

RESOLUTION 03-01-2021

A RESOLUTION AWARDING THE DESIGN AND CONSTRUCTION ENGINEERING OF THE SUMMIT RIDGE PRESSURE IRRIGATION TANK AND RELATED FACILITIES TO HANSEN, ALLEN & LUCE, INC.

WHEREAS, Santaquin City is a municipality and political subdivision of the State of Utah with the responsibility of providing culinary and irrigation water systems to its residents; and

WHEREAS, the City has a contractual obligation to provide sufficient system capacity and water supply to the Summit Ridge Planned Community Development, as approved in 2000; and

WHEREAS, an irrigation tank, booster pump station, and roughly one mile of piping is needed to create an irrigation water source and system capacity for the Summit Ridge Area while relieving the demand on the culinary water system that currently provides the irrigation water supplied to that area; and

WHEREAS, Hansen, Allen & Luce recently completed the Santaquin City Water Master Plans and has proven capable of performing the aforementioned design and have provided the terms and conditions of doing so in the attached; and

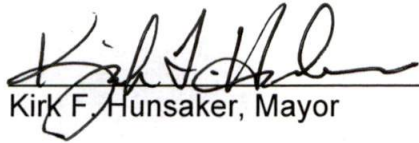
WHEREAS, Santaquin City has reviewed said terms and conditions and approves of the design and construction engineering of said facilities pursuant the attached, which represents an estimated 7.15% of the total project costs, which is below industry standards; and

WHEREAS, the cost of design and construction of these new facilities will be paid for by the residents of the future phases of the Summit Ridge development through the collection of impact fees.


NOW THEREFORE, be it resolved by the City Council of Santaquin City to award the design and construction engineering services of Summit Ridge Pressure Irrigation Tank and related facilities to Hansen, Allen & Luce, Inc in an amount not to exceed \$471,887 pursuant to the terms of the attached.

ADOPTED AND PASSED by the City Council of Santaquin City, Utah, this 2nd day of March 2021.

SANTAQUIN CITY


Kirk F. Hunsaker, Mayor

Attest:


K. Aaron Shirley, City Recorder



MEMORANDUM

February 26, 2021

To: Santaquin City Mayor and City Council
From: Norm Beagley, P.E., Assistant City Manager
RE: Summit Ridge Pressure Irrigation Final Design

Mayor and Council Members,

As recently presented and discussed in council meetings, there is a need to construct an irrigation water tank and booster pump station in Summit Ridge. This new master planned enhancement to our pressurized irrigation system will be located adjacent to the existing Summit Ridge culinary water tank.

As discussed, these new facilities will increase the capacity of our water systems in the Summit Ridge area. It will create irrigation water storage and access to irrigation water sources for this master planned community while relieving the existing demand on our culinary system. Since we are contractually obligated to provide these new facilities to serve the future phases of the Summit Ridge Planned Community Development, which was approved in 2000, the costs for these new facilities will be paid by future residents of the upcoming phases of development through impact fees.

Hansen, Allen, and Luce submitted a proposal for the final design for construction services for these needed facilities. Their proposal is attached for your review. Hansen, Allen, and Luce's proposed scope and Not to Exceed fee for this final design work and for construction engineering services is \$471,887. This proposed amount is very favorable in relation to the project costs at 7.15% of the estimated cost of construction for this \$6.6 million project. A typical cost for this scope of work would normally be in the range of 10%-14% of estimated project costs.

Hansen, Allen, and Luce is very familiar with Santaquin City's water system facilities, standards, etc. and is therefore well suited to complete this work for us for this favorable design fee amount. Hansen, Allen, and Luce successfully completed projects for Santaquin City in the past year. They recently completed our culinary water and pressure irrigation master plan updates.

I am happy to answer any questions you may have on this item.



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Mr. Norm Beagley
Assistant City Manager
Santaquin City
275 West Main Street
Santaquin, Utah 84655

February 26, 2021

RE: Zone 11 West Pressurized Irrigation System

Dear Mr. Beagley:

As requested, Hansen, Allen & Luce, Inc. (HAL) is providing this scope, budget, and schedule for the design of the Zone 11 West Pressurized Irrigation System. The proposed system is to include pressurized irrigation transmission pipelines, pump station, and storage tank or pond. This scope of services addresses our understanding of the services HAL will provide as well as a proposed project budget.

SCOPE OF SERVICES

Attached separately is our proposed full scope of work including project understanding and deliverables.

ENGINEERING FEES

Our proposal is based upon a "Not to Exceed" contract.

Based on the attached scope of work and assumptions, the estimated fee for completion of the project, as outlined in the work plan and attached budget spreadsheet, is **\$358,049** for design, and \$113,838 for services during construction. The cost estimate is based upon information available to us at this time.

Engineering fees for design services by task are as follows:

TASK NO.	TASK DESCRIPTION	FEE
100	Progress and Design Review Meetings	\$5,306
200	Preliminary Engineering and Siting	\$122,447
300	CM/GC Request for Proposals	\$4,300
400	Final Design	\$225,996
TOTAL		\$358,049

Engineering fees for service during construction services by task are as follows:

TASK NO.	TASK DESCRIPTION	FEE
600	Engineering Services During Construction	\$113,838
	TOTAL	\$113,838

CONSTRUCTION COSTS

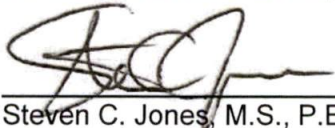
The City's Pressurized Irrigation Water Master Plan, prepared by HAL, lists a preliminary construction cost estimate for this project of approximately \$6,545,000. A more refined cost estimate will be prepared during later stages of design.

SCHEDULE

HAL proposes to complete the design of the storage tank or pond and pipeline from the storage site by mid-October 2021 with construction starting immediately thereafter so that the storage system can be in operation by mid-April 2022. HAL proposes to complete the design of the pump station and remaining pipeline by the end of December 2021 with construction being completed in October 2022. Please refer to the attached proposed project schedule for more detailed information.

Thank you for your consideration of our firm to complete this work. We invite you to call if you have any questions related to the scope of services outlined above.

Sincerely:
HANSEN, ALLEN & LUCE, INC.



Steven C. Jones, M.S., P.E.
Principal

**SCOPE OF WORK
Santaquin City
Zone 11 West Pressurized Irrigation System**

PROJECT UNDERSTANDING

Santaquin City desires to construct a pressurized irrigation system to service Zone 11 West. Growth and development in the area requires the development of the project. The project includes Projects 3 and 4 as identified in the Pressurized Irrigation Water Master Plan and Capital Facility Plan dated January 19, 2021 prepared by HAL.

The project consists of transmission pipelines, pump station, and storage tank and includes the following facilities.

1. 24-inch Transmission Pipeline: Approximately 5,520-feet of 24-inch pipeline is to connect to the existing 24-inch pipeline near the intersection of 14400 South and 600 West and extend west crossing the UPRR tracks through an existing casing and connecting to the existing 24-inch pressurized irrigation pipeline near to Summit Ridge Parkway and Flagstone Drive.
2. Zone 11 West Pump Station: The pump station will be located near the intersection of Mountain View Drive and Summit Trails where it will connect to the existing 24-inch transmission pipeline. The pump station is to have a capacity of 3,000 GPM and include Amiad type automatic self-cleaning filter for the appropriate design flows. The pump station will discharge to the 16-inch Transmission Pipeline.
3. 16-inch Transmission Pipeline: Approximately 5,235-feet of 16-inch pipeline is to connect the Zone 11 West Pump Station to the Zone 11 West Storage. Another 2,600-Feet of 16-inch transmission pipeline is to extend from the Zone 11 West Tank to connect to the existing pressurized irrigation system near the intersection of Vista Ridge Road and Sageberry Drive.
4. Zone 11 West Storage: A 10 ac-ft (3.26 Million Gallon) storage tank or pond is to be located in the area of the existing Zone 11 West drinking water storage tank.

Figure 1 below illustrates the project area and proposed improvements.

Construction of the storage tank or pond and the 16-inch transmission pipeline from the tank or pond to the existing pressurized irrigation system near the intersection of Vista Ridge Road and Sageberry Drive needs to be completed and ready for use by mid-April 2022. The construction of the pump station and other pipelines will follow.

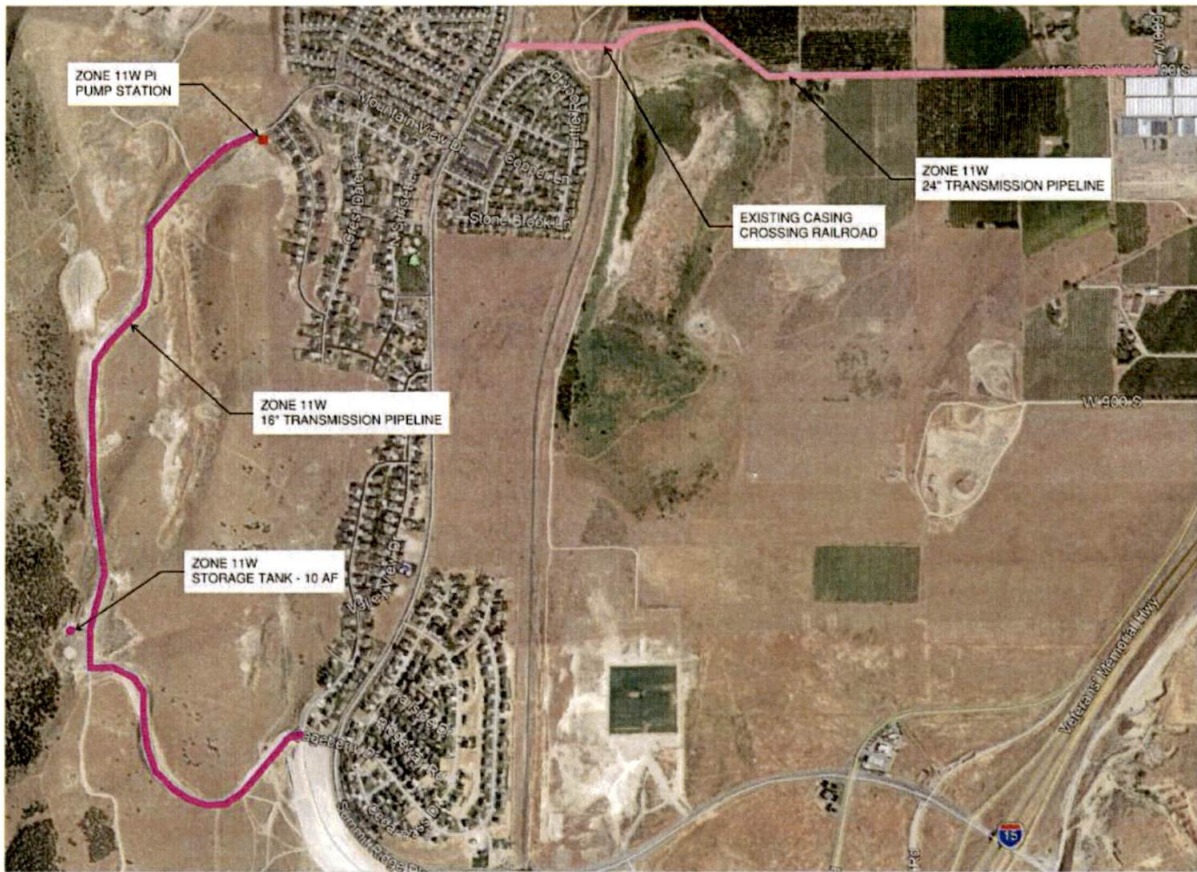


Figure 1: Zone 11 West Pressurized Irrigation System

The scope of work for the project will be to complete hydraulic modeling, preliminary design, and final design drawings and specifications for the transmission pipelines, pump station, and storage tank.

HAL proposes to develop the design of the Zone 11 West Pressurized Irrigation pump station as a site-specific system complete with electrical, controls, pumps, piping, filters, and CMU block building. As part of the design development, HAL will evaluate incorporating a drinking water pump station in same structure. The associated scope and fee assumes that a separate drinking water pump station will be constructed at some time in the future.

HAL proposes to develop the design of the Zone 11 West Storage Tank as a traditional circular cast in place reinforced concrete structure approximately 20-feet high and about 176-feet in diameter. As part of the design development HAL will evaluate a concrete lined storage pond. Depending on site conditions and configuration a concrete lined pond may be more cost effective. The associated scope and fee assumes that a cast in place reinforced concrete structure will be the preferred alternative.

HAL proposes to develop the design of the transmission pipelines utilizing PVC C900 waterline pipe. It is our understanding that a casing was installed crossing the UPRR tracks in a previous project. The exact location and size of the casing is to be provided by the City. Therefore, coordination and permitting with UPRR is not included in the scope and fee.

The scope of work for this project is outlined by task, activity, and deliverable below.

WORK PLAN

TASK 100 PROGRESS AND DESIGN REVIEW MEETINGS

Key team members will meet with City personnel at the start of the project to establish roles and responsibilities, review the scope, schedule, and deliverables, define key project elements, as well as project goals and to review progress of the project and coordinate on design efforts. HAL will also meet with City personnel at key design milestones during the development of the project to review progress and coordinate on design efforts. HAL proposes to conduct virtual meetings but can adjust this as the project progresses and based on the needs for the meeting.

Activities:

1. Project kickoff meeting.
2. Design Review/Coordination Meetings (Scope and Fee assumes five meetings, see subsequent tasks for additional information).
3. Two project progress/coordination meetings scheduled as needed.

Deliverables:

- Meeting notes with action items and follow up.

TASK 200 PRELIMINARY ENGINEERING AND SITING

HAL will collect existing data of the proposed pipeline alignments, pump station and storage tank sites including survey data and third-party utility data. We will use existing LiDAR data provided by the City and aerial photographs to prepare a base map in AutoCAD. Existing utility information and property parcels will be included in the project base maps.

It is proposed that a geotechnical investigation be completed after the conceptual locations of all facilities have been determined. Our sub-consultant, AGECE, will conduct the geotechnical investigations. We propose to take four borings at the tank site, four borings along the proposed transmission pipeline route, and one boring at the proposed pump site. The geotechnical report will provide design criteria to be used by the structural engineer. If needed, pavement thickness will also be determined to provide more accurate information for contractors during bidding.

There may be some utilities within the project corridor that will need to be potholed and located as part of the design effort. The proposed scope of work and associated fee assumes utility test holes will be conducted by the City.

Preliminary design drawings will be prepared to approximately a 30% level. Anticipated preliminary design drawings will include transmission pipeline alignments, storage tank or pond site plan, and pump station site plan.

A design review/coordination meeting will be held to receive comments on conceptual design. The outcome of the meeting will be decisions on the path forward to complete the preliminary design of the system facilities.

A review meeting to receive comments on preliminary design will be conducted at the conclusion of the preliminary design phase. The outcome of the meeting will be decisions on the path forward to complete the final design of the system facilities.

Activities:

1. Collection of existing data including existing utility data from third-party utilities.
2. Topographic mapping (survey) of project sites to locate monuments, establish survey control, and map surface features.
3. Hydraulic analysis and modeling of the pressurized irrigation system in the Zone 11 West service area to accurately determine the pumping capacity and requirements of the pumping stations.
4. Prepare hydraulic design calculations for the pump stations.
5. Analyze storage options including a traditional circular cast in place reinforced concrete structure and concrete lined pond and evaluate storage locations. Results will be summarized in a technical memorandum. The associated scope and fee assumes that a cast in place reinforced concrete structure will be the preferred alternative.
6. Evaluate pump station location and configuration for incorporating a drinking water pump station in same structure. Coordinate with the City on the proposed pump station location to determine the most viable site. The associated scope and fee assumes that a separate drinking water pump station will be constructed at some time in the future.
7. Prepare conceptual site plans illustrating the pump station and storage tank or pond configurations. Conceptual site plans will be submitted to the City for review and comment.
8. Identify the alignment of pipelines.
9. Perform a geotechnical study of the storage site, pump station site, and along pipeline alignments.
10. Development of 30% design drawings.
11. Prepare Engineer's Opinion of Probable Construction Costs.
12. Conceptual and Preliminary Design Review/Coordination meetings.

Deliverables:

- Technical Memorandum of storage alternatives and location.
- Conceptual site plans
- Geotechnical Engineering Report
- 30% Design Drawings (transmission pipeline alignment, pump station configuration and site plan, and storage configuration and site plan).
- Engineer's Opinion of Probable Construction Costs
- Design Review/Coordination meeting notes.

TASK 300 CM/GC REQUEST FOR PROPOSALS

HAL will develop a CM/GC Request for Proposals based on City provided documents that will include contractor prequalifications and assist the City with the distribution of documents and selection of the CM/GC. The CM/GC Request for Proposals will include the 30% design drawings to allow contractors to submit bids for the construction of the proposed improvements.

Activities:

1. Develop CM/GC Request for Proposals.
2. Assist the City with the distribution of CM/GC request for proposals to Contractors.
3. Evaluate proposals and make recommendations.
4. Design Review/Coordination meeting.

Deliverables:

- CM/GC Request for Proposals.
- Recommendation of CM/GC contractor.

- Design Review/Coordination meeting notes.

TASK 400 FINAL DESIGN

Based on decisions made during the preliminary design meeting, the project will move into the final design phase. Preliminary design drawings will be revised based on comments received from the City's review. Final design will also include additional details, technical specifications, and calculations.

Electrical and controls design will be sub-contracted to Heath Engineering, Inc. A full electrical design with diagrams and controls will be prepared and include coordination with City's SCADA service provider SKM.

Structural engineering will be provided by Conder Engineering using information collected during the geotechnical investigations and current City building code.

Activities:

1. Development of 60% design drawing including transmission pipeline plan and profile drawings; pump station site plan and configuration; storage tank site plan and configuration.
2. Electrical and Controls design as part of the 90% design development including coordination with SKM. Electrical design will include the following items:
 - a. Utility Coordination – we will coordinate with Rocky Mountain Power for the delivery of power to the pump station and storage tank sites.
 - b. Instrumentation Drawings – develop instrument legend, symbols, schedule, installation details and process & instrumentation diagram (P&ID).
 - c. Electrical Drawings – develop electrical legend, single line diagram, site plan, schematics, conduit development, conduit schedule, electrical calculations, lighting schedule and details. Incorporate provisions in the design for SCADA system panel and antenna.
 - d. Division 26 & 40 specifications for electrical and instrumentation.
3. Structural Engineer design as part of the 60% and 90% design development.
4. Development of 90% design drawing including transmission pipeline plan and profile drawings; pump station site plan and configuration; storage tank site plan and configuration; and associated details.
5. Development of Project Manual including bidding documents and technical specifications. To be included in the 90% design submittal.
6. Develop Engineer's Opinion of Probable Construction costs at the 60%, 90% and Final Design stages.
7. Coordination with CM/GC contractor including review of contractor cost proposals.
8. 60%, 90% and Final Design Review/Coordination meetings.

Design drawings are anticipated to include those listed in the table below. Drawings list may be adjusted based on the recommendations provided during the Preliminary Engineering task.

Anticipated Drawing List

Drawing	Description
1	Cover Sheet with Site Locator
2	Legend & Drawing Index
3	General Notes
4	Project Notes
5	Client General Notes
6	Sheet Location and Survey Control
7	Test Hole Data
8-15	Plan and Profile 24" Pipeline
16-32	Plan and Profile 16" Pipeline
33	Pump Station Site Plan
34	Pump Station Piping
35	Pump Station Structural
36	Pump Station Misc. Details
37	Tank Site Plan
38	Tank Drainage Plan
39	Tank Grading Plan
40	Tank Access Road
41	Tank Inlet & Outlet Piping
42	Tank Drain Outlet & Details
43	Tank Overflow Piping & Details
44	Valve Vault Plan
45	Valve Vault Sections
46	Valve Vault Deck & Details
47	Tank Misc. Details
48-57	Tank Structural
58	Electrical General Notes
59	Electrical Pump Station
60-61	Electrical Tank
62-63	I&C Pump Station
64-65	I&C Tank

Deliverables:

- 60% Design Drawings.
- 90% Design Drawings and Project Manual.
- Final Design Drawings and Project Manual.
- Construction Cost Estimate (Engineer's OPCC) at 60%, 90% and Final Design submittals.
- Electronic files in their native format including AutoCAD files, documents, spreadsheets, etc.
- Meeting notes.

TASK 500 ENGINEERING SERVICES DURING CONSTRUCTION

HAL will assist the City during construction of the project. HAL understands that the City will conduct weekly coordination meetings with the contractor and HAL will attend those meetings when directed by the City. Construction duration is anticipated to be 12 months.

Activities:

1. Review contractor submittals and RFIs.
2. Attend construction meetings when directed by the City and prepare meeting notes. The scope of service and associated fee assumes 25 construction meetings to be held at the City offices.
3. Review and respond to Contractor questions and issue work change directives when appropriate. Scope of services and associated fee assumes four work change directives.
4. Review change order requests from the Contractor and recommend appropriate action to the City. The scope of services and associated fee assumes four change orders.
5. Conduct periodic site visits on an as needed bases to support City provided inspection. The scope of services and associated fee assumes 10 site visits to support work change directives and RFIs. Site visits to be conducted in conjunction with the weekly construction meetings when possible.
6. Conduct final site walk through in conjunction with City personnel and develop punch list.
7. Prepare project closeout documents (substantial completion documentation).
8. Develop record drawings based on contractor redlines and construction observation.

Deliverables:

- Construction meeting notes when HAL is in attendance.
- Review of Contractor submittals and RFIs.
- Review Contactor Pay Requests.
- Work change directives and change orders.
- Punch list.
- Substantial completion documentation.
- Record Drawings.

PROPOSED PROJECT SCHEDULE

HAL proposes to complete the design of the storage tank or pond and pipeline from the storage site by mid-October 2021 with construction starting immediately thereafter so that the storage system can be in operation by mid-April 2022. HAL proposes to complete the design of the pump station and remaining pipeline by the end of December 2021 with construction being completed in October 2022.

The schedule assumes that the City will complete design reviews within 1 weeks of receiving each design submittal. The project schedule may need to be adjusted due to time required for City review or other unforeseen issues. We anticipate that construction duration will be 12 months. Please refer to the attached proposed project schedule for more detailed information.

ASSUMPTIONS

Hansen, Allen & Luce's, Inc. Engineering Scope of Services and Engineering Fees have been developed and estimated based on the following assumptions.

1. The scope and fee assumes that a cast in place reinforced concrete structure will be the preferred alternative.
2. The scope and fee assumes that a separate drinking water pump station will be constructed at some time in the future.
3. Design will be in accordance with current City approved building codes.
4. The proposed scope of work and associated fee assumes 8 utility test holes.
5. Permitting coordination with the UPPR and other agencies is not included in the scope and fee.
6. The proposed pump station and storage sites are zoned to allow these types of facilities and conditional use permits or other approvals are not needed.
7. All proposed project improvements are located within City property or Public Rights-of-Way. Property appraisals, negotiations, legal descriptions, easements, etc. are not included in the scope and fee.
8. Corrosion protection (cathodic protection) is not included in the scope and fee.
9. Scope of services and associated fee assumes two addendums.
10. The scope of service and associated fee assumes 25 construction meetings to be held at the City offices.
11. Scope of services and associated fee assumes four work change directives.
12. The scope of services and associated fee assumes four change orders.
13. The scope of services and associated fee assumes 10 site visits to support work change directives and RFIs. Site visits to be coordinated with weekly construction meetings when possible.
14. The proposed scope of work and associated fee assumes utility test holes will be conducted by the City.
15. Materials testing during construction is not included in the proposed scope of work and associated fee.
16. City to provide inspection services during construction. HAL with our structural engineer will provide special inspections for structures.
17. All submittals will be electronic (PDF format).
18. All meetings will be virtual.
19. Public Engagement is not included in the scope and fee.

CLIENT: **Santaquin**

PROJECT: **Zone 11 West Pressurized Irrigation System - SDC**

Pha	Task #	Task Activity	Hours							Total Hours	Total HAL Cost	Outside Expense	COMMENT	
			Sr. Man Prof MEA	Manging Prof. MMC	Sr Prof III GST	Sr Prof II TGA	Prof I GGE	PEI SWM	GPS Survey BDD					CAD
VI TASK 600 ENGINEERING SERVICES DURING CONSTRUCTION														
601		Respond to RFIs and Submittals			22.0	22.0	44.0	13.2			101.2	\$15,132.99	\$12,980.00	Conder Structural Engineering, Heath Engineering (Electrical and Controls)
602		Construction Meetings			44.0	44.0	66.0				154	\$26,457.29		25 Construction Meetings
603		Contractor Pay Requests			22.0	4.4	44.0				70.4	\$10,502.78		
604		Work Directive Change	2.2	2.2	4.4	4.4				13.2	26.4	\$3,811.27		
605		Change Orders	2.2	2.2	8.8	8.8				22.0	44	\$6,286.43		
606		Part Time Construction Observation			11.0	11.0	66.0				88	\$13,344.59	\$3,740.00	10 Site Visits + Conder Structural Engineering
607		Final Walk Through			4.4	4.4	13.2	4.4			26.4	\$3,803.28		
608		Project Close Out Documents			4.4	2.2	13.2	8.8			28.6	\$3,936.17		
609		Record Drawings		1.1	4.4	2.2	13.2	22.0		66.0	108.9	\$12,435.82		
699		Quality Control (QC) / Quality Assurance (QA)	6.6								6.6	\$1,407.48		
SUBTOTAL HOURS/UNITS:			11	5.5	125.4	103.4	259.6	48.4	0	101.2	654.5			
SUBTOTAL:			\$2,168.10	\$961.62	\$21,162.50	\$16,598.80	\$30,451.08	\$5,131.85	\$0.00	\$9,232.48		\$97,118.11	\$16,720.00	Outside / Subconsultant Costs
TOTAL HOURS BY EMPLOYEE:			11	5.5	125.4	103.4	259.6	48.4	0	101.2				



PHASE	TASK	Labor	Direct Exp	Subtotal	Subconsultant	SubTotal
		Costs	Cost		Costs	
VI	TASK 600 ENGINEERING SERVICES DURING CONST	\$89,991.76	\$7,126.35	\$97,118.11	\$16,720.00	\$113,838.11
	TOTAL:	\$89,991.76	\$7,126.35	\$97,118.11	\$16,720.00	\$113,838.11

