check proposals for completeness, review bonding and insurance submittals, and provide a written recommendation for award to the City based on the lowest responsive bid.

BASIC ASSUMPTIONS

The following basic assumptions were used to prepare this estimate:

1. Geotechnical investigations are not included. Designs will be based on the geotechnical report for the existing reservoir and well house (provided by Wasilla), and well logs for the East Susitna Well. Potential for high groundwater and bedrock will not be delineated.
2. Project will be bid as a single package, one-time.
3. HDL will prepare and submit the permits necessary for construction of the new well and water mains. We have included estimates for permitting fees, however, if fees are different than our estimates an amendment may be required.
4. Based on project location and information obtained from the United States Fish and Wildlife Services National Wetlands Inventory, we do not anticipate permitting requirements for impacts to wetlands or waters of the U.S.
5. A structure over the new well and/or building addition to the existing well house is not anticipated or included.
6. Wetlands are not expected to be encountered and a wetland delineation is not included.

7. Construction phase services are not included, but will be added by amendment.
8. ADEC approval to operate the new well and water main will be sought during the construction phase of this project.

Please let us know immediately if any of these assumptions are contrary to your anticipation, so that we may revise our proposed scope of work.

SCHEDULE

We anticipate completing the bid package in time for bidding in late-spring 2017 with construction award in time for the summer 2017 construction season.

COST PROPOSAL

We propose to provide the aforementioned services on a time-and-expenses basis using our published hourly labor rates and receiving reimbursement for subcontracts and expenses at cost plus 10% (reimbursement for travel expenses is not anticipated). Based on the scope of work and schedule, we expect the cost of our services not to exceed **$139,306** as shown on the attached detailed fee estimate.

We have prepared our estimate of the time required to perform the proposed scope of services based on previous experience. Additional budget may be necessary if additional design services are requested or required.

We look forward to working with you on this project. If you have any questions, you can contact me at (907) 746-5230.

Sincerely,

HDL Engineering Consultants, LLC

David Lundin, P.E.
Principal Civil Engineer

attach: Fee Proposal Dated January 17, 2017
All Points North Fee Proposal Dated December 19, 2016
EDC Fee Proposal Dated December 21, 2016

cc: Chris Bowman, P.E.

FEE PROPOSAL WORKSHEET

Engineering Services for

East Susitna Well Connection

TASK	ACTIVITY	QTY	RATE	HDL LABOR*	REIMBURSABLE EXPENSES	SUB-CONTRACTS	SUBTOTAL	TOTAL
1.0	***Design***							**$101,935**
1.1	Project Management/Coordination						$3,800	
	Prinicipal Civil Engineer	4 hrs	@ $170	$680				
	Civil Engineer	24 hrs	@ $130	$3,120				
1.2	Surveying/Mapping						$3,480	
	All Points North	1 budget	@ $3,480			$3,480		
1.3	Preliminary Design						$35,065	
	Prinicipal Civil Engineer	8 hrs	@ $170	$1,360				
	Civil Engineer	60 hrs	@ $130	$7,800				
	Engineering Assistant	100 hrs	@ $100	$10,000				
	Drafter	60 hrs	@ $105	$6,300				
	Clerical	4 hrs	@ $70	$280				
	EDC	1 budget	@ $9,325			$9,325		
1.4	65% Plans, Specifications and Estimate						$27,715	
	Prinicipal Civil Engineer	8 hrs	@ $170	$1,360				
	Civil Engineer	40 hrs	@ $130	$5,200				
	Engineering Assistant	80 hrs	@ $100	$8,000				
	Drafter	40 hrs	@ $105	$4,200				
	Clerical	4 hrs	@ $70	$280				
	EDC	1 budget	@ $8,675			$8,675		
1.5	100% Bid-Ready Documents						$31,875	
	Prinicipal Civil Engineer	16 hrs	@ $170	$2,720				
	Civil Engineer	60 hrs	@ $130	$7,800				
	Engineering Assistant	80 hrs	@ $100	$8,000				
	Drafter	40 hrs	@ $105	$4,200				
	Clerical	4 hrs	@ $70	$280				
	EDC	1 budget	@ $8,875			$8,875		

FEE PROPOSAL WORKSHEET

Engineering Services for

East Susitna Well Connection

TASK	ACTIVITY	QTY	RATE	HDL LABOR*	REIMBURSABLE EXPENSES	SUB-CONTRACTS	SUBTOTAL	TOTAL
2.0	***Environmental Review and Permitting***							**$24,620**
2.1	State Environmental Checklist						$10,500	
	Civil Engineer	2 hrs	@ $130	$260				
	Environmental Manager	8 hrs	@ $155	$1,240				
	Environmental Specialist	100 hrs	@ $90	$9,000				
2.2	ADNR Water Rights						$9,010	
	Civil Engineer	4 hrs	@ $130	$520				
	Environmental Manager	8 hrs	@ $155	$1,240				
	Environmental Specialist	60 hrs	@ $90	$5,400				
	Permit Fees	1 allow	@ $1,850		$1,850			
2.3	ADEC Approval to Construct						$5,110	
	Prinicipal Civil Engineer	2 hrs	@ $170	$340				
	Civil Engineer	4 hrs	@ $130	$520				
	Engineering Assistant	24 hrs	@ $100	$2,400				
	Permit Fees	1 allow	@ $1,850		$1,850			
3.0	***Bidding Assistance***							**$9,170**
3.1	Pre-Bid Conference						$1,660	
	Prinicipal Civil Engineer	2 hrs	@ $170	$340				
	Civil Engineer	4 hrs	@ $130	$520				
	Engineering Assistant	8 hrs	@ $100	$800				
3.2	Assistance During Bidding						$7,510	
	Prinicipal Civil Engineer	4 hrs	@ $170	$680				
	Civil Engineer	16 hrs	@ $130	$2,080				
	Engineering Assistant	16 hrs	@ $100	$1,600				
	Designer/Drafter	8 hrs	@ $105	$840				
	Clerical	8 hrs	@ $70	$560				
	EDC	1 budget	@ $1,750			$1,750		
Subtotal				**$99,920**	**$3,700**	**$32,105**		**$135,725**
Markup**					$370	$3,211		$3,581
Total Fee				**$99,920**	**$4,070**	**$35,316**		**$139,306**

*also includes those expenses charged without a markup

**10% for subcontracts, 10% for reimbursable expenses

ALL POINTS NORTH
LAND SURVEYING & CIVIL ENGINEERING
P: 907-746-4185 | F: 907-746-4186

To: **Chris Bowman, P.E.**
HDL Engineering Consultants
cbowman@hdlalaska.com
907-982-4957

Date: **12/19/2016**

Job: **16-130 HDL Topo COW EastSuWater**

Subject: **Proposal for Topographic Surveying Services: East Susitna Water Well Connection**

PROPOSAL FOR PROFESSIONAL SERVICES

Mr. Bowman,
I have received your request for a proposal for topographic survey of the East Susitna Water Well Connection. The proposal for the project follows:

SCOPE OF SERVICES

- **Field Surveying:**
  APN Field Crew will perform topographic surveying for design engineering purposes, within the boundaries outlined on the attached map. In addition, a minimum of 4 control points will be tied or established (to be listed on the design planset by HDL).

- **Office Mapping:**
  APN will summarize the results of the survey on a CAD basemap. AutoCAD 2016 format with layering and symbols per ADOT, in Alaska State Plane Zone IV coordinate system, expressed in U.S. Survey Feet. This map will be stamped by a registered surveyor. The basemap will include a control point list and notes, underground utility lines (per utility locate by others), 1 foot contours, easements, property lines, monuments, and visible improvements such as roads, train tracks, buildings, signs.

- **Correspondence and final deliverables:**
  APN will provide deliverable CD or thumb drive including mapping, property research, CAD deliverables, CAD Landxml terrain model, pdfs, and MSB lidar orthoimage with .tfw.

SCHEDULE AND DELIVERABLES

Should work be authorized by January 1, 2017, deliverables will be provided by the end of January 31, 2017. Compensation is due within 30 days of date invoice.

COMPENSATION

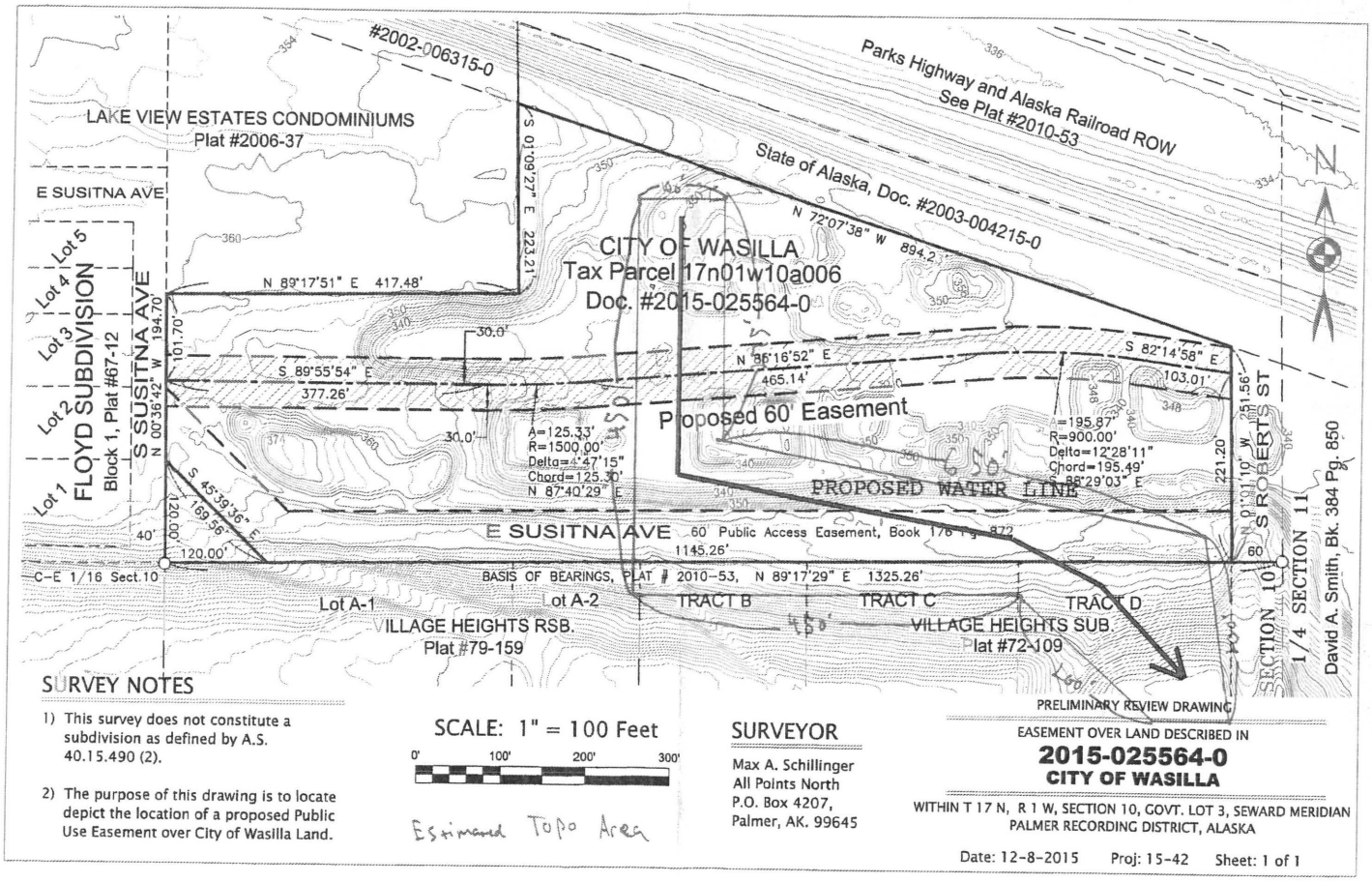
2017 one-man field/professional office rate is $145/hr. Anticipated for this project is as follows:

Field Surveying Asbuilt:	1 Day
Office Mapping:	1 Day
Review, coordinating with locate, correspondence, research, contingency:	1 Day
Total: 3 Days @ 8 * $145 =	$3480

We look forward to providing these services to HDL. Let me know if you request changes.

Max Schillinger

Max Schillinger, P.E., P.L.S.



SURVEY NOTES

1) This survey does not constitute a subdivision as defined by A.S. 40.15.490 (2).

2) The purpose of this drawing is to locate depict the location of a proposed Public Use Easement over City of Wasilla Land.

SCALE: 1" = 100 Feet

0' 100' 200' 300'

Estimated Topo Area

SURVEYOR

Max A. Schillinger
All Points North
P.O. Box 4207,
Palmer, AK. 99645

PRELIMINARY REVIEW DRAWING

EASEMENT OVER LAND DESCRIBED IN

2015-025564-0

CITY OF WASILLA

WITHIN T 17 N, R 1 W, SECTION 10, GOVT. LOT 3, SEWARD MERIDIAN
PALMER RECORDING DISTRICT, ALASKA

Date: 12-8-2015 Proj: 15-42 Sheet: 1 of 1

ENGINEERING DESIGN & CONSULTING
An Alaskan Owned Professional Corporation

EDC, INC.
213 W. Fireweed Lane
Anchorage, AK 99503

December 21, 2016

Chris Bowman, P.E.
Hattenburg, Dilley, & Linnell
202 W Elmwood Ave, Suite 1
Palmer, AK 99645

Subject: City of Wasilla East Susitna Well Connection – Fee Proposal (revised)

Dear Chris:

This letter is EDC's proposal to provide electrical and mechanical engineering services in support of the City of Wasilla's East Susitna Well Connection design. This proposal is based on the following:

SCOPE OF WORK

ELECTRICAL:

The design will include providing power for a new approximately 30HP well pump located remote from the existing well house. It is anticipated that the pump will be powered from a new reduced voltage (soft-start) motor starter installed in the existing motor control center (MCC) in the well house. A motor feeder will be run from the well house to the new well pump location.

The new well pump will be controlled from the existing programmable logic controller (PLC) in the well house based on tank level as sensed by the existing level transmitter. The controls shall be modified as necessary to allow either the existing well, the new well or both to operate when required. A new flow transmitter will be provided to record flow from the new well line.

It is anticipated that the design will include the following electrical drawings:

E1 – Power One-line, Legend and Abbreviations
E2 – Well Electrical Site Plan
E3 - Well House Electrical Plan
E4 - MCC Elevation and Electrical Details
E5 - PLC Control Panel Modifications
E6 - Electrical Control Schematics

MECHANICAL:

The mechanical design will include the piping layout necessary between where the well line emerges above grade to the tie in point inside the existing well house. We anticipate that the piping will enter the building upstream of the existing flowmeter, run parallel to and above the existing piping toward the chlorination room, through a new flow meter

and tie into the existing piping downstream of the existing flowmeter. Heat will be provided to the exterior portion of arctic pipe via electric heat trace.

It is anticipated that the design will include the following mechanical drawings:

M1 – Mechanical Legend, Abbreviations & Specifications
M2 – Floor Plan, Piping Sections & Details

Electrical and mechanical specifications as well as an engineer's construction cost estimate will also be provided as part of the design.

The scope of work shall also include bidding assistance such as answering bid questions and issuing addenda.

ASSUMPTIONS

- The existing PLC control panel has enough spare I/O for the new flow transmitter and well pump status and control signals.
- HDL will provide EDC, Inc. with the floor plans and/or site plans background drawings in AutoCAD format for our use.
- Mechanical specifications will be provided on the drawings.
- Two review meetings, at 35% and 65%, will be held in Wasilla.

EXCLUSIONS

- This proposal excludes any remote SCADA provisions. All controls and alarming will be local to the well house only.
- This proposal does not include any electrical utility line extension design.
- This proposal also does not include any construction management services such as site inspections, submittal reviews, design clarifications or record drawings.
- This proposal does not include design of piping external to the building.

DELIVERABLES

- Full and/or half-size, reproducible copy (PDF) of the design drawings will be provided.
- An electronic copy of the drawings in AutoCAD format will also be available upon request.
- Electronic copies of the specifications and estimate will also be provided.

FEE

The fee to perform the above scope of work is:

	Electrical Design	Mechanical Design
35% Design	$6,125.00	$3,200.00
65% Design	$5,250.00	$3,425.00
Final Design	$6,125.00	$2,750.00
Bidding Assistance	$1,000.00	$750.00
SubTotal	$18,500.00	$10,125.00
TOTAL DESIGN FEE:		**$28,625.00**

Please feel free to contact me if you have any questions concerning this proposal.

Sincerely,

John Faschan, P.E.
EDC, Inc.

SEWER	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
	$63,748.66					
Add: Inventory Purchases						
Less: Inventory Used (Services)						
Less: Inventory Sold						
over and short						
						0.12
Ending SEWER Inventory	$ 63,748.66	$ -	$ -	$ -	$ -	$ -
Sewer JE						
DR (CR) 310-4353-435.60-99		$ -	$ -	$ -	$ -	$ -
WATER						
	Jan-17	**Feb-17**	**Mar-17**	**Apr-17**	**May-17**	**Jun-17**
Beginning WATER Inventory	46,697.38					
Add: Inventory Purchases						
Less: Inventory Used (Services)						
Less: Inventory Sold						
Over or Short	-0.15			$ 1.44		($0.01)
Ending WATER Inventory	$ 46,697.23	$ -	$ -	$ 1.44	$ -	$ 46,697.38
Water JE						
DR (CR) 320-4363-436.60-99			$ -	$ (1.44)	$ -	$ 0.01