

SERVICES AUTHORIZATION #I ENGINEERING SERVICES AGREEMENT

THIS SERVICES AUTHORIZATION is made and entered into this _____ day of _____, 20____, by and between the **City of Orlando, Florida**, a municipal corporation existing under the laws of the State of Florida (CITY), and **AECOM Technical Services, Inc.**, doing business locally at 150 N. Orange Avenue, Suite 200, Orlando, Florida 32801 (ENGINEER).

WHEREAS, the CITY and the ENGINEER have previously entered into an agreement for the ENGINEER's professional services (Agreement) on November 26, 2012, concerning the Iron Bridge Regional Water Reclamation Facility Effluent Discharge Alternatives Evaluation Project (Project); and

WHEREAS, the Agreement was approved and authorized by the City Council and signed by the Mayor Pro Tem and City Clerk, as Documentary #121105I05; and

WHEREAS, the CITY and the ENGINEER wish to amend the Agreement as set forth herein; and

WHEREAS, the CITY and the ENGINEER now wish to memorialize their understanding for the ENGINEER's additional professional services for the Project.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and given one to the other, the sufficiency of which is hereby acknowledged, the parties agree as follows:

I. SCOPE OF SERVICES

The scope of services has been agreed to by the parties, and is attached hereto and incorporated herein, by reference, as EXHIBIT I.

II. FEE

The not to exceed fee of \$689,544 has been agreed to by the parties, and is attached hereto and incorporated herein, by reference, as EXHIBIT II.

III. TERM

ENGINEER shall complete all work in accordance with the timeframes set forth in EXHIBIT I and EXHIBIT II, if any, provided however, that all work and the term of the Services Authorization shall be completed by the end of business (5:00 p.m.) on February 28, 2016. It is also agreed that the CITY shall have an option for extension of this Services Authorization as necessary to complete the present scope of Services (Exhibit I) or to provide additional services.

IV. ENTIRE AGREEMENT

This Services Authorization supersedes all previous services authorizations, amendments, agreements, or representations, either verbal or written, heretofore in effect between the CITY and the ENGINEER that may have concerned the matters covered herein, except that this Services Authorization shall in no way supersede or amend the Agreement or other services authorizations or amendments except as specifically provided herein. No additions, alterations, or variations to the terms of this Services Authorization shall be valid, nor can the provisions of this Services Authorization be waived by either party, unless such additions, alterations, or waivers are expressly set forth in writing in a document duly executed by both parties. ENGINEER acknowledges and agrees that any proposals or proposed agreements from subconsultants attached to this SERVICES AUTHORIZATION are attached solely to reflect the scopes of work to be performed and the fees to be charged by such subconsultants. By executing this SERVICES AUTHORIZATION, the CITY does not become a party thereto or bound by the terms thereof.

IN WITNESS WHEREOF, the parties hereto have executed this Services Authorization on the day and year first written above.

City of Orlando, Florida

By: _____
Mayor Pro Tem

ATTEST:

Alana C. Brenner, City Clerk

(SEAL)

APPROVE AS TO FORM AND LEGALITY
for the use and reliance of the
City of Orlando, Florida, only.

_____, 20____.

Assistant City Attorney
Orlando, Florida

AECOM Technical Services, Inc.

By: _____

(Print Name)

Title: _____

STATE OF FLORIDA }

COUNTY OF _____ }

PERSONALLY APPEARED before me, the undersigned authority, _____, [] well known to me or [] who has produced _____ as identification, and known by me to be the _____ of the corporation named above, and acknowledged before me that he/she executed the foregoing instrument on behalf of said corporation as its true act and deed, and that he/she was duly authorized to do so.

WITNESS my hand and official seal this ____ day of _____, 20____.

NOTARY PUBLIC

Print Name: _____

My Commission Expires: _____

EXHIBIT I – SCOPE OF SERVICES

For

PROFESSIONAL ENGINEERING SERVICES

Iron Bridge RWRf Effluent Management Project

Amendment 1

I. General

The following presents the tasks which will be performed as part of Amendment 1 to the Iron Bridge RWRf Effluent Management Project. The Tasks presented below are based on the results of previous investigations and include both additional analysis and final design efforts.

CONSULTANT will perform the following services for the CITY for the Iron Bridge Regional Water Reclamation Facility (RWRf) Effluent Management Project (Project):

II. Consultant's Scope of Services

Task Group 1.0 Project Management

CONSULTANT will continue to manage the project and communicate status and other key issues with the CITY. Project management tasks include the following:

1. Prepare Status Reports: Monthly status reports will be prepared to advise the CITY on the progress of the Project. These status reports will be provided as part of the invoicing for this project. Monthly progress meetings will include the following information:
 - a. Forecast of next month's work
 - b. Outstanding action items for either the CITY or CONSULTANT as applicable
2. Manage Project Activities: The progress of the Project will be monitored and resources will be managed to achieve the schedule and budget goals of the Project. Communications with the CITY will be conducted under this task.
3. CFD/Modeling Workshop: CONSULTANT will prepare and participate in a workshop with CITY staff. This will include:
 - a. Summary of previous investigations into current and future process loadings at the Iron Bridge and Conserv II WRFs.
 - b. A summary of the status of the modeling efforts conducted to date on the Iron Bridge and Conserv II WRFs.

- c. A detailed description of proposed stress testing and BioWin final calibration efforts for both facilities.
- d. A detailed description of the CFD modeling process and anticipated benefits to re-rating processes at the Iron Bridge and Conserv II WRFs.
- e. Summary of potential benefits of BioWin and CFD modeling to the CITY. A conceptual level cost opinion will be developed for additional treatment capacity for both facilities.
- f. The CONSULTANT will develop and submit the slides and meeting minutes of the CFD/Modeling Workshop to the CITY.

Task Group 2.0 Final Design of Iron Bridge Improvements

The scope of work will include the final design efforts described below. For the purposes of budgeting this work it is assumed that all elements of the final design will be combined into a single set of contract documents.

Wetlands Pump Station

CONSULTANT will develop contract documents for the final design of a wetlands pumping station as described in the preliminary design report. The pumping station will be constructed within the existing wetlands pump station structure and reuse that structure to the extent possible. Major improvements will include:

1. Structural modifications as required to accommodate the new pumps and ancillary equipment
2. New electrical building
3. New vertical turbine pumps capable of pumping flow from 2.0 mgd up to 50 mgd. The final determination of the upper capacity will be established in a preliminary design report currently underway. Pumps will be equipped with VFDs to allow flow/level based pumping rates.
4. New electrical gear as required to serve the new pumps
5. New flow meter and connection to the existing wetlands transmission main
6. Associated instrumentation and controls
7. Related yard piping and civil work

Basin Cover Preliminary and Final Design

Open basins, particularly downstream of the biological processes, result in algae growth which requires additional maintenance and can adversely impact water quality. Covering the basins reduces and in some cases eliminates sunlight entering the basins which dramatically reduces unwanted biological activity

and the associated maintenance. The CITY used this approach in the recent Bardenpho Improvements project by covering the launderers on the secondary clarifiers. This task will continue these upgrades for additional downstream processes.

Data Collection

The CITY has requested CONSULTANT perform an evaluation and final design for providing structural covers for the clear well at the deep bed filter structure, south chlorine contact chamber structure, and the post aeration basin structure at its Iron Bridge WRF. Methods of providing basin covers will include prefabricated and custom aluminum covers as well as the potential use of a building over the large post aeration basins. CONSULTANT will obtain as-built drawings and applicable shop drawings (if required and available) for the structures in question. As part of the data collection effort, CONSULTANT will conduct a field investigation to observe existing conditions and will meet maintenance and operations staff to determine the specific design features desired by them.

Conceptual Design Alternatives

Based on the data collection, CONSULTANT will prepare and submit a conceptual design report illustrating available options for structural covers. This document shall include:

1. A brief description of the proposed cover option for each structure, including material type, loading criteria, durability issues;
2. Conceptual level plans of each option presented;
3. Existing structure strengthening requirements, if required;
4. Similar installation pictures of each option, if available;
5. Probable cost of construction for each option presented.

Final Design

CONSULTANT will develop contract documents for the installation of covers for the clear well at the deep bed filter structure, south chlorine contact chamber structure, and the post aeration basin structure.

Modification of the ERRWDS/Wetlands Transmission Interconnection

It is anticipated that the new wetlands pumping station will be used to manage excess reclaimed water supplies under most conditions and a majority of the time. The improvements to the ERRWDS/wetlands transmission pipeline interconnection are intended to 1) provide additional wetlands transfer transmission capacities under extreme high flow conditions; and 2) provide redundant pumping capacity in the event the wetlands pumping station is unavailable. The control valve assembly will allow for the control of downstream pressure to prevent damage to the existing transmission pipe and include metering to not less than an accuracy of 2% as required by FDEP for discharge monitor reporting. This design effort will include:

1. Installation of a flow meter and pressure sustaining valve operations for local operations. This may also require upsizing the interconnection piping and vaults.
2. Installation of a vault to house the meter
3. MOT associated with construction of the facilities

The design is based on local, manual opening/closing of the valve, setting and adjusting of the pressure to be sustained and reading of the flow meter. The design of the ERRWDS interconnect does not anticipate modifications to the existing high service reuse pumping system.

South Chlorine Contact Basin Upgrades

The south chlorine contact basin will be modified to include a wall to prevent the water level from being drawn down in periods of low flow as a result of pumping reclaimed water to the 4 mg ground storage tank and wetlands. This will include hydraulic calculations to determine the wall design requirements. The CITY has also indicated that the drainage system for the contact basin has failed. CONSULTANT will design a new drainage system for the south chlorine contact basin. Due to the congested nature of this area of the plant it is assumed that the new drainage system will include construction of sumps and pump(s) to avoid the excavation required for a gravity system.

Filter Drains and Above Ground Piping

The CITY reports that the gravity system to manage over flows from the deep bed gravity filters is under sized and that the plant drainage system is surcharged when the system is used. In addition a return line from the post aeration basins to the deep bed filters is currently installed above ground and can be an impediment to access of structures and equipment in this area. CONSULTANT will develop plans and specifications for the upsizing of the overflow gravity system and for the installation of the return line below ground.

The scope of work has been developed based on the plan sheets listed in **Table 1**. Further it has been assumed that all final design elements will be incorporated into a single plan set to be bid as a single project. QA/QC reviews will be held prior to the submittal of the 60%, 90%, and 100% deliverables.

Task 2.0 Deliverables

CONSULTANT will provide the CITY the following deliverables:

1. Seven (7) copies of the draft Basin Cover report for CLIENT's review.
2. Seven (7) copies of the final Basin Cover report for CLIENT's review.
3. Ten (10) copies of the 60% design documents (plans and specifications).
4. Ten (10) copies of the 90% design documents (plans and specifications).
5. Ten (10) copies of the 100% design documents (plans and specifications).
6. One (1) hardcopy and one (1) electronic copy of the Opinion of Probable Construction Cost based on the 60% and 100% design documents.
7. Two (2) copies of the bid ready design documents (plans and specifications).
8. One (1) copy of the bid ready design documents on a single disk containing WORD format, PDF format, and CADD format files.

9. One (1) copy of conformed contract documents.

NOTE: All submittals that include plan sets will be full size (22" x 34") unless directed by the CITY otherwise.

Task 2.0 Meetings

CONSULTANT will schedule and attend a meeting with the CLIENT to discuss the draft Basin Cover report and jointly come to an agreement to select applicable cover option for each structure. CONSULTANT will not proceed with final design efforts until a cover option is selected by the CLIENT and written authorization given to CONSULTANT to proceed.

CONSULTANT will prepare for and attend one meeting at the project site for the purpose of obtaining additional input from CITY staff and to verify site conditions prior to initiating final design efforts. CONSULTANT will prepare for and attend review meetings at the 60% and 90% stage of completion.

Task Group 3.0 – Permitting Services

Task Group 5 includes preparation of applications for the permits required for the wetlands pumping station and other improvements to the Iron Bridge WRF and reclaimed water transmission system. It is anticipated that the following permits will be required:

1. FDEP Permit: CONSULTANT will prepare the FDEP general permit application for the proposed improvements and provide a draft to the CITY for review. Upon receipt of review comments, CONSULTANT will finalize the permit application and submit it to the CITY to obtain the necessary signatures. The CITY will pay the FDEP permit application fee.
2. Respond to Requests For Additional Information (RAIs): This task includes the coordination, review and response to RAIs from the FDEP. For the purposes of budgeting it was assumed that there would be two (2) RAIs.
3. City of Orlando Building Permit: CONSULTANT will prepare and submit signed and sealed drawing and specification permit sets to the City Building Department at least two (2) weeks prior to bid. The number of copies will be according to submittal requirements. CONSULTANT will not be responsible for paying the permit fee. CONTRACTOR shall be responsible for pulling the permit.
4. Respond to Requests for Additional Information (RAIs): This task includes the coordination, review and response to RAIs from the City Building Department. For the purposes of budgeting it was assumed that there would be two (2) RAIs.
5. FDOT Permitting: CONSULTANT will prepare an FDOT ROW Utilization Permit Application for the ERRWDS interconnection. The final MOT plan will be included with the ROW utilization permit application. CONSULTANT will review the draft application with CITY. Upon CITY approval, CONSULTANT will submit the application to FDOT.

Task Group 4.0 – Bid Phase Services

Task Group 4 includes bid phase services for the proposed improvements to the Iron Bridge WRF. Bid phase services tasks will include:

1. Assist CITY in advertising for and obtaining bids or negotiating proposals for the project.
2. Prepare for and attend a pre-bid conference.
3. Assist with the preparation of Addenda to clarify, correct, or change the Bidding Documents.
4. Assist CITY in review of received bids. This will include contacting contractor references. The results of these evaluations will be submitted to the city in a letter report for their consideration.
5. Assist in the preparation of conformed contract documents.

The results of these evaluations will be submitted to the CITY in a Recommendation for Award letter, signed and sealed by the EOR. Bid phase services will be considered complete upon the issuance, by the CITY of the Notice of Award to the selected contractor and submittal by the EOR of one bound and one unbound set of the Conformed Drawings and Specifications. CITY will prepare, place, and pay for all advertisements for bidding of the project.

Task Group 5.0 – Ongoing Coordination of Pipeline Investigations and ARV Replacement Contract

CONSULTANT will continue to assist the CITY as requested in the ongoing efforts to evaluate the condition of this asset. This is anticipated to include participating in investigations associated with a recent failure of the 48" wetlands force main. CONSULTANT will coordinate with Pure Technologies and CUES regarding non-destructive assessment of the wetlands force main related to the recent failure. CONSULTANT will coordinate with specialty companies engaged in the non-destructive evaluation and assessment of physical pipeline conditions with respect to the Wetlands transmission main. This may include meetings with the vendors and obtaining budget estimates for the evaluation/assessment. CONSULTANT will develop technical specifications and drawings for the Wetlands Transmission Main ARV Improvements Project, and assist the City in the bidding and construction administration phases of the Wetlands Transmission Main ARV Improvements Project which is anticipated to be done by a City 'Rapid Response' contractor.

Task Group 6.0 – Assistance with Regional/Regulatory Issues

CONSULTANT shall provide assistance to the CITY with regional and regulatory issues on an as needed basis. This may include communications with EPA and FDEP to clarify elements of the existing draft TMDL, meetings with FDEP in their Orlando office to discuss regulatory issues associated with the Iron Bridge RWRf or other regulatory related efforts as directed by CITY. The labor and additional funding for Other Direct Costs or work by subconsultants will be used as directed by the CITY. The

total funding available for this budget will vary depending on the staff/subconsultant level of effort required to address the CITY's request for regional and regulatory assistance. Note this task was originally included in Service Authorization 1 but funding was redirected to increased efforts associated with assessment of the wetlands transmission pipe as a result of a line break.

In addition to the regulatory/regional assistance described above, and at the request of the CITY the CONSULTANT has added budget to consider the TMDL implication of various effluent management scenarios and review new large developments which have been proposed within the Iron Bridge/Conserv II service area. This is included as developments of this size as likely to accelerate increases in wastewater flows beyond those anticipated in the recent projects. This potential acceleration is important given the recent analysis of the Iron Bridge facility indicating loading rates to the Iron Bridge clarifiers and filters will exceed permit levels within the next 2 to 3 years.

Task Group 7.0 Subconsultant Services

CONSULTANT shall use the following subconsultant services as part of this project. Details on the work they will perform are provided in the SUBCONSULTANT PROPOSALS section.

- | | |
|----------------------------|--|
| 1. Hazen and Sawyer | - Process Workshop |
| 2. Buchheit Associates Inc | - Survey |
| 3. Milan Engineering | - Mechanical/HVAC |
| 4. EDA | - Electrical/Instrumentation |
| 5. Team | - TMDL Considerations |
| 6. EPIC | - Selected final design, and cost estimating |
| 7. CPW | - Constructability reviews |
| 8. Devo Engineering | - Geotechnical Investigations |

III. Compensation

CONSULTANT shall be paid in accordance with Section 5 of the Agreement. A labor budget showing the estimated number of hours and associated fee for the tasks described within the Scope of Services and subconsultant fees is presented as Exhibit II. Exhibit II includes an estimated budget for other project costs in accordance with CITY policy.

These budget estimates were used to determine the proposed not-to-exceed fee estimate of \$689,544. This includes an Owner Controlled Contingency budget of \$62,686.

IV. City's Responsibilities

The CITY shall be responsible for providing the following in a timely manner so CONSULTANT can complete its work and not delay the performance of services.

1. Provide all pertinent pre-determined criteria and information as to CITY's requirements for the Project, including design objectives, constraints, capacity and performance requirements, flexibility, and expandability, and furnish copies of all design and construction standards which CITY will require to be used on/included in the Project and are not available through the CITY's website. CONSULTANT will review the materials/information provided/available and request additional information, as necessary to clarify the CITY's project requirements. It will be the CONSULTANT's responsibility to request and track any specific information/requirements its feels essential to the design of the facilities. The CONSULTANT will immediately notify the CITY, in writing, of any requested and not provided information/data/requirements that is/may delay the CONSULTANT's work progress. Provide all field surveys that are currently available, including a vertical bench mark within the limits of the project site, required for design of the facilities as determined by the CONSULTANT.
2. Promptly review, comment on, and return CONSULTANT's submittals.
3. Execute, process, and obtain all required permits and approvals.
4. Pay all permit and approval fees.
5. Promptly advise CONSULTANT when the CITY becomes aware of any defect, deficiency or changed condition.

V. Deliverables (CONSULTANT)

Project deliverables are defined under the task items in which they will be developed.

VI. Services Not Included

Services to be provided under the scope of work are limited to those described above. Construction services for the final design efforts described above are anticipated to be part of future Authorizations.

VII. Period of Service

The Period of Service is anticipated to be 20 months after the Notice to Proceed.

Table 1 Preliminary List of Specifications & Drawings

Preliminary List of Specifications

DIVISION 1 – GENERAL REQUIREMENTS

01000	Index of Drawings
01010	Summary of Work
01014	Construction Sequence
01020	Existing Utility Locations
01021	Soils Reports and Other Information
01045	Cutting and Patching
01070	Abbreviations and Symbols
01100	Pollution and Noise Control
01150	Measurement and Payment
01200	Project Meetings
01370	Schedule of Values
01380	Preconstruction Audio-Video Documentation
01400	Temporary Facilities
01420	Drawings and Submittals
01568	Temporary Erosion and Sedimentation Control
01570	Maintenance of Traffic
01580	Project Identification Sign
01600	Materials and Equipment
01650	Start-up/Check-out
01710	Project Housekeeping/Cleaning
01720	Project Record Documents
01730	Operating and Maintenance Data
01740	Warranties and Bonds

DIVISION 2 – SITEWORK

02050	Equipment, Piping and Materials Demolition
02200	Earthwork
02222	Protecting Existing Underground Utilities
02223	Trenching, Backfilling and Compacting
02282	Connections to Existing Buried Pipeline

DIVISION 3 - CONCRETE

03210	Concrete Reinforcement
03300	Cast-in-Place Concrete
03400	Precast Concrete
03500	General Concrete

DIVISION 5 - METALS

05500	Miscellaneous Metal
05520	Railing
05530	Grating

DIVISION 9 – FINISHES

09900	Painting and Coating
09961	Fusion Bonded Epoxy Lining and Coatings

DIVISION 10 – SPECIALTIES

10200	Aluminum Louvers
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DIVISION 11 – EQUIPMENT

11214 Vertical Turbine Pumps

DIVISION 13 – SPECIAL CONSTRUCTION

13100 Precast Concrete Building
13300 Process Instrumentation and Controls
13310 Programmable Logic Controller and Digital Equipment
13315 Field Instrumentation
13420 Magnetic Flow Meters
13440 Propeller Flow Meter

DIVISION 15 – MECHANICAL

15050 Piping Schedule & General Piping Requirements
15050A Basic Mechanical Materials and Methods
15064 Pipe Hangars and Supports
15075 Equipment, Piping, Duct and Valve Identification
15100 Manual, Check and Process Valves
15108 Air Release Valves
15122 Flexible Pipe Couplings and Expansion Joints
15144 Pressure Testing of Piping
15240 Ductile-Iron Pipe
15293 PVC Distribution Pipe (14 inches and larger)
15297 HDPE Pipe
15900 Basic HVAC Material and Methods
15901 Testing, Adjusting and Balancing
15902 Diffuser, Registers and Grilles
15903 HVAC Hangers and Supports
15904 HVAC Identification
15905 HVAC Insulation
15906 Condensate Waste Piping
15907 HVAC Metal Ducts
15908 Duct Accessories
15909 FRP Ductwork
15920 Centrifugal Fans
15921 Split System Air Conditioning Units
15990 Testing, Adjusting and Balancing

DIVISION 16 - ELECTRICAL

16010 Electrical General Provisions
16015 Electrical Systems Analysis
16040 Electrical Identification
16050 Basic Electrical Materials and Methods
16108 Miscellaneous Equipment
16110 Raceway, Boxes and Fittings
16120 Wires and Cables – 600Volts and less
16150 Motors
16160 Panelboards
16190 Supporting Devices
16292 Low Voltage Power Meters
16371 Three phase Pad Mounted Liquid Filled Distribution Transformers
16371 Variable Frequency Drives
16325 480Volt Switchgear

16450	Grounding System
16490	Solid State Reduced Voltage Starters
16500	Lighting System
16670	Lightning Protection System
16709	Protectors and Surge Protection Devices
16903	Removal of Existing Equipment
16950	Electrical Testing

Appendix City of Orlando Wastewater Standards

Preliminary Index of Drawings

G-1	Cover Sheet
G-2	General Notes, Legend and Abbreviations
G-3	Location Map
C-1	Wetlands Pump Station - Existing Site Plan
C-2	Wetlands Pump Station - Site and Layout Plan
C-3	Wetlands Pump Station - Yard Piping Plan
C-4	ERRWDS Interconnection - Plan and Profile
C-5	South Chlorine Contact Basin - Existing and Future Yard Piping
C-6	Filter Drains and Above Ground Piping - Existing/Demolition
C-7	Filter Drains and Above Ground Piping - New Piping
C-8	Civil Details
C-9	Civil Details
C-10	Civil Details
S-1	Structural General Notes and Details
S-2	Wetlands Pump Station - Pump Support Platform Plans and Sections
S-3	Wetlands Pump Station - Pump Support Platform Sections and Details
S-4	Wetlands Pump Station - Electrical Building Plans and Elevations
S-5	Basin Covers - Clear Well
S-6	Basin Covers - South Chlorine Contact Basin & Wall
S-7	Basin Covers - South Chlorine Contact Basin Sumps
S-8	Basin Covers - Post Aeration Basin
S-9	ERRWDS - Vault Plan and Profile
S-10	Structural Details
S-11	Structural Details
M-1	Wetlands Pump Station - Mechanical Plans
M-2	Wetlands Pump Station - Mechanical Sections
M-3	ERRWDS Interconnection
M-4	South Basin Sump Pumps
M-3	Mechanical Details
M-4	Mechanical Details
H-1	HVAC General Information
H-2	HVAC Plan
H-3	HVAC Schedules and Notes
H-4	HVAC Details
P-1	Plumbing General Information
P-2	Plumbing Plan
P-3	Plumbing Isometrics, Details, and Schedules
E-1	Electrical Symbols, Notes and Abbreviations
E-2	Electrical Site Plan

E-3	Existing Single Line Diagram
E-4	Proposed Single Line Diagram
E-5	Partial Site Plan – Demolition
E-6	Partial Site Plan – Proposed
E-7	Power Floor Plan - Demolition
E-8	Power Floor Plan - Demolition
E-9	Lighting Floor Plan
E-10	Lightning Protection Plan
E-11	Panel Schedules/Lighting Schedules
E-12	Electrical Details
I-1	Instrumentation Symbols, Notes and Abbreviations
I-2	Process and Instrumentation Diagram
I-3	Instrumentation Details

Exhibit II - Project Budget Summary
For
Iron Bridge RWRf
Iron Bridge RWRf Effluent Management Project

Company	Fee
AECOM (Labor Fee)	\$ 403,872
Subconsultant Fees	
Hazen and Sawyer	\$ 13,529
Buchheit	\$ 44,811
Milan	\$ 10,830
EDA	\$ 74,932
TEAM	\$ 4,080
CPW	\$ 25,500
EPIC	\$ 5,760
Devo	\$ 4,915
 Subconsultant Markup (10%)	 \$ 18,436
Other Direct Project Costs (AECOM)	\$ 20,194
Owner Controlled Contingency	\$ 62,686
 Total Not to Exceed Project Fee	 \$ 689,544

Exhibit II - AECOM Project Budget Details

City of Orlando Iron Bridge RWRF Effluent Management Project

City of Orlando

Task Description	Personnel Hours						Budget						
	Principal	Senior Engineer II	Senior Engineer I	Assistant Engineer I	CAD II	Clerical	Total Hours	Labor	Subconsultants	Subconsultant Markup	ODC	Total Non-Labor	Total
Task Group 1.0 Project Management													
Project Management	50	4	16	4	-	24	98	\$ 18,296			\$ 915	\$ 915	\$ 19,211
Subtotal	50	4	16	4	-	24	98	\$ 18,296			\$ 915	\$ 915	\$ 19,211
Task Group 2.0 Final Design of Iron Bridge Improvements													
Wetlands Pump Station	70	150	320	220	430	80	1,310	\$ 169,380			\$ 8,409	\$ 8,409	\$ 177,789
Basin Covers/South Chlorine Contact Upgrades/Yard Piping	50	100	140	120	80	20	510	\$ 69,300			\$ 3,465	\$ 3,465	\$ 72,765
ERRYDS/Wetlands Interconnection	10	25	30	20	10	10	105	\$ 14,260			\$ 713	\$ 713	\$ 14,973
Subtotal	130	315	490	360	520	110	1,935	\$ 252,940			\$ 12,647	\$ 12,647	\$ 265,587
Task Group 3.0 Permitting Services													
Permitting Activities	14	20	40	60	50	30	234	\$ 27,956			\$ 1,399	\$ 1,399	\$ 29,355
Subtotal	14	20	40	60	50	30	234	\$ 27,956			\$ 1,399	\$ 1,399	\$ 29,355
Task Group 4.0 Bidding Phase Services													
Bidding Phase Services	10	20	20	40	40	20	150	\$ 18,660			\$ 933	\$ 933	\$ 19,593
Subtotal	10	20	20	40	40	20	150	\$ 18,660			\$ 933	\$ 933	\$ 19,593
Task Group 5.0 Ongoing Coordination of Pipeline Investigations													
Pipeline Investigations	40	180	-	-	60	40	320	\$ 48,400			\$ 2,420	\$ 2,420	\$ 50,820
Subtotal	40	180	-	-	60	40	320	\$ 48,400			\$ 2,420	\$ 2,420	\$ 50,820
Task Group 6 Assistance with Regional/Regulatory Issues													
Assistance with Regional/Regulatory Issues	30	60	90	60	20	10	270	\$ 37,590			\$ 1,880	\$ 1,880	\$ 39,470
Subtotal	30	60	90	60	20	10	270	\$ 37,590			\$ 1,880	\$ 1,880	\$ 39,470
Task Group 7.0 Subconsultant Services													
Hazen and Sawyer									\$ 13,529	\$ 1,353		\$ 14,882	\$ 14,882
Burchett Associates Inc									\$ 44,311	\$ 4,431		\$ 48,742	\$ 48,742
Milan Engineering									\$ 10,830	\$ 1,083		\$ 11,913	\$ 11,913
EDA									\$ 74,932	\$ 7,493		\$ 82,425	\$ 82,425
Team									\$ 4,080	\$ 408		\$ 4,488	\$ 4,488
EPIC									\$ 23,560	\$ 2,356		\$ 25,916	\$ 25,916
CPW									\$ 5,766	\$ 576		\$ 6,342	\$ 6,342
Devo									\$ 4,913	\$ 492		\$ 5,405	\$ 5,405
Subtotal									\$ 184,357	\$ 18,436		\$ 202,793	\$ 202,793
Task Group 8.0 Contingency													
Owner Controlled Contingency (10% of Tasks 1 through 6)													
Subtotal													
Total Not To Exceed Fee	274	599	655	524	699	254	2,997	\$ 403,672	\$ 18,436	\$ 18,436	\$ 20,194	\$ 222,906	\$ 685,134

AECOM Labor Rate Summary

Personnel Category	\$/HR ⁽¹⁾
Principal	\$264.00
Senior Engineer II	\$150.00
Senior Engineer I	\$130.00
Assistant Engineer I	\$94.00
CAD II	\$124.00
Clerical	\$85.00

(1) Labor costs are based on a raw labor multiplier of 3.0.

Subconsultant Proposals

EXHIBIT "A-1"

SUBCONSULTANT'S PROPOSAL FOR ENGINEERING SERVICES

**AMENDMENT NO. 1 TO
TASK ORDER NO. 1**

**Between
AECOM Technical Services, Inc.
and
Hazen and Sawyer, P.C.
for
City of Orlando – Iron Bridge RWRf Effluent Management Project**

The evaluation of the Iron Bridge RWRf conducted under the initial authorization (Task Order No. 1) identified a number of treatment processes that are expected to exceed typical loading rates within the next five (5) to eight (8) years. These increased loading rates are largely due to the planned shutdown of the Water Conserv I WRF and the transfer of flows to the Iron Bridge RWRf. In addition, the Water Conserv II WRF is currently rated for 21 mgd and the City of Orlando (CITY) would like to rerate the facility to 25 mgd in the near future. In addition, the CITY would like to evaluate the effectiveness of the recent upgrades to the clarifier mechanisms and energy dissipating inlets in the near future. AECOM Technical Services, Inc. (CONSULTANT) desires assistance from Hazen and Sawyer (SUBCONSULTANT) to prepare for and participate in a workshop to the City to summarize previous modeling efforts completed for both facilities, summarize the findings of the Iron Bridge Process Considerations Report, describe the potential benefits of full model calibration and stress testing for both facilities, and describe Computational Fluid Dynamics (CFD) modeling of the clarifiers and anticipated benefits of modeling to both facilities. Stress testing, BioWin modeling and CFD modeling (of clarifiers) have the potential to support the higher than typical loadings for the biological treatment (Water Conserv II), clarifiers (both facilities) and filtration facilities (Iron Bridge). To illustrate the benefit, conceptual level cost opinions for additional treatment capacity for both facilities will be developed.

SCOPE OF SERVICES

SUBCONSULTANT will furnish professional services to CONSULTANT in accordance with this Scope of Services.

Task 1 – CFD/Modeling Workshop: SUBCONSULTANT will prepare and participate in a workshop with CITY staff. This will include:

1. Summary of previous investigations into current and projected influent flow and loadings at the Iron Bridge and Conserv II WRFs.

2. A summary of the status of the BioWin modeling efforts conducted to date on the Iron Bridge and Conserv II WRFs.
3. A detailed description of proposed stress testing and BioWin final calibration efforts for both facilities.
4. A detailed description of the CFD modeling process.
5. Summary of potential benefits of BioWin and CFD modeling to the CITY.
6. A conceptual level cost opinion will be developed for additional treatment capacity for both facilities (clarifiers and filters – Iron Bridge, process tankage and clarifiers (Conserv II).
7. The SUBCONSULTANT will develop and submit the slides and meeting minutes of the CFD/Modeling Workshop to the CITY.

DELIVERABLES

Task 1:

1. Workshop slides in pdf format for distribution to the CITY.
2. Meeting minutes from the workshop for distribution to the CITY.

COMPENSATION

SUBCONSULTANT proposes to undertake this work on a time and materials basis with an upper limit of \$13,529 as shown in the following **Fee Breakdown**. The upper limit will not be exceeded without written approval of CONSULTANT. Monthly invoices will be issued for work completed in the previous month.

SCHEDULE

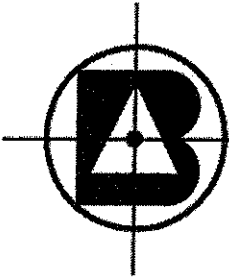
The schedule for these services will be based on the schedule developed by CONSULTANT for this project.

Fee Breakdown

A-4

Fee Breakdown
City of Orlando - Iron Bridge/Conserv II Workshop

		Vice President	Senior Associate Engineer	Associate Engineer	Senior Principal Engineer	Assistant Engineer	Drafter/Graphic	Admin's Support	Task Hours	Estimated Task Cost
Task 1 - Iron Bridge Sampling and BioWin Model Calibration										
1	Summary of previous investigations into current and projected influent flow and loadings at the Iron Bridge and Conserv II WRFs.	\$235	\$199	\$198	\$124	\$102	\$122	\$73	24	\$2,977.77
2	A summary of the status of the BioWin modeling efforts conducted to date on the Iron Bridge and Conserv II WRFs.			8	8	16			8	\$1,241
3	A detailed description of proposed stress testing and BioWin final calibration efforts for both facilities.		2	8	8				10	\$1,738
4	A detailed description of the CVD modeling process.								8	\$1,341
5	Summary of potential benefits of BioWin and CFD modeling to retaining existing processes at both facilities.			8	8				8	\$1,341
6	Conceptual level test option will be developed for additional treatment capacity for both facilities.			8	8	16			24	\$2,977.77
7	Prepare slides and meeting minutes of the CFD/Modeling Workshop to the CITY.		2	6		4			12	\$1,612.47
	Total Hours									
	Estimated Total Cost	\$0	\$795	\$9,050	\$0	\$3,683	\$0	\$0	94	\$13,529
	Estimated Total ODC									
	Total Items 1-7 Not to Exceed	\$0	\$795	\$9,050	\$0	\$3,683	\$0	\$0		\$13,529



BUCHHEIT ASSOCIATES, INC.
SURVEYORS & MAPPERS

May 8, 2014

David Ammerman
AECOM
150 N. Orange Avenue, Suite 200
Orlando, FL 32801

IRON BRIDGE RWRF EFFLUENT MANAGEMENT PROJECT
Task Group 2-Final Design
SCOPE OF SERVICES-SURVEYING

Dear David,

Buchheit Associates Inc. Surveyors & Mappers (SURVEYOR) is pleased to present a scope of services and fee estimate proposal for the project referenced above. The fee estimate was provided previously and is dated 2/27/2014.

Project Description

The limits of the project are as indicated on drawing provided by email on 1/21/2014.

The areas of interest are outlined for the Survey work are as follows:

1. Wetland Pumping Station on Plant site (Approximately 150' x 400')
2. Basin Covers on Plant site (Approximately 300' x 300')
3. Modification to the ERRWDS interconnect in right of way on McCulloch Rd near Lockwood Blvd. Intersection (Approximately 100' wide in R/W)
4. Chlorine Contact basin upgrades on Plant site (Approximately 220' x 300')

Survey Data

We intend to utilize existing data obtained during a previous phase of the project in order to compile a base map that can be updated with new information. We will verify elements and may need to update horizontal and vertical control to current standards. This effort will require reworking the existing project information that we have in our files to ensure continuity going forward. We will also need to update Cad files to current version of software and rework format.

Once we have identified and verified all of the useful data that we can salvage, we will collect the new data that is needed in the areas of interest and will prepare a new compiled Topographic Survey base drawing with the relevant data needed for design. We will coordinate project issues with Engineering team.

Page 2

We anticipate locating and verifying a limited number of underground utility installations. The fee estimate is based on 30 underground utility locations to be verified horizontally and vertically along with basic utility designating and locating in the areas of interest.

Horizontal and Vertical Control

Horizontal Control shall be relative to the Florida State Plane Coordinate System, East Zone and the North American datum of the 1983/1990 adjustment. Vertical Control shall be relative to the 1988 North American Vertical Datum. The Project Survey Control drawing shall be included with Topographic Survey.

All Survey work will be performed in accordance with the Minimum Technical Standards.

Please do not hesitate to contact me personally with questions or comments.

Sincerely,

**BUCHHEIT ASSOCIATES, INC.
SURVEYORS & MAPPERS**

Kimberly A. Buchheit PSM

Kimberly A. Buchheit, President

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**Buchheit Associates, Inc. Surveyors & Mappers Not to Exceed Fee
City of Orlando Iron Bridge RWRP Effluent Management Project
February 27, 2014**

TASK	Survey Project Manager		Surveyor & Mapper		Survey Crew		Office Technician		Other Expenses	Subtotal Amount
	hours	rate	hours	rate	hours	rate	hours	rate		
1) Prepare Compiled Base Map from Previous Work	8	\$156.00	0	\$110.76	0	\$149.76	16	\$78.00		\$2,496.00
2) Add New Survey Data for Project Specifics										
Project Vertical Control/Site Benchmarks	1	\$156.00	2	\$110.76	6	\$149.76	2	\$78.00		\$1,432.08
Project Horizontal Control	1	\$156.00	2	\$110.76	6	\$149.76	2	\$78.00		\$1,432.08
Plant Site Areas of Interest	5	\$156.00	10	\$110.76	36	\$149.76	25	\$78.00		\$9,228.96
McCulloch Road Area of Interest Topo	2	\$156.00	4	\$110.76	12	\$149.76	8	\$78.00		\$3,176.16
Sub Surface Utility Location as Designated	2	\$156.00	4	\$110.76	24	\$149.76	16	\$78.00	\$ 4,500.00	\$10,097.28
Underground Utility Verification (30 Vv's as directed by AECOM)	2	\$156.00	4	\$110.76	12	\$149.76	8	\$78.00	\$ 12,000.00	\$15,176.16
Prepare New Compiled Base Map	4	\$156.00	8	\$110.76	8	\$149.76	20	\$78.00		\$4,268.16
Not to Exceed Fee										\$44,810.88

Prepare a compiled base map from previous projects.

Coordinate with Engineer and Project Team to identify additional details needed for data collection and new compiled base map.

Note: Old project data may be based on different horizontal and vertical Datum.

Prepared by :

Kimberly A. Buchheit, P.S.M., President 2/27/2014

Kimberly A. Buchheit, P.S.M., President
BUCHHEIT ASSOCIATES, INC. SURVEYORS & MAPPERS
427 Center Pointe Circle, Suite 1811
Altamonte Springs, FL 32701
Phone (407) 331-0505, Fax (407) 331-3266

Project Number: 2130011-0000

Approved By:

David Ammerman
AECOM
150 N. Orange Avenue, Suite 200
Orlando, FL 32801
Phone: 407-513-8213

Professional Services Proposal & Agreement

Client Information:
(hereinafter called "client")

David Ammerman
AECOM
150 N. Orange Avenue, Ste 200
Orlando, FL 32801
T 407.843.6552
david.ammerman@aecom.com

Date:

Jan 13, 2014

Project Name:

Iron Bridge – Wetland Pump Station HVAC Systems Design

Project Description:

Design of building mechanical (HVAC and fuel piping) systems to accommodate changes to the site per the PDR.

Engineering Consultant:
(hereinafter called "MEI")

Milan Engineering, Inc
925 South Semoran Blvd, Suite 100
Winter Park, Florida, 3279

DESCRIPTION OF SCOPE

Milan shall provide client with the following professional services:

Task 4.0 - Design Phase

Task 4.1 – 60% Design Phase.

Drawings will be prepared in AutoCAD Release 2010 using 24x36 as the full page size and with a 22x34 layout for true scale when printing 11x17 for half size. Specifications will be prepared using CSI format, Divisions 2-17, in MS Word.

Task 4.1.1 – Preliminary HVAC System Design

Milan Engineering will perform HVAC systems design including air conditioning for the electrical gear room.

Task 4.1.2 – Preliminary Plumbing Systems Design

Milan engineering will perform Plumbing Systems Design. Milan will do some piping sample if required.

Mechanical
Electrical
Plumbing
Fire Protection
Technology

925 S Semoran Blvd | Suite 100
Winter Park, FL 32792
t: 407.678.2055 f: 407.678.2088

Precise Solutions with Prompt Response

Task 4.1.3 – Preliminary Specifications

Milan Engineering will prepare preliminary specifications associated with the design work including DIV-10 and 15 sections indicated further in this document.

Task 4.1.4 – Preliminary Cost Estimate

Milan will provide a cost estimate in MS Excel.

Task 4.1.5 – 60% QC Review

Milan will perform quality control review for all our work prior to submitting the documents.

Task 4.1.6 – Meetings

Milan Engineering will participate in the following meetings:

- Interim team meetings (2 anticipated)
- Design review meeting (1 anticipated)

Task 4.2 - 90% Design Phase

Task 4.2.1 – 90% HVAC Systems Design

Milan Engineering will develop the HVAC system design drawings to 90% and resolve comments from 60% design review.

Task 4.2.2 – 90% Plumbing Systems Design

Milan Engineering will develop the Plumbing system design drawings to 90% and resolve comments from 60% design review.

Task 4.2.3 – 90% Specifications

Milan Engineering will develop the specifications to 90% and resolve comments from 60% design review.

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Winter Park, FL 32792
t: 407.678.2055 f: 407.678.2088

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Task 4.2.4 – 90% Cost Estimate

Milan will provide a cost estimate for your work in MS Excel.

Task 4.2.5 – 90% QC review

Milan will perform quality control review for all our work prior to submitting the documents.

Task 4.2.6 – Meetings

Milan Engineering will participate in the following meetings:

- Design review meeting (1 anticipated)

Task 4.3 - Final % Design Phase

Task 4.3.1 – Finalize HVAC Plans

Milan Engineering will develop the HVAC system design drawings to 100% and resolve comments from 90% design review.

Task 4.3.2 – Finalize Plumbing Plans

Milan Engineering will develop the Plumbing system design drawings to 100% and resolve comments from 90% design review.

Task 4.3.3 – Finalize Specifications

Milan Engineering will develop the specifications to 100% and resolve comments from 90% design review.

Task 5 Permitting Phase

Milan will assist in obtaining a City of Orlando Building Permit by providing signed and sealed drawings and doing the energy calculations for the project (with input from architect and electrical). Milan will provide (3) sets of signed and sealed drawings for the submittal to the Building Permit.

Task 6 Bidding Assistance

Milan will answer questions regarding our work during the bidding process.

Mechanical
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Plumbing
Fire Protection
Technology

925 S Semoran Blvd | Suite 100
Winter Park, FL 32792
t: 407.678.2055 f. 407.678.2088

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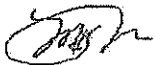
Planned List of Specifications

10200	Aluminum Louvers
15900	Basic HVAC Material and Methods
15901	Testing, Adjusting and Balancing
15902	Diffuser, Registers and Grilles
15903	HVAC Hangers and Supports
15904	HVAC Identification
15905	HVAC Insulation
15906	Condensate Waste Piping
15907	HVAC Metal Ducts
15908	Duct Accessories
15909	FRP Ductwork
15920	Centrifugal Fans
15921	Split-System Air-Conditioning Units
15990	Testing, Adjusting and Balancing

Planned List of Drawings

H-1	HVAC General Information
H-2	HVAC Plan
H-3	HVAC Schedules and Notes
H-4	HVAC Details
P-1	Plumbing General Information
P-2	Plumbing Plan
P-3	Plumbing Isometrics, Details, and Schedules

Milan Representative:



(Signature)

Mitesh K. Smart, President

Mechanical
Electrical
Plumbing
Fire Protection
Technology

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Winter Park, FL 32792
t: 407.678.2055 f: 407.678.2088

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Exhibit II: DESIGN PHASE FEE ESTIMATE

Date: 2/27/2014

Project Name:

City of Orlando, Iron Bridge WPS

Name of Firm: Milan Engineering, Inc

	Senior Engineer		Engineer		Designer		Clerical		Basic Activity \$ Amount	Manhrs by Activity
Labor Rates	\$55.00		\$27.00		\$23.00		\$15.00			
Billing Rates	\$151.25		\$74.25		\$63.25		\$41.25			
TASKS	Man Hrs	Cost	Man Hrs	Cost	Man Hrs	Cost	Man Hrs	Cost		
Task-2 - Design Phase										
Task 2.1 - 60% Design Phase										
Task-2.1.1 - HVAC Design	4	\$605.00	16	\$1,188.00					\$1,793.00	20
Task-2.1.2 - Plumbing Design	4	\$605.00	24	\$1,782.00					\$2,387.00	28
Task-2.1.3 - Specifications			4	\$297.00			4	\$165.00	\$462.00	8
Task-2.1.4 - Cost Estimation	2	\$302.50							\$302.50	2
Task-2.1.5 - QC	2	\$302.50							\$302.50	2
Task-2.1.6 - Meetings	3	\$453.75							\$453.75	3
Task 2.2 90% design phase										
Task-2.2.1 - HVAC Design	4	\$605.00	8	\$594.00					\$1,199.00	12
Task-2.2.2 - Plumbing Design	4	\$605.00	8	\$594.00					\$1,198.00	12
Task-2.2.3 - Specifications			2	\$148.50			4	\$165.00	\$313.50	6
Task-2.2.4 - Meeting	1	\$151.25							\$151.25	1
Task 2.3 - Final Design Phase										
Task-2.3.1 - HVAC Design	2	\$302.50	4	\$297.00					\$599.50	6
Task-2.3.2 - Plumbing Design	2	\$302.50	4	\$297.00					\$598.50	6
Task-2.3.3 - Specifications	2	\$302.50					2	\$82.50	\$385.00	4
Task-2.3.4 - Meeting	1	\$151.25								1
Task-3 - Permitting Phase			4	\$297.00			2	\$82.50	\$379.50	6
Task-4 - Bidding Assistance	2	\$302.50							\$302.50	2
Total	33	\$4,981.25	74	\$5,484.50			12	\$495.00	\$10,829.50	119

TOTAL COST NOT TO EXCEED FEE BREAKDOWN BY TASK

		% Total
Task-2 - Design Phase		
Task 2.1 - 60% Design Phase		
Task-2.1.1 - HVAC Design	\$1,793.00	17%
Task-2.1.2 - Plumbing Design	\$2,387.00	22%
Task-2.1.3 - Specifications	\$462.00	4%
Task-2.1.4 - Cost Estimation	\$302.50	3%
Task-2.1.5 - QC	\$302.50	3%
Task-2.1.6 - Meetings	\$453.75	4%
Task 2.2 90% design phase		
Task-2.2.1 - HVAC Design	\$1,199.00	11%
Task-2.2.2 - Plumbing Design	\$1,198.00	11%
Task-2.2.3 - Specifications	\$313.50	3%
Task-2.2.4 - Meeting	\$151.25	1%
Task 2.3 - Final Design Phase		
Task-2.3.1 - HVAC Design	\$599.50	6%
Task-2.3.2 - Plumbing Design	\$598.50	6%
Task-2.3.3 - Specifications	\$385.00	4%
Task-2.3.4 - Meeting		
Task-3 - Permitting Phase	\$379.50	4%
Task-4 - Bidding Assistance	\$302.50	3%
TOTAL NOT TO EXCEED FEE	\$ 10,829.50	100%



Electrical Design Associates

May 6, 2014

Mr. David Ammerman, P.E.
AECOM
150 N. Orange Avenue, Suite 200
Orlando, FL 32801

Re: **Iron Bridge RWRF Effluent Management Project – Amendment 1**
Orlando, Florida

Dear Mr. Ammerman;

We are pleased to submit our revised proposal for electrical engineering services for the above project. The following serves to provide an overview of the engineering services Electrical Design Associates, Inc. (EDA) intends to furnish on the above referenced project to AECOM Technical Services, Inc., (AECOM). This letter contract represents an overview of the work and provides the fee amounts. Your signature on this agreement will serve as your letter of intent. EDA shall perform the following services for the CITY for the Iron Bridge Regional Water Reclamation Facility (RWRF) Rerating project (Project):

Task Group 1.0 Project Management

1. By Others.

Task Group 2.0 Final Design of Iron Bridge Improvements

1. EDA shall provide electrical and instrumentation design associated with the wetlands pumping station as described in the preliminary design report. The design will be based on the following:

Wetlands Pump Station:

- a. Electrical design associated with the demolition of the electrical gear at the existing wetlands pump station. EDA shall coordinate with the plant staff.
- b. Electrical design associated with a stand-alone electrical building. The building will be sized to accommodate main-tie-main switchgear construction with draw-out type breakers. The gear will support up to four (4) VFD driven 700 HP and two (2) VFD driven 21 HP pumps. The electrical design shall be completed in accordance with the City of Orlando Standards.
- c. Instrumentation design associated with a stand-alone electrical building. The building will be sized to accommodate main-tie-main switchgear construction

8401 LAKE WORTH ROAD
SUITE 221
LAKE WORTH, FL 33467

4763 S. CONWAY ROAD
SUITE E
ORLANDO, FL 32812

3001 N. ROCKY POINT DRIVE E.
SUITE 200
TAMPA, FL 33607

with draw-out type breakers. The gear will support up to four (4) VFD driven 700 HP and two (2) VFD driven 21 HP pumps. The pumps will be controlled based on flow and level. The electrical design shall be completed in accordance with the City of Orlando Standards.

- d. Electrical design associated with the replacement of the pad mounted transformers with new transformers sized to support the additional loads.
- e. EDA to coordinate with IAG and plant staff.
- f. The electrical design shall be completed in accordance with the City of Orlando Standards and the proposed improvements as outlined in the IBWRF 480V Electrical Evaluation Report dated October 2010.

Modification of the ERRWDS/Wetlands Transmission Interconnection

- a. No Electrical or Instrumentation Engineering Services anticipated.

South Chlorine Contact Basin Upgrades

- a. Electrical and Instrumentation design associated with the proposed sump pumps, no more than 20 HP to support the modifications at the south chlorine contact basin specifically the new drainage system.
- b. EDA to coordinate with IAG and plant staff.
- c. The electrical design shall be completed in accordance with the City of Orlando Standards.

Filter Drains and Above Ground Piping

- a. By others.

2. Preliminary Sheet List

- E-1 Symbols, Notes and Abbreviations
- E-2 Partial Site Plan
- E-3 Overall Plant Single Line Diagram
- E-4 Wetlands Pump Station Existing Single Line Diagram
- E-5 Wetlands Pump Station Proposed Single Line Diagram
- E-6 ERRWDS/Wetlands Transmission Interconnection Single Line Diagram
- E-7 South Chlorine Contact Basin Single Line Diagram
- E-8 Elementary Diagrams
- E-9 Wetlands Pump Station Demolition Plan
- E-10 Wetlands Pump Station Plan View
- E-11 Wetlands Pump Station Electrical Building Power Plan
- E-12 Wetlands Pump Station Electrical Building Lighting and Grounding Plan
- E-13 South Chlorine Contact Basin Sump Pump Power Plan
- E-14 Panel Schedules

- E-15 Electrical Details – Sheet 1
- E-16 Electrical Details – Sheet 2
- I-1 Symbols, Notes and Abbreviations
- I-2 Process and Instrumentation Diagram – Sheet 1
- I-3 Process and Instrumentation Diagram – Sheet 2
- I-4 Instrumentation Details – Sheet 1
- I-5 Instrumentation Details – Sheet 2

3. Deliverables:

- a. 60% Design Drawings, specifications and Opinion of Costs
- b. 90% Design Drawings and specifications and Opinion of Costs
- c. 100% Design Drawings, specifications and Opinion of Costs
- d. EDA shall submit one (1) complete set; all additional reproduction shall be completed by others.
- e. EDA shall submit one (1) copy of the bid ready design documents on a single disk containing WORD format, PDF format, and CADD format files.

4. Meetings:

- a. EDA shall attend review meetings at the 60%, 90% and 100% stage of completion.

Task Group 3.0– Permitting Services

- 1. EDA shall provide signed and sealed documents for submittal to the Building Department and incorporate requested changes into the final bid documents such that construction permits may be ready for pickup by the contractor after award of the project.

Task Group 4.0 – Bid Phase Services

- 1. EDA shall attend the Pre-Bid Meeting.
- 2. EDA shall respond to any questions from bidders and prepare and issue addenda as required to interpret, clarify or expand the Bidding Documents.
- 3. EDA shall prepare Conformed Documents resulting from any and all addenda items. EDA shall submit one (1) complete set; all additional reproduction shall be completed by others.

Task Group 5.0 – Ongoing Coordination of Pipeline Investigations

- 1. By Others.

Task Group 6.0 Assistance with Regional/Regulatory Issues

- 1. By Others.

Task Group 7.0 Subconsultant Services

- 1. By Others.

Services not specifically defined are not included. Additional services can be provided under

separate Scope of Service(s) or by an amendment to this Scope of Services. Services performed will be on an as-directed basis in accordance with a written Notice to Proceed. Services will be performed hourly with a not to exceed value. Travel to and from the site and other direct costs are included in the overhead rate and will not be billed as a separate line item. Our cost not to exceed fee for this work shall be as follows:

Task Group 1:	\$ 0.00
Task Group 2:	\$ 70,481.32
Task Group 3:	\$ 2,231.08
Task Group 4:	\$ 2,219.52
Task Group 5:	\$ 0.00
Task Group 6:	\$ 0.00
Task Group 7:	\$ 0.00
Total:	\$ 74,931.92

Very truly yours,



Lillian M. Reyes, P.E.

ACCEPTED _____ DATE _____

Enclosure

AEC-14-001DG.Rev4

Iron Bridge RWRF Effluent Management Project – Amendment 1

Orlando, Florida

Estimate of Work Effort & Fee

Date: 5/5/2014

	Principal		Senior Engineer		Designer		Field Supervisor		Cadd Technician		Clerical/Admin		Totals	
	Hourly Rate	Total	Hourly Rate	Total	Hourly Rate	Total	Hourly Rate	Total	Hourly Rate	Total	Hourly Rate	Total	hours	Total
Task 1.0 Project Management														
By Others														
Task 1 total:	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Task 2.0 - Final Design														
60% Submittal														
Meetings	16	\$ 3,190.56			8	\$ 1,248.48							26	\$ 4,866.20
Design	57	\$ 12,363.42			32	\$ 9,987.84			94	\$ 6,797.28			218	\$ 29,657.19
Specifications/Opinion of Costs	24	\$ 4,795.84			16	\$ 2,466.96							66	\$ 8,300.08
Subtotal:	102	\$ 20,395.62			88	\$ 13,733.28			84	\$ 6,787.28			300	\$ 42,523.45
90% Submittal														
Meetings	5	\$ 1,595.28			4	\$ 624.24							14	\$ 2,348.68
Design	150	\$ 5,982.30			32	\$ 4,993.92			40	\$ 3,236.80			112	\$ 14,948.82
Specifications	17	\$ 2,392.92			4	\$ 624.24							24	\$ 3,255.80
Subtotal:	168	\$ 9,970.50			40	\$ 6,242.40			40	\$ 3,236.80			150	\$ 20,721.30
Final Submittal														
Meetings	4	\$ 797.64											4	\$ 797.64
Design	8	\$ 1,595.28			15	\$ 2,493.96			15	\$ 1,294.72			40	\$ 5,386.86
Specifications/Opinion of Costs	4	\$ 797.64											8	\$ 1,051.96
Subtotal:	16	\$ 3,190.55			18	\$ 2,495.88			15	\$ 1,294.72			52	\$ 7,236.55
Task 2 total:	168	\$ 33,500.88			144	\$ 22,472.64			140	\$ 11,328.80			502	\$ 70,487.32
TASK 3 - Permitting														
Meetings	4	\$ 797.64											4	\$ 797.64
Design	4	\$ 797.64			2	\$ 312.12							10	\$ 1,433.44
Design revisions	8	\$ 1,595.28			2	\$ 312.12			4	\$ 323.68			14	\$ 2,231.03
Task 3 total:	16	\$ 3,190.56			4	\$ 624.24			4	\$ 323.68			18	\$ 2,751.48
TASK 4 - Bidding														
Meetings	2	\$ 398.62											2	\$ 398.62
Addenda Preparation	2	\$ 398.62			4	\$ 924.24							8	\$ 1,194.90
Design revisions	4	\$ 797.64			2	\$ 312.12			4	\$ 323.68			6	\$ 835.60
Task 4 total:	8	\$ 1,595.28			6	\$ 936.36			4	\$ 457.36			16	\$ 2,219.52
Total Estimate of Work Effort & Fee	180	\$ 35,989.90			162	\$ 25,724.92			150	\$ 12,136.00			592	\$ 79,831.92

March 7, 2014

Mr. David Ammerman
AECOM
150 N Orange Ave, Ste 200
Orlando, FL 32801

RE: Professional Stormwater Services
Iron Bridge Effluent Management Project
Proposal No. 2014-05

Dear David:

In response to your recent request, I am providing a scope and fee for performing an additional task in support of AECOM's Iron Bridge WWTF project with the City of Orlando. The following scope of work is provided.

Scope of Work

1. Develop TMDL considerations for various reuse scenarios at the Iron Bridge WWTF that will benefit the City of Orlando by reducing discharges to the Little Econ and reducing nutrient loadings to Lake Harney. Prepare a brief summary of findings for up to three separate scenarios.

Deliverables

A summary report of findings will be prepared and submitted to AECOM.

Fees

Services outlined in this Scope of Work will be performed at an hourly rate of \$85.00 per hour. The anticipated hours for each task outlined above are presented below.

Task 1: Develop TMDL considerations for reuse scenarios	48 hours @ \$85.00 = \$ 4,080.00
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Total Not-to-Exceed	\$ 4,080.00
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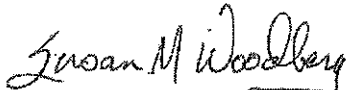
Schedule

The Scope of Work will be completed within 4 weeks of Notice to Proceed from AECOM.

Mr. David Ammerman
March 7, 2014
Page 2

Thank you for the opportunity to submit this scope of work to AECOM. I look forward to working with you on this project. Please call if you have any questions.

Sincerely,



Susan M. Woodbery, PE
TEAM Engineering, LLC
P.O. Box 560833
Orlando, FL 32856
407.491.1624
swoodbery@gmail.com



May 5, 2014

David Ammerman, P.E.
Reuse National Practice Leader
AECOM
150 N. Orange Avenue, Suite 200
Orlando, Florida 32801

**Subject: City of Orlando
Proposal for Professional Engineering Services - Amendment 1
Iron Bridge RWRf Effluent Management Project
ERRWDS/Wetlands Transmission Interconnection and Cost Estimating**

Dear Mr. Ammerman:

In accordance with your request, EPIC Engineering & Consulting Group, LLC (EPIC) has prepared a proposal to assist AECOM with services in Task Group 2.0 (Final Design of Iron Bridge Improvements) for the referenced project. The services involve design of the ERRWDS/Wetlands Transmission Interconnection and developing an opinion of probable construction costs (cost estimating).

It is our understanding that AECOM has evaluated the use of the ERRWDS interconnection as a means to discharge flow to the wetlands. Hydraulic modeling indicates that a flow of approximately 52-54 mgd can be achieved through the interconnect without exceeding the maximum design operating pressure in the wetlands transmission main of 86 psi.

The improvements to the ERRWDS/wetlands transmission pipeline interconnection are intended to 1) provide additional wetlands transfer transmission capacities under extreme high flow conditions; 2) provide redundant pumping capacity in the event the wetlands pumping station is unavailable and 3) facilitate control of the flow. The control valve assembly will allow for the control of downstream pressure to prevent damage to the existing transmission pipe and include metering to not less than an accuracy of 2% as required by FDEP for discharge monitor reporting.

EPIC will be responsible for design of the interconnect system, which will include:

- Flow meter and control valve for operations. This may also require upsizing the interconnection piping and vaults.
- 48" isolation gate valve.
- Vault to house the meter and control valves.

The scope of services, compensation and schedule are presented below.

SCOPE OF SERVICES

The scope of services is divided into the following major tasks:

1. Project Initiation and Coordination
2. Construction Documents
3. Opinion of Probable Construction Cost
4. FDOT Permitting
5. Bidding Assistance

EPIC will be responsible for mechanical/civil design of the improvements. Survey, geotechnical, electrical, and instrumentation and control (I&C) services will be provided by others.

TASK 1 – Project Initiation and Coordination

The following activities are included in this task:

- Prepare for and attend a project kick-off meeting
- Review field conditions and location with City staff
- Utility coordination

TASK 2 –Construction Documents

This task includes the development of project construction drawings and technical specifications for the equipment. The construction documents shall provide the detail necessary to define the project for construction contract competitive bidding and shall comply with current City of Orlando standards.

The construction documents will include a requirement that the contractor coordinate the work with a City specified vendor capable of conducting inspection of the 48" wetland force main. This coordination will include scheduling and facilitating insertion of inspection devices into the wetlands force main.

Survey drawings will be supplied by AECOM and will be prepared in AutoCAD Release 2010. Survey information shall include:

1. Site features and topographic information.
2. Existing utility locations, including elevation of utilities and reclaimed water mains and site features.

It is anticipated that 3-4 drawings will be required to depict the following construction information:

- Existing Site Plan (Based on record drawings and survey information)
- Demolition Plan
- Proposed Plan, Section and Details
- Maintenance of Traffic (MOT) Plan to show designated areas and applicable FDOT Index Sheets.

Internal quality assurance and quality control (QA/QC) reviews will be conducted for each submittal. Documents shall be transmitted to AECOM in electronic format for incorporation into the overall submittal set.

2.1 60% Design Documents

The 60% design shall include drawings at the 60% level of completion and technical specifications related to meter and valve assembly.

2.2 90% Design Documents

The 90% design shall include drawings and specifications at the 90% level of completion level and will address City review comments on the 60% design documents. MOT information will also be included.

2.3 Final Bid Documents

The Final Bid Documents shall include the drawings at the 100% level of completion (ready for bidding), including incorporation of City review comments of the 90% design documents.

2.4 Meetings

Preparation for and participation in the following meetings are included:

- 60% Design review meeting (3 hrs)
- 90% Design review meeting (3 hrs)
- Final Bid Documents review meeting (3 hrs)
- One (1) project coordination/progress meetings (2 hrs)

TASK 3 – Opinion of Probable Construction Cost

Develop an opinion of probable construction cost for the design efforts listed in Task Group 2 (as shown below) based on the 60% and 100% design documents.

- Wetlands Pump Station
- Basin Covers
- Modification of the ERRWDS/Wetlands Transmission Interconnection
- South Chlorine Contact Basin Upgrades
- Filter Drains and Above Ground Piping

Estimates for electrical, instrumentation and controls and structural items and shall be provide by other for incorporation into the overall opinion of probable construction costs. Quotes or vendor information shall be provided by AECOM for specified equipment.

Electronic copies of the opinion of probable construction cost shall be provided to AECOM.

TASK 4 – FDOT Permitting

These services are listed in TASK Group 3 of the AECOM proposal and are related to the ERRWDS/wetlands transmission pipeline interconnection. The final MOT plan will be included with the ROW utilization permit application. Permitting services will include:

- Coordination with FDOT and preparation of an FDOT Utility Permit Application.

May 5, 2014

Page 4

- Contacting utility companies in the area of the proposed construction. Surveyor shall provide a list of utilities in the area and contact information (Sunshine One Tickets).
- Review the draft application with City (one meeting).
- Upon City approval, submit the application to FDOT and respond to requests to additional information.

TASK 5 –Bidding Assistance

These services are listed in TASK Group 4 of the AECOM proposal and are related to the ERRWDS/wetlands transmission pipeline interconnection. This task includes technical input and support related to questions from bidders and preparation of addenda (by AECOM).

PROJECT SCHEDULE

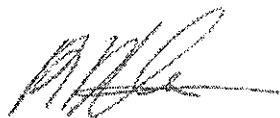
EPIC will provide the above-listed services over the duration of the project to meet the schedule established by City of Orlando and AECOM.

COMPENSATION

EPIC will be compensated for the services described herein on a not to exceed basis in the amount of \$25,499.82. The fee estimate for the scope of services is enclosed as Attachment A.

We sincerely appreciate the opportunity to assist AECOM in providing professional engineering services to the City of Orlando. If you have any questions or require additional information, please call me at 407-721-6954.

Sincerely,



Richard Wilson, P.E.
Project Manager
EPIC Engineering & Consulting Group, LLC

cc: Prasad Chittaluru, Ph.D., P.E., EPIC

ATTACHMENT A

City Of Orlando
Iron Bridge RWRFF Effluent Management Project
ERRWDS/Wetlands Transmission Interconnection Design and Cost Estimating

EPIC NOT TO EXCEED LABOR BUDGET

Task	Task Name	Hourly Rate	Senior Project Manager P8	Sr. Professional P3	Tech III T3	Admin II A2	Total Hours	Total Raw Labor Cost (\$)	Total Billing Labor Cost (\$)
1	Project Initiation and Coordination		8	0	0	1	9	\$511.90	\$1,510.11
2	Construction Documents								
2.1	60% Design Package		23	2	36	2	63	\$2,439.00	\$7,195.05
2.2	90% Design Package		12	2	24	1	39	\$1,443.50	\$4,238.33
2.3	Final Bid Document		8	2	11	1	22	\$873.70	\$2,577.42
2.4	Meetings		11	0	0	1	12	\$695.50	\$2,051.73
3	Opinion of Probable Construction Cost		12	4	0	0	16	\$908.00	\$2,678.60
4	FDOT Permit		14	7	4	2	27	\$1,305.20	\$3,850.34
5	Bidding Assistance		6	0	4	0	10	\$467.20	\$1,378.24
	Total Not to Exceed Fee		94	17	79	8	198	\$8,644.00	\$25,499.82
	Labor Multiplier		2.95						

TOTAL NOT TO EXCEED FEE SUMMARY

Task	Task Name	Total
1	Project Initiation and Coordination	\$1,510.11
2	Construction Documents	\$16,082.53
3	Opinion of Probable Construction Cost	\$2,678.60
4	FDOT Permit	\$3,850.34
5	Bidding Assistance	\$1,378.24
	Total	\$25,499.82



April 1, 2014

David Ammerman, P.E.
AECOM
150 N. Orange Avenue, Suite 200
Orlando, FL 32801

Re: Proposal for City of Orlando
Iron Bridge RWRFF Effluent Management Project

Dear David:

Per your request, please accept this proposal for CPWC, Inc. to provide services for the above referenced project. The Scope of Services and Project Budget is attached.

I look forward to working with you and providing services for The City of Orlando. Please call me at 321.436.0822 or email me at charlyn.watts@earthlink.net at your convenience should you require additional information.

Very truly yours,

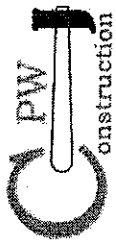
Charlyn P. Watts
President

Enclosures

P.O. Box 121084

Clermont, FL 34712

Phone (321) 436-0822



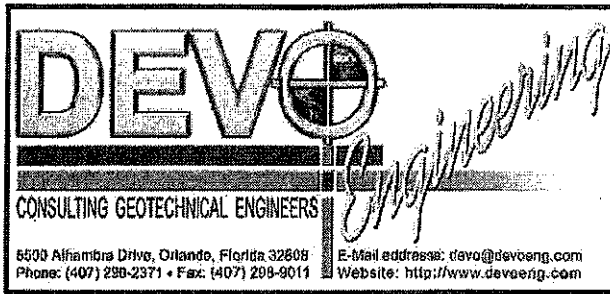
SCOPE OF SERVICES and PROJECT BUDGET

LABOR ESTIMATE

City of Orlando
Iron Bridge RWWF Effluent Management Project

	Task Description	Project Manager	
		\$130.92 / Hr.	\$
Task Group 4	Final Design of Iron Bridge Improvements		
	Upon receipt of 90% design documents for the above project, CPWC will provide a memorandum of comments on a tabulated spreadsheet and perform one 8 hour site visit. In developing costs for this task, it is assumed that CPWC will perform review on 36 sheets of the 90% design documents at 1.0 hour per sheet. The review excludes the electric and instrumentation portions of the design documents; others will perform these reviews.	44	\$5,760.48
TOTAL NOT TO EXCEED SERVICES		44	\$5,760.48

S. J. P. Watson



Date: April 21, 2014	Devo's Project No: Not yet assigned
To: AECOM 150 N. Orange Avenue Suite 200 Orlando, FL 32801 Ph: 407.513.8213 C 407.808.9156 david.ammernan@aecom.com	
attention: DAVID AMMERMAN REUSE NATIONAL PRACTICE LEADER	
Re: Proposal for Foundation Geotechnical Engineering Services for... IRON BRIDGE RECLAIMED WATER FACILITY City Of Orlando, Orange County, Florida	

Dear Mr. Ammerman:

Further to your request, we are pleased to submit this proposal for the geotechnical assessment for the proposed electrical building and vault at the Iron Bridge Reclaimed Water Facility for the City of Orlando.

BACKGROUND INFORMATION

AECOM has a contract to design and construct improvements to the Iron Bridge Reclaimed Water Facility for the City of Orlando and requires a geotechnical evaluation and assessment to support the foundation design for the proposed electrical building and concrete vault.

The Electrical Building shall be located within the boundaries of the Iron Bridge Reclaimed Water Facility, at Iron Bridge Circle, while the vault shall be located approximately 2 miles away along the southern side of McColloch Road just east of Campus View Court.

Following are the key dimensions for the structures:

Building/Structure	Dimensions	Min # of Borings	Min Depth Recommended
Electrical Building (precast concrete with cast-in-place mat foundation)	19 x 38 ft	1	15 ft
Concrete Vault	6 x 12 x 5 ft	1	10 ft below bottom of Vault

Objectives

The objectives of the investigation are to explore the shallow soil and ground water table conditions at the proposed locations for the electrical building and vault and provide recommendations for the following:

1. Site clearing and grubbing requirements.
2. Recommend maximum allowable soil bearing pressures for foundations.
3. Vault walls: equivalent fluid pressure, passive, active and at rest pressure on walls.
4. High Groundwater elevation at new Vault.
5. Provide the following soil properties:
 - a. Angle of Internal Friction
 - b. Unit weight of soil in saturated surface dry condition
 - c. Unit weight of soil in submerged condition

Provide the following soil properties
6. Structural backfill specifications and compaction using excavated or imported material. Structural fill is material placed against existing structures where foundations for adjacent structures or pipe will be placed.
7. Excavation (for new Vault):
 - a. Statement of expected stable cut slopes for structure excavation or data for contractor's design of shoring (braced or unbraced).
 - b. Recommendations for underpinning and/or protection of existing structures and utilities adjacent to excavations, if applicable.
 - c. Recommended excavation slopes shall not be steeper than slopes permitted by local, state or national safety orders.
 - d. Recommended lateral pressure for shoring design shall not be less than the minimum lateral pressures permitted by local, state or national safety orders for various soil types.
8. Foundation Sub-base:
 - a. Dewatering needs.
 - b. Removal of loose or undesirable soils, if required.
 - c. Exposed sub-grade preparation and replacement if required.

Scope of Field And Laboratory Testing

Based on the objectives, the following scope of work is recommended:

- ☐ Stake out of borings and coordinate utility clearance.
- ☐ Mobilization of small track drill rig to one location and then move to the other location 2± miles away.
- ☐ Drilling of one (1) 20-ft deep Standard Penetration Test (SPT) boring within the footprint of the proposed electrical building.
- ☐ Drilling of one (1) 20-ft deep Standard Penetration Test (SPT) boring within the footprint of the proposed vault.
- ☐ Installation of piezometer and measurements to the ground water table.
- ☐ Performance of a relative elevation survey.
- ☐ Visual and tactile examination of soil samples.
- ☐ Two (2) fines fraction and natural moisture content tests.
- ☐ Two (2) soil corrosivity tests.

Note that it our understanding that the proposed locations to be drilled are clear of underground utilities. Our proposed scope of work does not included utility locates. That work is best preformed by a specialist contractor.

Deliverables

The deliverables for this assessment will consist of four (4) signed and sealed copies of the report as well as a PDF version, containing a boring location plan, soil profiles and geotechnical recommendations.

DATA/SUPPORT REQUIRED FROM AECOM

- ☐ Topographical map, with benchmark, if available.
- ☐ Assistance in obtaining easy, unencumbered access to the sites.
- ☐ AECOM's assistance in obtaining/granting utility clearance, where needed.

Schedule

We estimate that we can complete the works within four (4) weeks from the date of authorization to proceed.

FEE ESTIMATE

Our proposed "Not To Exceed Fee" for our services is itemized in Table 1.

TABLE 1. ITEMIZATION OF WORK & ASSOCIATED COST (NOT TO EXCEED FEE)				
DESCRIPTION OF WORK ITEM	UNIT	UNIT COST	QUANTITY	TOTAL
GEOTECHNICAL FIELD SERVICES				
Senior Engineering Technician for site recon., stake out boreholes and coordinate utility clearance.	hr	\$65.00	6.0	\$390.00
Mobilization of drill rig to 1 st drilling site	each	\$500.00	1.0	\$500.00
Mobilization of drill rig from 1 st site to 2 nd site	each	\$250.00	1.0	\$250.00
Standard Penetration Test Borings (0 to 50 ft)	ft	\$14.00	40.0	\$560.00
Senior Engineering Technician for to supervise drilling, perform relative elevation survey and record water table readings	hr	\$65.00	8.0	\$520.00
Materials for piezometers and casing	sum	\$150.00	1.0	\$150.00
Senior Geotechnical Engineer for coordination	hr	\$100.00	2.0	\$200.00
GEOTECHNICAL FIELD SERVICES				
Senior Engineering Technician for visual and tactile examination of soil samples	hr	\$65.00	1.0	\$65.00
Fines fraction tests	each	\$50.00	2.0	\$100.00
Soil corrosivity tests	each	\$150.00	2.0	\$300.00
DATA INTERPRETATION, ANALYSES & REPORT PREPARATION				
Senior Engineer	hr	\$115.00	4.0	\$460.00
Senior Geotechnical Engineer	hr	\$100.00	8.0	\$800.00
Senior-level CADD/GIS	hr	\$65.00	8.0	\$520.00
REPORT REPRODUCTION				
Clerical/Technical Secretary	hr	\$40.00	1.0	\$40.00
Administrative Manager	hr	\$60.00	1.0	\$60.00
TOTAL FOR ALL TASKS				\$4,915.00

We trust that this proposal is sufficiently comprehensive in scope to provide the required data and geotechnical recommendations for design on the proposed structures. Please contact us if there are any questions regarding this proposal. We look forward to working with AECOM on this project.

Claudia Callahan
 Claudia Callahan, B.Sc
 Senior Administrative Assistant