

# CONSULTANT WORK ORDER

<b>Date:</b>	<b>11/06/2024</b>
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## 1. PROJECT INFORMATION:

<b>Project Title:</b>	<b>NE WRF Chlorine Contact Chamber Solar Energy Project</b>	
<b>City Project Number:</b>	<b><u>24-0039-UT</u></b>	
<b>City Plan Set Number:</b>	<b><u>NA</u></b>	
<b>Consultant Project Number:</b>	<b><u>00992-0255</u></b>	

## 2. SCOPE OF SERVICES:

The City of Clearwater has tasked McKim & Creed to provide engineering and construction services to compare the costs and benefits of installing a solar photovoltaic (PV) system on top of the Chlorine Contact Chamber’s (CCC) at the Northeast Water Reclamation Facility (NEWRF) with the installation of standard contact chamber covering. The project aims to provide cover from the sun to mitigate algae growth, reduce the amount of sodium hypochlorite usage, while potentially generating clean energy, demonstrating the municipality's commitment to sustainability. The solar power generated will be used to offset the plant’s energy consumption.



This PV system will be connected downstream of the portion of the plant's primary metering from Duke Energy. The power generated will be downstream of this meter and the Duke Energy's transformers served.

In furtherance of the Council's Strategic Plan to achieve a high-performing government and environmental stewardship, Public Utilities aims to maintain public infrastructure through systematic management efforts.

### **Design and Construction Deliverable Schedule**

A complete design and construction documents submittal will be performed using the standard Design-Bid-Build submittals stages of 30,60,90,100% and Issue for Bid (IFB) submitted deliverables. Design documents will be presented to the City of Clearwater Staff for review and comment at each submittal stage with signed and sealed documents for permitting and IFB.

The design plans shall be compiled using the City of Clearwater CAD standards as outlined Attachment 'B' of this document.

## **I. PRE-DESIGN PHASE:**

### **Task 1.0 PROJECT MANAGEMENT**

As part of the design service McKim & Creed shall provide project management service for discipline design and coordination with City Staff. These include:

- Project setup, meeting minutes and invoicing. Review Record Drawings and obtain operational data.
- Attend Virtual kick off and monthly progress meetings, perform site visits as needed.
- Provide health and safety plan and submit to the City Project Manager prior to EOR mobilizing to site. EOR will schedule meetings, send invites, prepare agendas, meeting notes, etc. for all meetings.
- Coordinate with City on project and construction schedule.
- Coordination with City staff and EOR for Waste Gas Co-Generation design.
- Assist City to submit written solar interconnection application to be submitted by City to Duke Energy for net metering. The City will provide a copy of the approved interconnection agreement to the EOR.

#### Deliverables

- Kick-off Meeting Summary
- Progress Meeting Summaries

**Task 1.1:** A 30% Basis of Design Report (BODR) will be produced outlining the feasibility of installing a solar array on top of the CCC's. It will describe the potential for power to be produced and the offset to the current power usage along with the return on investment (ROI) based on current and future costs. This will be compared to providing standard contact tank covers for the same area from the standpoint of overall life cycle cost.

As part of the BODR, for the solar portion, there will be a description of the electrical equipment and structural mounting components along with any challenges and the means to mitigate them. All of the items in the BODR will be discussed with City staff while producing the draft and then final document.

The BODR will use existing Duke Energy information provided by the City and the Feasibility Study previously performed by McKim & Creed in October 2022. Segments of the study will be used for design and power calculations that will be adjusted for the current design configuration and output.

A discussion with City staff and engineering of the current ongoing project of Co-Generation using waste gas will be needed to assess any potential conflicts and adjustments that may be needed.

The final report will include:

- Preliminary Structural review of the as-built drawings.
- Recommendation of solar PV system size and options, including vendor, technology, equipment, and mounting systems.
- An estimate of annual energy production and potential cost savings.
  - City to provide 24 months of existing billing information.
- Preliminary Site and One-line drawings.
- Develop a preliminary project budget and schedule.
- Propose energy monitoring system and discussions of City reporting requirements.
- AACE Class 5 (-50% to +100%) Estimation of Probable Costs (EOPCC)

Once the draft report is completed and sent to City for review, a scheduled review meeting will be planned with City staff to go over the design and comments.

#### Deliverable

- 30% BODR

## II. DESIGN PHASE:

### **Task 2.1: Design**

McKim & Creed shall provide 60%, 90%, 100%, set of drawings and technical specifications at each submittal including the following:

- Review meeting updates with City staff of the 60%, 90%, and 100% submittals.
- Recommended construction-sequencing plan to keep critical equipment operational.
- Plans and specifications to adhere to NEC, NFPA 70 E and Florida Building Code. (FBC)

Electrical Drawings to include but not be limited to:

- Electrical Specifications & Notes
- Electrical Site Plan
- Array Layouts
- One-Line Diagrams for DC and AC power systems with wiring materials and sizes indicated
- Schematic Power Wiring Diagram
- Grounding diagram indicating wire sizes and material.
- Wire, conduit, and equipment schedules for AC and DC power systems
- Schematic Controls Wiring Diagrams including communication wiring between inverter and monitoring system.
- Stringing Plan (typical)
- Wire management details for racking and modules
- Electrical Details
- Major electrical equipment dimensioned and drawn to scale in the space allocated, including inverters and conduit runs. Illustrated in both plan and elevation views with indicated required clearances.
- Labels and Markings
- Equipment Specifications
- EEOPC ACE Class 3 (-20% to +30%) estimate.

Calculations:

- Voltage drop calculations to meet industry standards
- Cable sizing calculations
- Conduit sizing calculations

Structural Drawings to include but not be limited to:

- Structural design drawings of solar array mounting and support system over CCC concrete troughs, including columns, beams and all mounting.
- Structural details of mounting plates, joints and ancillary supports.
- Provide design for mounting of solar equipment such as inverters, disconnects, controls, conduit, and other electrical components. This may be on the ground or in other areas of an existing building structure.
- Structural calculations meeting the current FBC for wind loading.

### III. FINAL DESIGN PHASE:

#### Task 3.1: Permitting

McKim & Creed shall prepare the permit applications and corresponding supporting documentation and obtain applicable signatures utilizing the 100% Design Plans provided in Task 2.1.

In-person meetings with permitting agencies are not anticipated nor included in this scope of work. Correspondence with all permitting

agencies will be done via email or phone call. Phone call discussions will be documented for future reference in an email.

It is anticipated that permits will be required from the following agencies:

- City of Clearwater Building Department which includes structural and electrical permits.

The permit applications will typically consist of the following information and activities:

- Submit drawings (signed and sealed by Florida Registered Professional Engineer).
- Provide required supplemental information to support permit request.
- Complete permit applications for each agency to be signed and sealed by the design engineer.
- Prepare tracking sheet with indication of dates of submittal of each application and approval or comments from the corresponding agency.
- McKim & Creed will respond to two (2) Request for Additional Information (RAI) for each permitting agency and incorporate revisions requested by the permitting agencies and re-submit information.
- Permit application fees (including permit costs in the project fees) will be paid by the consultant and invoiced to the City as a reimbursable.

#### **Task 3.2 Issue for Bid Document Phase (IFB)**

Upon receipt of 100% comments McKim & Creed will provide Signed and Sealed Issue for Bid Contract documents for advertisement to prospective Bidders. McKim & Creed will provide electronic file of signed and sealed drawings and specification to be distributed.

- EEOPC AACE Class 2 ( -15% to +20%) estimate.

## **IV. BIDDING PHASE:**

### **Task 4.1: Bidding**

- Assist and attend the City in a Pre-Bid meeting. The City shall prepare an agenda.
- Provide Contractor design question responses and aid the City in the preparation of addenda. City will issue all addenda.
- Review bids received by the City and provide recommendation of award.

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## V. CONSTRUCTION PHASE:

### Task 5.1: Construction Services

- **CONFORMED DOCUMENTS**

Prior to Pre-Construction meeting, McKim & Creed will provide Contractor with final construction documents that will include any adjustments to the IFB drawings and specifications.

- **PRE-CONSTRUCTION MEETING**

The SUBCONSULTANT project manager and one construction administrator will attend the preconstruction meeting conducted by the City and CONTRACTOR. Construction procedures and lines of communication will be established. SUBCONSULTANT is not responsible for the preparation of meeting agendas or minutes.

- **SHOP DRAWINGS REVIEW**

McKim & Creed will establish and maintain an internal system for the review of shop drawing submittals by the CONTRACTOR for conformance to the design concept of the project and for compliance with the Contract Documents. The submittal review system will be structured and managed to provide timely response to the Contractor's submittals.

Shop drawing review efforts are based on the following assumptions:

- Each shop drawing review will require three (3) hours average review time.
- There are an estimated 35 total shop drawing submittals encompassing all disciplines.
- No more than one third of the total number of first shop drawings will require a second submittal and that average review will be no more than two (2) hours.

- **REQUEST FOR INFORMATION**

McKim & Creed will address and respond to a maximum of twenty (20) requests for information (RFI). RFI's from the CONTRACTOR will be received and logged by McKim & Creed.

McKim & Creed will prepare the response to the RFI within five business days. Should McKim & Creed require additional time to prepare a response, McKim & Creed will provide CONTRACTOR a summary of the issues, actions required to develop a response, and time estimate for response submittal.

McKim & Creed shall keep a log showing the receipt and response of each RFI.

- **CHANGE ORDER REVIEW**

McKim & Creed will review Change Orders prepared by CONTRACTOR for conformance to RFI response items. A maximum of five (5) Change Orders are included in this scope.

- **SITE VISITS**

McKim & Creed will participate in up to twenty (20) site visits/observations with the Contractor, Subcontractors, and City representatives, when requested.

McKim & Creed will review and comment on the meeting minutes prepared and distributed by others, when requested by McKim & Creed.

- **SUBSTANTIAL AND FINAL COMPLETION**

McKim & Creed will attend an inspection at the substantial completion stages and in development of a punch list. It is assumed that there will be separate inspections for the major phases of construction, identified as follows:

- Phase 1: Completion of Steel Structure, Solar Array Installation, and connection, prior to preliminary start up.
- Phase 2: Final completion of all elements including operation of solar array showing functionality and electrical power output.

Final inspection will be after the substantial completion punch list items have been addressed by the Contractor and the City has notified MCKIM & CREED that the project is ready for final inspection. It is assumed that there will be one final inspection.

- **PROJECT START-UP**

McKim & Creed will observe the start-up, testing and coordination of electrical systems, instrumentation, controls, and communication systems associated with the project improvements. It is anticipated that the project start-up process will take approximately 1 week to complete.

The contractor will guide the City's relevant department(s) (Public Utilities and General Services) to go through the interconnection process with utility provider to ensure that the solar energy system is properly connected behind the meter, and able to receive renewable energy credits from utility provider after project hand-off.

- **OPERATIONS & MAINTENANCE MANUAL REVIEW**

The contractor will prepare Operation & Maintenance (O&M) Manuals per manufacturer's specifications. McKim & Creed will review O&M documents related to structural, electrical and instrumentation activities.

- **RECORD DRAWINGS**



McKim & Creed will review CONTRACTOR'S as-built drawings. Upon completion of the project, McKim & Creed will utilize the as-built drawings developed by the CONTRACTOR to produce a final set of Record Drawings. The accuracy of the drawings will be limited to the information collected and provided by CONTRACTOR.

- **STANDARD OPERATING PROCEDURES**

It is assumed that CONTRACTOR will develop a standard operating procedures (SOP) manual focused on operating and maintaining the new solar power system.

McKim & Creed will review SOP documents relative to completeness ease of use. The CONTRACTOR will be responsible for all training of City staff.

### 3. PROJECT GOALS:

Deliverables for the project will include:

- Draft and Final BODR in electronic PDF format.
- Electronic 60%, 90%, 100%, drawing sets for City review.
- Three (3) bound Sets of Permit Documents for Building Department.
- Full sized 24"x36" Final Signed and Sealed IFB Construction Documents for Advertise and Bidding. Conform set not included but will be part of the Construction Phase Services.
- Project Catalog for Design to be submitted electronically.

### 4. FEES:

This price includes all labor and expenses anticipated to be incurred by McKim & Creed, Inc. for the completion of these tasks in accordance with Professional Services Method "A" – Hourly Rate Completion by Task for a fee not to exceed Two hundred twenty-one thousand four hundred seven Dollars (\$221,407.00).

### 5. SCHEDULE:

The project design duration is slated for **9** months (or days) from issuance of notice-to-proceed. Schedule does not include City or Permit review time (Typically 2 weeks). The project deliverables are to be phased as follows:

<b>Pre Design Phase:</b>	<b>120</b> calendar days
<b>60% Construction Plans and Permit Applications:</b>	<b>180</b> calendar days
<b>90% Construction Plans:</b>	<b>210</b> calendar days
<b>100% Construction Plans:</b>	<b>240</b> calendar days



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<b>Final Construction Documents:</b>	<b>270 calendar days</b>
<b>Bidding Phase</b>	<b>330 calendar days</b>
<b>Construction phase</b>	<b>600 calendar days</b>

## 6. STAFF ASSIGNMENT:

### McKim & Creed

*Aubrey Haudricourt –Project Manager - McKim & Creed*

*Sol Haroon – Solar Technical Expert - McKim & Creed*

*John Reese – Senior Electrical Engineer - McKim & Creed*

*Greg Holbrook – Senior Structural Engineer – McKim & Creed*

### City of Clearwater

*Richard G. Gardner, P.E. – Public Utilities Director*

*Michael Flanigan – Public Utilities Assistant Director*

*Kaylynn Price – Utilities Engineering Manager*

*Christina Goodrich - Wastewater Env't'l Tech (WET) Manager*

*Travis Teuber - Public Utilities (WET) Assistant Manager*

*Jerry Hahn - NE WRF Chief Plant Operator*

*Daniel Trueblood - Public Utilities Infrastructure Maintenance Manager*

*Wayne LaFleur - Public Utilities Infrastructure Maintenance Asst Manager*

*Cassie Cordova – Sustainability Division Manager*

*Melody Yin – Sustainability Specialist*

*Rama Pandkar - Project Manager*

## 7. CORRESPONDENCE/REPORTING PROCEDURES:

Consultant's project correspondence shall be directed to Aubrey Haudricourt, PE.

All City project correspondence shall be directed to the City Project Manager Rama Pandkar, with copies to the Utilities Engineering Manager, Public Utilities Director and Public Utilities Assistant Director.

Engineer shall provide a minimum of forty-eight (48) hours' notice to conducting fieldwork/site visits. Engineer shall provide a minimum of three (3) days notification for site visits requiring the assistance of City personnel.

Engineer acknowledges that all City directives shall be provided by the City Project Manager.

A health and safety plan must be submitted to the City Project Manager prior to conducting any fieldwork/site visits.

In addition to the original copies delivered as stated in the scope of work, all project deliverables will be submitted in electronic format on CD or other City approved device prior to approval of final invoice.

Consultant will also be required to assist the City in filing for Elective Pay process by providing relevant documentations throughout the project as requested. Such documents may include solar-specific invoice, substantial completion document for solar system containing start construction date and completion date, interconnection agreement/electrical permit to operate etc.

## 8. INVOICING/FUNDING PROCEDURES:

**City Invoicing Code: 3277327-530100-M1906**

For work performed, invoices shall be submitted monthly to:

**CITY OF CLEARWATER, PUBLIC UTILITIES DEPARTMENT**

**ATTENTION: PU Engineering**

**1650 NO ARCTURAS AVE BLDG-C**

**CLEARWATER, FLORIDA 33765-1945**

**Email: PUEngineering@MyClearwater.com**

Contingency services will be billed as incurred only after written authorization provided by the City to proceed with those services.

## 9. INVOICING PROCEDURES:

At a minimum, in addition to the invoice amount(s) the following information shall be provided on all invoices submitted on the Work Order:

1. Purchase Order, Project and Invoice Numbers and Contract Amount.
2. The time period (begin and end date) is covered by the invoice.
3. A short narrative summary of activities completed in the time period.
4. Contract billing method – Lump Sum or Hourly Rate.
5. If Lump Sum, the percent completion, amount due, previous amount earned and total earned to date for all tasks (direct costs, if any, shall be included in lump sum amount).
6. If Hourly Rate, hours, hourly rates, names of individuals being billed, amount due, previous amount earned, the percent completion, total earned to date for each task and other direct costs (receipts will be required for any single item with a cost of \$50 or greater or cumulative monthly expenses greater than \$100).

7. If the Work Order is funded by multiple funding codes, an itemization of tasks and invoice amounts by funding code.

## 10. CONSIDERATIONS:

Consultant acknowledges the following:

1. The Consultant named above is required to comply with Section 119.0701, Florida Statutes, where applicable.
2. All City directives shall be provided by the City Project Manager.
3. "Alternate equals" shall not be approved until City Project Manager agrees.
4. All submittals must be accompanied by evidence each has been internally checked for QA/QC before providing to City.
5. Consultants/Contractors are not permitted to use City-owned equipment (i.e. sampling equipment, etc.).
6. Documents posted on City website must ADA accessible.

## 11. ADDITIONAL CONSIDERATIONS:

All work orders should include considerations for the following:

1. Sea Level Rise and Flood Resilience, as applicable.
2. Submittal of a Critical Path Method (CPM) Schedule(s).
3. Submittal of a Project Catalog with the following items, as appropriate:
  - a. Data requests, assumptions, critical correspondence, meeting agenda, sign-in sheets, meeting minutes, document comment-response log(s), technical memorandum/reports, addenda, progress reports, regulatory correspondence, and other project-related documents.
  - b. If construction project, also include design plans, conformed plans, change orders, field orders, RFIs, work change directives, addenda, progress reports, shop drawing and progress submittals, as-builts, record drawings, and other project-related documents such as O&M manuals and warranty information.
  - c. At the conclusion of the project, ENGINEER will combine this information into a Project Catalog and submit to the City for review and comment.
4. Arc Flash labeling requirements:
  - a. All electrical designs and construction shall adhere to NFPA 70 E "Standard for Electrical Safety in the Workplace".
  - b. Updated calculations of Fault and Arc Flash, and provisions for new or updated Arc Flash equipment labeling shall be included in the contract documents. **(Performed during Construction as part of Construction Services)**

## 12. SPECIAL CONSIDERATIONS:

Items not included in Survey:

- Boundary survey, including tree surveys.
- Survey of off-site utilities, bridges, or roadways.
- Special easements / maps for common areas.
- Special easements / maps for utility purposes.
- Right of way / easement negotiations / acquisition.
- Construction staking.

## 13. SIGNATURES:

**PREPARED BY:**

**APPROVED BY:**



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**Aubrey Haudricourt**  
Project Manager  
McKim & Creed

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**11-06-2024**

Date

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**Richard Gardner, P.E.**  
Public Utilities Director  
City of Clearwater

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Date

## ATTACHMENT "A"

CONSULTANT WORK ORDER – PROJECT FEES TABLE

NE WRF Chlorine Contact Chamber Solar Energy Project

McKim & Creed Inc.

24-0039-UT

City of Clearwater

# CONSULTANT WORK ORDER PROJECT FEES TABLE

Task	Description		Labor	Total
<b>1.0</b>	<b>Pre-Design</b>			
	Project Management - Project Discipline Coordination, Schedule, Invoicing, maintaining budget, safety plan, Utility coordination, and assist owner in Utility application. Kick Off Meeting, Project Meetings, Site Visits		<b>\$20,255.00</b>	
1.1	30% Basis of Design Report Draft and Final, Review meeting, Utility and Waste Gas Co-Gen Coordination		<b>\$31,715.00</b>	
<b>Pre-Design Total:</b>				<b>\$51,970.00</b>
<b>2.0</b>	<b>Design</b>			
2.1	60% Submittal Drawings and Specifications, Engineers Cost Estimate		<b>\$28,420.00</b>	
2.2	90% Submittal Drawings and Specifications Engineers Cost Estimate		<b>\$23,900.00</b>	
2.3	100% Submittal Drawings and Specifications Engineers Cost Estimate		<b>\$18,790.00</b>	
<b>Design Total:</b>				<b>\$71,110.00</b>
<b>3.0</b>	<b>Final Design</b>			
3.1	Permitting and RAI's		<b>\$6,860.00</b>	
<b>Final Design Total:</b>				<b>\$6,860.00</b>
<b>4.0</b>	<b>Bidding</b>			
4.1	S&S IFB Drawings and Specifications, Prebid meeting, Contractor Questions Responses, Addenda		<b>\$4,305.00</b>	
<b>Bidding Total:</b>				<b>\$4,305.00</b>
<b>5.1</b>	<b>Construction Services</b>			
	Construction Administration, Construction Observations, Submittals, RFI's, Change Orders, Substantial and Final completion, Start-up.		<b>\$66,125.00</b>	
<b>Construction Services Total:</b>				<b>\$66,125.00</b>
<b>SUBTOTAL, LABOR AND SUB-CONTRACTORS:</b>				<b>\$200,370.00</b>
	<b>Permit Fees (Estimate)</b>			<b>\$1,000.00</b>
	<b>Contingency (10%)</b>			<b>\$20,037.00</b>
<b>GRAND TOTAL:</b>				<b>\$221,407.00</b>

**ATTACHMENT "A"**  
**CONSULTANT WORK ORDER – PROJECT FEES TABLE**  
**NE WRF Chlorine Contact Chamber Solar Energy Project**

McKim & Creed Inc.

24-0039-UT

City of Clearwater

City of Clearwater NE WRF Contact Chamber Solar Project									
PAGE 1 OF 1									
ELECTRICAL WORK TASK BREAKDOWN									
PROPOSAL NO. 242529									
TASK	COMMENTS	PROJECT MANGAGER III	PROJECT ENGINEER IV	PROJECT ENGINEER II	DESIGENER II	PROJECT ADMIN	LABOR HOURS	LABOR DOLLARS	TOTAL COSTS
<b>Direct Rate</b>									
<b>Labor Multiplier</b>									
<b>BILLING RATE</b>		\$ 220.00	\$ 210.00	\$ 175.00	\$ 130.00	\$ 90.00			
Task 1.0	<b>Project Administration, Data Collection and Review</b>								
	Project Management - Project Discipline Coordination, Schedule, Invoicing, maintaining budget, safety plan, Utility coordination, and assist owner in Utility application.	8.0				8.0	16.0	\$ 2,480.00	\$2,480.00
	Kick Off Meeting (Virtual)	1.0	1.0	1.0			3.0	\$ 605.00	\$605.00
	Client Project Meeting (One per Month -9 months) Virtual	9.0	9.0				18.0	\$ 3,870.00	\$3,870.00
	Initial Site Visit(s)	4.0		8.0			20.0	\$ 3,960.00	\$3,960.00
	Clearwater Site Visit ( Total 4)		12.0		12.0		24.0	\$ 4,080.00	\$4,080.00
	Submittal Coordination -Total 5	5.0					5.0	\$ 1,100.00	\$1,100.00
	Elective Pay Process	8.0	8.0			8.0	24.0	\$ 4,160.00	\$4,160.00
	<b>Subtotal Task 1</b>	<b>35.0</b>	<b>38.0</b>	<b>9.0</b>	<b>12.0</b>	<b>16.0</b>	<b>110.0</b>	<b>\$ 20,255.00</b>	<b>\$20,255</b>
Task 1.1	<b>30% Basis of Design</b>								
	Data Collection for Feasibility Study	1.0	8.0	8.0			17.0	\$ 3,300.00	\$3,300.00
	Draft Design Report Write Up with Feasibility Study	2.0	16.0			4.0	22.0	\$ 4,160.00	\$4,160.00
	Review Meeting (Virtual)	1.0	1.0	1.0			3.0	\$ 605.00	\$605.00
	Final Report Write Up		8.0	4.0		8.0	20.0	\$ 3,100.00	\$3,100.00
8	Initial Utility Contact & Coordination	4.0	8.0	4.0			16.0	\$ 3,260.00	\$3,260.00
	Initial calculations of Fault Current, for ratings of equipment.		4.0	8.0			12.0	\$ 2,240.00	\$2,240.00
	30% Drawings and Calculations (Electrical)	2.0	8.0	8.0	25.0		43.0	\$ 6,770.00	\$6,770.00
	30% Drawings and Calculations (Structural)	1.0	8.0	8.0	12.0		29.0	\$ 4,860.00	\$4,860.00
	Waste Gas Co-Gen Coordination,	4.0	4.0			4.0	12.0	\$ 2,080.00	\$2,080.00
	Engineers Estimate of Probable Cost (EEoPC) ACEC Class 5	1.0	2.0	4.0			7.0	\$ 1,340.00	\$1,340.00
	<b>Subtotal Task 1.1</b>	<b>16.0</b>	<b>67.0</b>	<b>45.0</b>	<b>37.0</b>	<b>16.0</b>	<b>181.0</b>	<b>\$ 31,715.00</b>	<b>\$31,715</b>
Task 2.1	<b>60% Design</b>								
	60% Drawings and Calculations (Electrical)	2.0	16.0	24.0	32.0		74.0	\$ 12,160.00	\$12,160.00
	60% Drawings and Calculations (Structural)	1.0	16.0		24.0		41.0	\$ 6,700.00	\$6,700.00
	60% Specifications	2.0	8.0	24.0		4.0	42.0	\$ 7,100.00	\$7,100.00
	Engineers Estimate of Probable Cost (EEoPC) ACEC Class 4	1.0	4.0	8.0			13.0	\$ 2,460.00	\$2,460.00
	<b>Subtotal Task 2.1</b>	<b>6.0</b>	<b>44.0</b>	<b>56.0</b>	<b>56.0</b>	<b>4.0</b>	<b>170.0</b>	<b>\$ 28,420.00</b>	<b>\$28,420</b>
Task 2.2	<b>90% Design</b>								
	90% Drawings and Calculations (Electrical)	1.0	16.0	24.0	32.0		73.0	\$ 11,940.00	\$11,940.00
	90% Drawings and Calculations (Structural)	1.0	16.0		12.0		29.0	\$ 5,140.00	\$5,140.00
	90% Specifications	1.0	8.0	16.0		4.0	33.0	\$ 5,480.00	\$5,480.00
	Engineers Estimate of Probable Cost (EEoPC) ACEC Class 3	1.0	2.0	4.0			7.0	\$ 1,340.00	\$1,340.00
	<b>Subtotal Task 2.2</b>	<b>4.0</b>	<b>42.0</b>	<b>44.0</b>	<b>44.0</b>	<b>4.0</b>	<b>142.0</b>	<b>\$ 23,900.00</b>	<b>\$23,900</b>
Task 2.3	<b>100% Design</b>								
	100% Drawings and Calculations (Electrical)	1.0	16.0	16.0	25.0		58.0	\$ 9,630.00	\$9,630.00
	100% Drawings and Calculations (Structural)	1.0	16.0		12.0		29.0	\$ 5,140.00	\$5,140.00
	100% Specifications	1.0	4.0	8.0		4.0	21.0	\$ 3,240.00	\$3,240.00
	Engineers Estimate of Probable Cost (EEoPC) ACEC Class 2	1.0	1.0	2.0			4.0	\$ 780.00	\$780.00
	<b>Subtotal Task 2.3</b>	<b>4.0</b>	<b>37.0</b>	<b>26.0</b>	<b>37.0</b>	<b>4.0</b>	<b>112.0</b>	<b>\$ 18,790.00</b>	<b>\$18,790</b>
Task 3.1	<b>Permitting</b>								
	Submit (100%) S&S Drawings and Application	1.0	4.0	4.0	12.0		29.0	\$ 4,160.00	\$4,160.00
	Request for Addition Information (RAI's)	1.0	4.0	4.0	4.0		17.0	\$ 2,700.00	\$2,700.00
							0.0	\$ -	\$0.00
	<b>Subtotal Task 3.1</b>	<b>2.0</b>	<b>8.0</b>	<b>8.0</b>	<b>16.0</b>	<b>0.0</b>	<b>46.0</b>	<b>\$ 6,860.00</b>	<b>\$6,860</b>
Task 4.1	<b>Bid Phase</b>								
	S & S Issue for Bid Documents (IFB)	1.0	1.0	2.0	12.0	2.0	22.0	\$ 2,940.00	\$2,940.00
	Attend Pre-Bid Meeting		2.0				6.0	\$ 840.00	\$840.00
	Provide Contractor Question Responses		1.0				2.0	\$ 315.00	\$315.00
	Addenda						2.0	\$ 210.00	\$210.00
	Estimated Permit Costs						0.0	\$ -	\$0.00
	<b>Subtotal Task 4.1</b>	<b>1.0</b>	<b>4.0</b>	<b>2.0</b>	<b>12.0</b>	<b>2.0</b>	<b>32.0</b>	<b>\$ 4,305.00</b>	<b>\$4,305</b>
Task 5.1	<b>Construction Services</b>								
	Conformed Documents				16.0		16.0	\$ 2,080.00	\$2,080.00
	Pre-Construction Meeting			4.0			4.0	\$ 700.00	\$700.00
	Shop Drawing Review (Est. 35)		35.0	105.0			140.0	\$ 25,725.00	\$25,725.00
	Request for Information (Est. 20)		10.0	40.0			50.0	\$ 9,100.00	\$9,100.00
	Change Order Review (Est.5)	2.5	5.0				7.5	\$ 1,600.00	\$1,600.00
	Site Visits (Est 20)		20.0	40.0			60.0	\$ 11,200.00	\$11,200.00
	Substantial and Final Completion		8.0	8.0			16.0	\$ 3,080.00	\$3,080.00
	Project Start-Up		16.0	16.0			32.0	\$ 6,160.00	\$6,160.00
	Record Drawings				24.0		24.0	\$ 3,120.00	\$3,120.00
	SOP		16.0				16.0	\$ 3,360.00	\$3,360.00
	<b>Subtotal Task</b>	<b>2.5</b>	<b>110.0</b>	<b>213.0</b>	<b>24.0</b>	<b>0.0</b>	<b>349.5</b>	<b>\$ 66,125.00</b>	<b>\$66,125</b>
<b>TOTAL</b>		<b>71</b>	<b>350</b>	<b>403</b>	<b>238</b>	<b>46</b>	<b>545</b>	<b>\$ 200,370.00</b>	<b>\$200,370.00</b>

# CONSULTANT WORK ORDER

## CITY DELIVERABLES

### 1. FORMAT:

The design plans shall be compiled utilizing the following methods:

1. City of Clearwater CAD standards.
2. Datum: Horizontal and Vertical datum shall be referenced to North American Vertical Datum of 1988 (vertical) and North American Datum of 1983/90 (horizontal). The unit of measurement shall be the United States Foot. Any deviation from this datum will not be accepted unless reviewed by City of Clearwater Engineering/Geographic Technology Division.

### 2. DELIVERABLES:

The design plans shall be produced on bond material, 24" x 36" at a scale of 1" = 20' unless approved otherwise. Upon completion the consultant shall deliver all drawing files in digital format with all project data in Autodesk Civil 3D file format.

NOTE: If approved deviation from Clearwater CAD standards is used, the Consultant shall include all necessary information to aid in manipulating the drawings including either PCP, CTB file or pen schedule for plotting. The drawing file shall include only authorized fonts, shapes, line types or other attributes contained in the standard release of Autodesk software. All block references and other references contained within the drawing file shall be included. Please address any questions regarding format to Mr. Thomas Mahony, at (727) 562-4762 or email address [Thomas.Mahony@myClearwater.com](mailto:Thomas.Mahony@myClearwater.com).

All electronic files (including CAD and Specification files) must be delivered upon completion of project or with 100% plan submittal to City of Clearwater.