

Ms. Marta Alonso, PE
Project Manager, Public Utilities/Engineering
City of Hollywood – Department of Public Utilities
1621 North 14th Avenue
Hollywood, FL 33022

Arcadis US, Inc.
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Date: September 12, 2024

Subject: Work Order Proposal (Rev.2)

City of Hollywood – South Regional Wastewater Treatment Plant (WWTP) Switch Gears Replacement

Dear Ms. Alonso:

Arcadis U.S., Inc. (Arcadis) is pleased to present the City of Hollywood (City) with our work order proposal to provide a Technical Memorandum (TM), construction plans and documents, permitting and bidding support for the Switch Gears Replacement (The Project) at the South Regional Wastewater Treatment Plant (WWTP).

This work order shall be executed per the terms and conditions of the Professional Services Agreement for General Engineering Consultant Services: Water Treatment Plant and Wastewater Treatment Plant Projects No. 1324A (Agreement) executed on October 31, 2023, by and between the City and Arcadis.

INTRODUCTION

The City desires to replace the critical electrical Switchgear Substations and Motor Control Centers at the WWTP. Much of this equipment is original, which makes some of it, 40+ years old, and during its life it has been exposed to the wastewater atmosphere surrounding the WWTP. In addition, much of this equipment is no longer available as the original manufacturers are no longer in business and aftermarket or rebuilt components are the only options for repair. Additional concerns are the room environment the equipment is located in and the resiliency of the equipment from flooding.

SCOPE OF WORK

The electrical areas affected by the design effort will be the following:

- Substation B that has 4160/480V transformers T-1 & T-2 and 480V Switchboards A & B. The design will replace the substation in its entirety including feeder breakers. The existing battery backup system for the substation breaker operation will also be replaced.

This room also houses MCC SA & SB which may be slated for replacement based on further assessment. There are also ancillary power and lighting panels L4, L5, 1SH,1SL along with their associated small transformers that are to be replaced for the same reasons stated above. It is also requested the equipment to be installed on equipment concrete pads instead of directly on floor grade. This will help in the event of minor water intrusion within the room and add to the life and cleanliness of the equipment. Air conditioning with filtration will be installed for the room as there is no existing. This will require modifications to the building by blocking off or installing windows where louvers are now.

- Dewatering Building MCC-D1 & D2 main breakers are to be replaced along with switchboards X & Y. The MCC's are to remain as they are newer than the equipment to be replaced. The main breaker and switchboards will be placed on equipment concrete pads. This room is already an air-conditioned space.

- Substation C is similar to Substation B as far as the equipment to be replaced including panelboards with associated 4160/480V transformers T-1 & T-2. There is an old and relatively unused MCC-1E that can be replaced with a switchboard, freeing up space at a lower cost. All new switchgear will be placed on equipment pads. This room is to be air-conditioned and will require building modification as Substation B building with the added modifications for flood mitigation (flood panels) as it is in a lower elevation area of the plant. To be in compliance with Florida Building Code, the elevation of the Flood Panels shall be at least 12-inches above the Base Flood Elevation. Flood Panels will be modified to comply with requirement.
- Substation D is again like C and B as it is of the same age and condition. This equipment will be replaced. The substation is connected to newer MCC's that will not be replaced. However, there are some low voltage lighting panels and transformers that the City has asked to be replaced because of their age, condition and hard to obtain parts. The equipment will be placed on equipment pads and air-conditioning for the room installed.
- The Recharge Pump Station is currently under design for a pump addition. In the room there is an existing low voltage panelboard P1 that is need of replacement because of age and condition. The panel powers valves and lighting for the pump station. Because of the room environment it will be replaced with a NEMA 4X stainless steel power panel that is designed to resist water and corrosive atmospheres.
- The De-Grit MCC's and panelboards are in need of replacement because of age and the increased inability to find replacement parts. This equipment will be replaced in its entirety and air conditioning added if needed to decrease the effects of hydrogen sulfide gases. Existing louvered windows will be sealed up.
- Provide for an assessment of both low voltage (480V) and medium voltage cables throughout the WWTP. Design will outline which cables are to be tested and include specifications for a non-destructive "Megger"TM insulation test of 480V cable and a non-destructive (Partial Discharge or Very Low Frequency) test of the medium voltage cables. A NETA certified testing sub-contractor will be employed to test the cables. A report will be generated and if any are recommended for replacement these will be added to the construction documents. Electrical isolation of circuits will be needed to perform testing. Switching of electrical equipment is the responsibility of the customer. If Arcadis or the sub-contractor is requested or required to perform the switching operations, no responsibility will be assumed by Arcadis or the sub-contractor for any possible equipment failure during switching operations. **It is assumed the equipment is in good working order and operation of electrical equipment will be performed by City personnel.**
- Assessment and testing of protection relays for incoming FPL service. Assessment and recommendation will be a part of a Technical Memorandum (TM). Testing will be done using a third-party NETA firm.
- None of the afore mentioned equipment has surge suppression devices (SPD) nor has had a coordination and arcflash study performed since installed. This is an OSHA and NEC requirement for both items. A preliminary evaluation of Fault Coordination and arcflash levels will be performed as part of the design with the final study performed once the equipment has been chosen and procured. The final portion of the study can be performed as part of the Contractor's construction contract or performed by Arcadis as part of Construction Stage Services. Either way the preliminary coordination and arcflash electronic E-Tap files can be made available to the City.

The design shall include the following:

- A TM outlining the design intent, design constraints, materials, and equipment to be used, constructability including sequence of construction, and preliminary costs.

- Design document submittals for 30, 60, 90, 100% and Issue for Bid for construction documents including material and equipment specifications.
- Preliminary Coordination and Arcflash using E-Tap.
- Estimation of Engineer's Probable Costs at each submittal.

TASK 1 – PROJECT MANAGEMENT

Arcadis with the electrical subconsultant Mckim & Creed (Arcadis Team) shall provide project management services during delivery of the project. All communications, correspondence, and submittals shall be directed through the City's Project Manager. Project Management services shall include the following:

- a) Attend and lead a project kickoff meeting and site visit combined to revise site conditions. During this meeting, the goal is to review the scope of work, project schedule, available background information (PDF records drawings and O&M Manuals), discuss key milestones, and key contacts.
- b) Prepare a meeting agenda prior to the kickoff meeting and distribute meeting minutes within 5 days following completion of the meeting.
- c) Provision, monitoring and updating of schedule of services being provided. The initial project schedule will be provided in MS Project format at Project Kickoff and updated as necessary throughout the Project.
- d) Monthly design progress reporting and invoicing.
- e) Monthly Meetings with the City Project Manager and other City or Utility staff. These meetings will be held virtually via Teams.

Deliverables: The following deliverables shall be provided under Task 1:

- Kick-off Meeting Summary and Project Schedule in PDF format
- Summary of the monthly meetings in PDF format
- Monthly update reports

TASK 2 – PRELIMINARY DESIGN

Task 2.1 Technical Memorandum

The Arcadis Team shall provide a TM for review by the City that accounts for the following:

- Brief description on project background and scope of work.
- Analysis of alternatives for electrical power equipment including the potential reuse and relocation of the existing substation transformers to save on construction cost HVAC and heat loads. A recommendation will be provided for City consideration.
- Analysis that addresses the civil, structural, ventilation and instrumentation aspects of the Project including flood mitigation for Substation Building C.
- Preliminary (30%) plans showing the civil, mechanical, structural, ventilation, electrical and I & C aspects of the Project.
- Preliminary construction cost estimate (Class 4 – Used for Budget authorization or control. Expected accuracy ranges from -30% to + 50%)

- Quality assurance and quality control activities of TM.
- Preparation of a Draft TM for City review.
- Preparation of a Final TM based on City’s comments.

Deliverables:

The following deliverable will be provided under this task:

- TM submitted to the City electronically.

Task 2.2 Basis of Design Review Meeting

The Arcadis Team shall prepare for and attend a Basis of Design virtual review meeting to review comments and requested revisions provided by the City from the deliverable made in Task 2.1.

Deliverables:

The following deliverable will be provided under this task:

- Meeting minutes submitted to the City electronically.

TASK 3 – DETAILED DESIGN

The design will be delivered in stages of completion to allow for input by the City. At each stage, an Engineer’s opinion of probable construction cost (EOPCC) will be provided. Throughout the Design phase of the Project, The Arcadis Team will engage senior technical staff who shall be responsible for conducting quality assurance and control (QA/QC) of the design at each key progress milestone.

Contract Drawings will be prepared in AutoCAD format, latest version. Technical Specifications will follow the Master Format® 2016 50 Division format from the Construction Specifications Institute (CSI).

Preliminary, it is estimated the following quantities of sheets per disciplines.

| Discipline | Number of Sheets |
|---|-------------------------|
| General | 5 |
| Electrical/Instrumentation and Controls (I&C) | 50 |
| Building Mechanical | 10 |
| Civil | 5 |
| TOTAL | 70 |

Task 3.1 60% Design

The Arcadis Team shall prepare 60% design plans, which will incorporate comments from City and feedback obtained and defined as part of the previous tasks. This package will include the following:

- 60% Design Drawings (PDF file)
- Draft 60% Technical Specifications
- 60% EOPCC Class 3 (Accuracy -20% to +30%)

The Arcadis Team shall coordinate one review workshop with City staff to discuss comments on the 60% submittal. This workshop will be held virtually.

Task 3.2 90% Design

The Arcadis Team shall prepare 90% design plans, which will incorporate comments from City and feedback obtained and defined as part of the previous tasks. This package will include the following:

- 90% Design Drawings (PDF file)
- Draft 90% Technical Specifications
- 90% EOPCC Class 3 (Accuracy -20% to +30%)
- Draft 90% Bid Document

The Arcadis Team shall coordinate one virtual review workshop with City staff to discuss comments on the 90% submittal.

Task 3.3 100% Design

The Arcadis Team shall prepare final design plans, which will incorporate comments from City and feedback obtained and defined as part of the previous tasks. This package will include the following:

- Final Signed and Sealed Design Drawings (PDF file)
- EOPCC Class 2 (Accuracy -15% to +20%)
- Final Project Manual that consists of the City's latest Invitation to Bid highlighted for the information needed from the City for this Project, the City's latest Construction Contract Document, and the Technical Specifications for the Project.

TASK 4 – PERMITTING SERVICES

Task 4.1 Permit Applications

The Arcadis Team shall prepare the permit applications and corresponding supporting documentation and obtain applicable signatures utilizing the 90% Design Plans provided in Task 3.2.

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

- City of Hollywood Building Department
- Florida Department of Environmental Protection

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.
- The Arcadis Team will respond to one (1) Request for Additional Information (RAI) for each permitting agency and incorporate revisions requested by the permitting agencies and re-submit information.

The City shall be responsible for paying all permit application fees.

TASK 5 – BIDDING SERVICES

Task 5.1 Pre-Bid Meeting

The Arcadis Team shall participate in one (1) pre-bid meeting in conjunction with City staff. The City's purchasing department will lead the pre-bid conference. The Arcadis Team shall attend one (1) pre-bid meeting and site visit.

Task 5.2 Bid Clarification/Addenda

The Arcadis Team shall respond to technical questions and Request for Information (RFIs) received from potential bidders by preparing addendum documents to be issued by the City. A maximum of three (3) addenda requiring a technical response covering the RFIs received during the bid phase will be provided.

Task 5.3 Contract Awards

City shall open bids, prepare bid tabulation, and provide Arcadis with bid tabulation and bid responses received. The Arcadis Team shall assist City in evaluating bids, conduct reference checks, and prepare a written award recommendation.

Task 5.4 Conformed Documents

The Arcadis Team shall prepare conformed drawings and specifications that incorporate technical addenda.

Deliverables:

- Up to three (3) addenda requiring a technical response covering the RFIs received during the bid phase submitted electronically to the City.
- Bid evaluation and written award recommendation submitted electronically to the City.
- A maximum of three (3) hard copies of the conformed (24" x 36" size format) design drawings and two (2) bounded technical specifications. Electronic files including AutoCAD files, pdfs and Word documents to be provided to the City.

ASSUMPTIONS

- Construction Administration, Inspection and Design Services during construction are not included as part of this Task Order.
- Final Arcflash study is not included. This service can be included as part of a separate package for construction administration or provided by the Contractor under the bid package.
- Flood mitigation measures at Substation Buildings B & D, Dewatering and Recharge Pumps electrical building are excluded.

- Programming Services of protection relays and HMI SCADA screens. (Can be performed under separate contract and will need Coordination and Arcflash Study to perform).
- Topographic Survey is not included.
- 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.
- Testing of protection relays for incoming FPL service will be done using third-party NETA firm.

SCHEDULE

Currently supply chain pressures are causing significant delays for projects requiring electrical equipment. Medium voltage (4160V) equipment may require even longer lead times, so a realistic construction schedule could potentially be in the order of 16 to 24 months after approved shop drawings. Allowing 14 months for design, permitting and bidding indicates a potential earliest project completion date of 30 months from Authorization to Proceed (ATP). The City is therefore encouraged to expedite the ATP in any way possible. Depending on the issuance of the ATP, estimates for completion of key milestones are as follows:

| Task | Estimated Duration (months) | Time from ATP (months) |
|--------------------|-----------------------------|------------------------|
| Preliminary Design | 3 | 3 |
| 60% Design | 3 | 6 |
| 90% Design | 4 | 10 (Start Permit) |
| 100% Design | 2 | 12 |
| Permitting | 3 | 13 (Finish) |
| Bid Support | 2 | 14 |
| TOTAL | 14 | 14 |

BUDGET

Arcadis shall perform the services for a total fee (Time and Materials Not-to-Exceed) of **\$537,183** based on the approved hourly rate schedule. The terms of compensation shall be in conformance with the Agreement dated October 31, 2023, between the City and Arcadis. **Attachment A** includes anticipated budget allocations for the tasks discussed herein.

| Task | Cost |
|----------------------------|-------------------------|
| Project Management | \$34,020 |
| Preliminary Design | \$166,558 |
| Detailed Design | \$309,125 |
| Permitting Services | \$10,585 |
| Bidding Services | \$8,295 |
| Reimbursables (SME Travel) | \$8,600 |
| TOTAL | <u>\$537,183</u> |

Ms. Marta Alonso, P.E. – Project Manager
City of Hollywood – Department of Public Utilities
September 12, 2024

Arcadis is excited about this opportunity to provide the engineering design and bidding services for this Project. Should you have any questions regarding this work order proposal, please do not hesitate to contact me.

Sincerely,

Arcadis U.S., Inc.



Jose Custodio, P.E.
Project Manager

Copies:

Plantation Files (Arcadis)

Enclosures:

Attachment A - Detailed Fee Breakdown

Attachment B – Fee Proposal from Mckim & Creed

This proposal and its contents shall not be duplicated, used or disclosed — in whole or in part — for any purpose other than to evaluate the proposal. This proposal is not intended to be binding or form the terms of a contract. The scope and price of this proposal will be superseded by the contract. If this proposal is accepted and a contract is awarded to Arcadis as a result of — or in connection with — the submission of this proposal, Arcadis and/or the client shall have the right to make appropriate revisions of its terms, including scope and price, for purposes of the contract. Further, client shall have the right to duplicate, use or disclose the data contained in this proposal only to the extent provided in the resulting contract.

ATTACHMENT A

Work Break Down Fee Schedule

Project: MCC and Switchgear Replacement (City of Hollywood)

| TASK | | CATEGORIES (ARCADIS) - PRIME | | | | | | | | | | ARCADIS | | | | |
|---------------------------------------|----------------------------|------------------------------|-----------------|------------------|----------------------|--------------------|-------------|------------|--------------|----------------|-------------------|------------------|-------------------------------|--------------------------------|--------------------|----------------------------------|
| Task No. | Description | Principal In Charge | Project Manager | Technical Expert | Principal Engineer I | Senior Engineer II | Engineer II | Engineer I | Technician I | Administrative | Total Hours | Labor Fee | Subconsultant (Mckim & Creed) | Subconsultant (WIRX - Geotech) | Other Direct Costs | Total Labor + Other Service Fees |
| 1 | Project Management | 4 | 42 | | 2 | 2 | 2 | 12 | | 4 | 68 | \$16,340 | \$17,680 | | | \$34,020 |
| 2 | Preliminary Design | 1 | 30 | 20 | 30 | 12 | 50 | 12 | | | 155 | \$33,825 | \$113,820 | \$18,913 | | \$166,558 |
| 3 | Detailed Design | 1 | 24 | 80 | 68 | 6 | 48 | 24 | 220 | | 471 | \$82,965 | \$226,160 | | | \$309,125 |
| 4 | Permitting Services | | 8 | 6 | 4 | | 4 | 24 | | | 46 | \$8,710 | \$1,875 | | | \$10,585 |
| 5 | Bidding Support | | 10 | 2 | | | | | | | 12 | \$3,420 | \$4,875 | | | \$8,295 |
| 6 | Reimbursables (SME Travel) | | | | | | | | | | 0 | \$0 | \$3,600 | \$5,000 | | \$8,600 |
| Totals | | 6 | 114 | 108 | 104 | 20 | 104 | 72 | 220 | 4 | 752 | \$145,260 | \$368,010 | \$18,913 | \$5,000 | \$537,183.00 |
| Approved Billing Rates - 2023 (\$/hr) | | \$295 | \$285 | \$285 | \$255 | \$235 | \$145 | \$130 | \$110 | \$90 | SUBTOTAL 1 | | | | | \$537,183.00 |

Arcadis US Inc.
City of Hollywood Switchgear and MCC Replacement
MCKIM & CREED ELECTRICAL MANPOWER AND COSTS
PROPOSAL # 234505
9/12/2024

R0 #REF!

| TASK | Project Manager | Project Engineer | Project Engineer | Designer | Senior Project Admin | Labor Hours | Labor Cost | Airline/Car/Hotel | Sub Contractor | Expenses Sub Total | Sub Total |
|---|-----------------|------------------|------------------|----------|----------------------|-------------|-------------|-------------------|----------------|--------------------|-------------|
| | III | IV | III | II | | Total | Total | | | | |
| | III | IV | III | II | Admin | | | | | | |
| Task 1: Project Management | \$230 | \$220 | \$205 | \$130 | \$105 | | | | | | |
| 1 | | | | | | | | | | | |
| Project Setup, Management and Administration (12-mth duration) | 24 | 12 | 12 | | | 48 | \$10,620.00 | | | \$0.00 | \$10,620.00 |
| Design Kickoff Meeting (Virtual) | 2 | 2 | 2 | 2 | 2 | 10 | \$1,780.00 | | | \$0.00 | \$1,780.00 |
| Client In Person Meetings (total 3) | | 24 | | | | 24 | \$5,280.00 | \$1,200 | | \$1,200.00 | \$6,480.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Subtotal Hours | 26 | 38 | 14 | 2 | 2 | 82 | | | | | |
| Subtotal Cost | \$5,980 | \$8,360 | \$2,870 | \$260 | \$210 | | \$17,680 | | | \$1,200 | \$18,880 |
| Task 2: Preliminary Design | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| Research Discussion with Manufacturers | | 4 | 8 | | | 12 | \$2,520.00 | | | \$0.00 | \$2,520.00 |
| Team Discipline Discussions (progress,phone, email) | | 4 | 4 | | | 8 | \$1,700.00 | | | \$0.00 | \$1,700.00 |
| Technical Memorandum/Basis of Design Write up | | 16 | 40 | | 2 | 58 | \$11,930.00 | | | \$0.00 | \$11,930.00 |
| Preliminary Construction Costs | | 2 | 12 | | | 14 | \$2,900.00 | | | \$0.00 | \$2,900.00 |
| Preliminary Design Meeting (In-Person 4hr Combined) | | 8 | 8 | | | 16 | \$3,400.00 | \$400 | | \$400.00 | \$3,800.00 |
| Additional Site Visits (To be used anytime) | | 40 | | | | 40 | \$8,800.00 | \$2,000 | | \$2,000.00 | \$10,800.00 |
| QA/QC | | | | | | 4 | \$920.00 | | | \$0.00 | \$920.00 |
| Cable and Protective Relay Testing (5-days Sub-Contractor) | 4 | | | | | | | | | | |
| Includes Mark-up | | | | | | 0 | \$0.00 | | \$81,650 | \$81,650.00 | \$81,650.00 |
| Subtotal Hours | 4 | 74 | 72 | 0 | 2 | 152 | | | | | |
| Subtotal Cost | \$920 | \$16,280 | \$14,760 | \$0 | \$210 | | \$32,170 | | | \$84,050 | \$116,220 |
| Task 3: Design Services | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| Tasks 3: Substation B & Dewatering Building Switchboards | | | | | | | | | | | |
| 30% Preliminary Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 4 | 12 | 24 | | 40 | \$6,460.00 | | | \$0.00 | \$6,460.00 |
| Site Plan | | | 4 | 8 | | 12 | \$1,860.00 | | | \$0.00 | \$1,860.00 |
| Specification TOC | | | 2 | | 2 | 4 | \$620.00 | | | \$0.00 | \$620.00 |
| EOPCC (ACEC Class 4) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 1 | | | | | 1 | \$230.00 | | | \$0.00 | \$230.00 |
| Submittal Documents (Including Preliminary Report) | | 1 | 1 | 2 | 4 | 8 | \$1,105.00 | | | \$0.00 | \$1,105.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| 60% Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 1 | 8 | 16 | | 25 | \$3,940.00 | | | \$0.00 | \$3,940.00 |
| Site Plan, Ductbanks, Cable trays | | 1 | 4 | 8 | | 13 | \$2,080.00 | | | \$0.00 | \$2,080.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | 4 | 10 | 40 | | 54 | \$8,130.00 | | | \$0.00 | \$8,130.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Panelboard Design and Schedule | | 1 | 4 | 24 | | 29 | \$4,160.00 | | | \$0.00 | \$4,160.00 |
| Details | | 1 | 4 | 16 | | 21 | \$3,120.00 | | | \$0.00 | \$3,120.00 |
| Specifications | | 2 | 10 | | | 12 | \$2,490.00 | | | \$0.00 | \$2,490.00 |
| EOPCC (ACEC Class 3) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 4 | | | | | 4 | \$920.00 | | | \$0.00 | \$920.00 |
| Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | | \$0.00 | \$1,145.00 |
| Team Discipline Discussions (progress,phone, email) | 1 | | 4 | | | 5 | \$1,050.00 | | | \$0.00 | \$1,050.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| 90% Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 1 | 2 | 4 | | 7 | \$1,150.00 | | | \$0.00 | \$1,150.00 |
| Site Plan, Ductbanks, Cable trays | | | 2 | 4 | | 6 | \$930.00 | | | \$0.00 | \$930.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | 2 | 8 | 32 | | 42 | \$6,240.00 | | | \$0.00 | \$6,240.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Panelboard Design and Schedule | | | 2 | 8 | | 10 | \$1,450.00 | | | \$0.00 | \$1,450.00 |
| Details | | | 2 | 8 | | 10 | \$1,450.00 | | | \$0.00 | \$1,450.00 |
| Specifications | | 1 | 8 | | | 9 | \$1,860.00 | | | \$0.00 | \$1,860.00 |
| EOPCC (ACEC Class 2) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 2 | | | | | 2 | \$460.00 | | | \$0.00 | \$460.00 |
| Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | | \$0.00 | \$1,145.00 |
| Team Discipline Discussions (progress,phone, email) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Final Electrical Design (100%) | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | | 1 | 2 | | 3 | \$465.00 | | | \$0.00 | \$465.00 |
| Site Plan, Ductbanks, Cable trays | | | 1 | 2 | | 3 | \$465.00 | | | \$0.00 | \$465.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | | 4 | 16 | | 20 | \$2,900.00 | | | \$0.00 | \$2,900.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Panelboard Design and Schedule | | | 1 | 4 | | 5 | \$725.00 | | | \$0.00 | \$725.00 |
| Details | | | 1 | 4 | | 5 | \$725.00 | | | \$0.00 | \$725.00 |
| Specifications | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| EOPCC (ACEC Class 1) | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| QA/QC | 2 | | | | | 2 | \$460.00 | | | \$0.00 | \$460.00 |
| Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | | \$0.00 | \$1,145.00 |
| Team Discipline Discussions (progress,phone, email) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Subtotal Hours | 10 | 25 | 122 | 234 | 18 | 409 | | | | \$0 | \$65,120 |
| Subtotal Cost | \$2,300 | \$5,500 | \$25,010 | \$30,420 | \$1,890 | | \$65,120 | | | \$0 | \$65,120 |
| 3 | | | | | | | | | | | |
| Tasks 3: Substation C | | | | | | | | | | | |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |

| | | | | | | | | | | | |
|--|---------|---------|----------|----------|---------|-----|------------|--|--|--------|------------|
| 30% Preliminary Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 4 | 12 | 24 | | 40 | \$6,460.00 | | | \$0.00 | \$6,460.00 |
| Site Plan | | | 4 | 8 | | 12 | \$1,860.00 | | | \$0.00 | \$1,860.00 |
| Specification TOC | | | 2 | | 2 | 4 | \$620.00 | | | \$0.00 | \$620.00 |
| EOPCC (ACEC Class 4) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 1 | | | | | 1 | \$230.00 | | | \$0.00 | \$230.00 |
| Submittal Documents (Including Preliminary Report) | | 1 | 1 | 2 | 4 | 8 | \$1,105.00 | | | \$0.00 | \$1,105.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| 60% Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 1 | 4 | 8 | | 13 | \$2,080.00 | | | \$0.00 | \$2,080.00 |
| Site Plan, Ductbanks, Cable trays | | 1 | 4 | 8 | | 13 | \$2,080.00 | | | \$0.00 | \$2,080.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | 4 | 10 | 40 | | 54 | \$8,130.00 | | | \$0.00 | \$8,130.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Panelboard Design and Schedule | | 1 | 4 | 24 | | 29 | \$4,160.00 | | | \$0.00 | \$4,160.00 |
| Details | | 1 | 4 | 16 | | 21 | \$3,120.00 | | | \$0.00 | \$3,120.00 |
| Specifications | | 2 | 10 | | | 12 | \$2,490.00 | | | \$0.00 | \$2,490.00 |
| EOPCC (ACEC Class 3) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 4 | | | | | 4 | \$920.00 | | | \$0.00 | \$920.00 |
| Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | | \$0.00 | \$1,145.00 |
| Team Discipline Discussions (progress,phone, email) | 1 | | 4 | | | 5 | \$1,050.00 | | | \$0.00 | \$1,050.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| 90% Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 1 | 2 | 4 | | 7 | \$1,150.00 | | | \$0.00 | \$1,150.00 |
| Site Plan, Ductbanks, Cable trays | | | 2 | 4 | | 6 | \$930.00 | | | \$0.00 | \$930.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | 2 | 8 | 32 | | 42 | \$6,240.00 | | | \$0.00 | \$6,240.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Panelboard Design and Schedule | | | 2 | 8 | | 10 | \$1,450.00 | | | \$0.00 | \$1,450.00 |
| Details | | | 2 | 8 | | 10 | \$1,450.00 | | | \$0.00 | \$1,450.00 |
| Specifications | | 1 | 8 | | | 9 | \$1,860.00 | | | \$0.00 | \$1,860.00 |
| EOPCC (ACEC Class 2) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 2 | | | | | 2 | \$460.00 | | | \$0.00 | \$460.00 |
| Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | | \$0.00 | \$1,145.00 |
| Team Discipline Discussions (progress,phone, email) | 1 | | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Final Electrical Design (100%) | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | | 1 | 2 | | 3 | \$465.00 | | | \$0.00 | \$465.00 |
| Site Plan, Ductbanks, Cable trays | | | 1 | 2 | | 3 | \$465.00 | | | \$0.00 | \$465.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | | 4 | 16 | | 20 | \$2,900.00 | | | \$0.00 | \$2,900.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Panelboard Design and Schedule | | | 1 | 4 | | 5 | \$725.00 | | | \$0.00 | \$725.00 |
| Details | | | 1 | 4 | | 5 | \$725.00 | | | \$0.00 | \$725.00 |
| Specifications | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| EOPCC (ACEC Class 1) | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| QA/QC | 2 | | | | | 2 | \$460.00 | | | \$0.00 | \$460.00 |
| Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | | \$0.00 | \$1,145.00 |
| Team Discipline Discussions (progress,phone, email) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Subtotal Hours | 10 | 25 | 118 | 226 | 18 | 397 | | | | | |
| Subtotal Cost | \$2,300 | \$5,500 | \$24,190 | \$29,380 | \$1,890 | | \$63,260 | | | \$0 | \$63,260 |
| 3 Tasks 3: Substation D & Recharge Building Panelboard P1 | | | | | | | | | | | |
| 30% Preliminary Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 4 | 12 | 24 | | 40 | \$6,460.00 | | | \$0.00 | \$6,460.00 |
| Site Plan | | | 4 | 8 | | 12 | \$1,860.00 | | | \$0.00 | \$1,860.00 |
| Specification TOC | | | 2 | | 2 | 4 | \$620.00 | | | \$0.00 | \$620.00 |
| EOPCC (ACEC Class 4) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 1 | | | | | 1 | \$230.00 | | | \$0.00 | \$230.00 |
| Submittal Documents (Including Preliminary Report) | | 1 | 1 | 2 | 4 | 8 | \$1,105.00 | | | \$0.00 | \$1,105.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| 60% Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 1 | 4 | 8 | | 13 | \$2,080.00 | | | \$0.00 | \$2,080.00 |
| Site Plan, Ductbanks, Cable trays | | 1 | 4 | 8 | | 13 | \$2,080.00 | | | \$0.00 | \$2,080.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | 4 | 10 | 40 | | 54 | \$8,130.00 | | | \$0.00 | \$8,130.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Panelboard Design and Schedule | | 1 | 4 | 24 | | 29 | \$4,160.00 | | | \$0.00 | \$4,160.00 |
| Details | | 1 | 4 | 16 | | 21 | \$3,120.00 | | | \$0.00 | \$3,120.00 |
| Specifications | | 2 | 10 | | | 12 | \$2,490.00 | | | \$0.00 | \$2,490.00 |
| EOPCC (ACEC Class 3) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 4 | | | | | 4 | \$920.00 | | | \$0.00 | \$920.00 |
| Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | | \$0.00 | \$1,145.00 |
| Team Discipline Discussions (progress,phone, email) | 1 | | 4 | | | 5 | \$1,050.00 | | | \$0.00 | \$1,050.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| 90% Electrical Design | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | 1 | 2 | 4 | | 7 | \$1,150.00 | | | \$0.00 | \$1,150.00 |
| Site Plan, Ductbanks, Cable trays | | | 2 | 4 | | 6 | \$930.00 | | | \$0.00 | \$930.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | 2 | 8 | 32 | | 42 | \$6,240.00 | | | \$0.00 | \$6,240.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Panelboard Design and Schedule | | | 2 | 8 | | 10 | \$1,450.00 | | | \$0.00 | \$1,450.00 |
| Details | | | 2 | 8 | | 10 | \$1,450.00 | | | \$0.00 | \$1,450.00 |
| Specifications | | 1 | 8 | | | 9 | \$1,860.00 | | | \$0.00 | \$1,860.00 |
| EOPCC (ACEC Class 2) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| QA/QC | 2 | | | | | 2 | \$460.00 | | | \$0.00 | \$460.00 |
| Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | | \$0.00 | \$1,145.00 |
| Team Discipline Discussions (progress,phone, email) | | 1 | 4 | | | 5 | \$1,040.00 | | | \$0.00 | \$1,040.00 |
| | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| Final Electrical Design (100%) | | | | | | 0 | \$0.00 | | | \$0.00 | \$0.00 |
| One Lines and Load & Fault Tables | | | 1 | 2 | | 3 | \$465.00 | | | \$0.00 | \$465.00 |
| Site Plan, Ductbanks, Cable trays | | | 1 | 2 | | 3 | \$465.00 | | | \$0.00 | \$465.00 |
| Equipment Layouts, Power, Grounding Plan, Schematics | | | 4 | 16 | | 20 | \$2,900.00 | | | \$0.00 | \$2,900.00 |

| | | | | | | | | | | | |
|----------|--|---------|---------|----------|----------|---------|------|------------|--|--------|------------|
| | Panelboard Design and Schedule | | | 1 | 4 | | 5 | \$725.00 | | \$0.00 | \$0.00 |
| | Details | | | 1 | 4 | | 5 | \$725.00 | | \$0.00 | \$725.00 |
| | Specifications | | 1 | 4 | | | 5 | \$1,040.00 | | \$0.00 | \$1,040.00 |
| | EOPCC (ACEC Class 1) | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | QA/QC | 2 | | | | | 2 | \$460.00 | | \$0.00 | \$460.00 |
| | Submittal Documents | | | 1 | 4 | 4 | 9 | \$1,145.00 | | \$0.00 | \$1,145.00 |
| | Team Discipline Discussions (progress,phone, email) | | 1 | 4 | | | 5 | \$1,040.00 | | \$0.00 | \$1,040.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | Subtotal Hours | 10 | 25 | 118 | 226 | 18 | 397 | | | | |
| | Subtotal Cost | \$2,300 | \$5,500 | \$24,190 | \$29,380 | \$1,890 | | \$63,260 | | \$0 | \$63,260 |
| 3 | Tasks 3: De-Grit Bulding MCC Replacement | | | | | | | | | | |
| | 30% Preliminary Electrical Design | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | One Lines and Load & Fault Tables | | 2 | 6 | 12 | | 20 | \$3,230.00 | | \$0.00 | \$3,230.00 |
| | Site Plan | | | 2 | 4 | | 6 | \$930.00 | | \$0.00 | \$930.00 |
| | Specification TOC | | | 1 | | 1 | 2 | \$310.00 | | \$0.00 | \$310.00 |
| | EOPCC (ACEC Class 4) | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | QA/QC | 1 | | | | | 1 | \$230.00 | | \$0.00 | \$230.00 |
| | Submittal Documents (Including Preliminary Report) | | | 1 | 1 | 2 | 4 | \$545.00 | | \$0.00 | \$545.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | 60% Electrical Design | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | One Lines and Load & Fault Tables | | 1 | 2 | 4 | | 7 | \$1,150.00 | | \$0.00 | \$1,150.00 |
| | Site Plan, Ductbanks, Cable trays | | 1 | 2 | 4 | | 7 | \$1,150.00 | | \$0.00 | \$1,150.00 |
| | Equipment Layouts, Power, Grounding Plan, Schematics | | 2 | 6 | 20 | | 28 | \$4,270.00 | | \$0.00 | \$4,270.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | Panelboard Design and Schedule | | 1 | 2 | 12 | | 15 | \$2,190.00 | | \$0.00 | \$2,190.00 |
| | Details | | 1 | 2 | 8 | | 11 | \$1,670.00 | | \$0.00 | \$1,670.00 |
| | Specifications | | 1 | 6 | | | 7 | \$1,450.00 | | \$0.00 | \$1,450.00 |
| | EOPCC (ACEC Class 3) | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | QA/QC | 2 | | | | | 2 | \$460.00 | | \$0.00 | \$460.00 |
| | Submittal Documents | | | 1 | 2 | 2 | 5 | \$675.00 | | \$0.00 | \$675.00 |
| | Team Discipline Discussions (progress,phone, email) | 1 | | 2 | | | 3 | \$640.00 | | \$0.00 | \$640.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | 90% Electrical Design | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | One Lines and Load & Fault Tables | | 1 | 1 | 2 | | 4 | \$685.00 | | \$0.00 | \$685.00 |
| | Site Plan, Ductbanks, Cable trays | | | 1 | 2 | | 3 | \$465.00 | | \$0.00 | \$465.00 |
| | Equipment Layouts, Power, Grounding Plan, Schematics | | 2 | 4 | 16 | | 22 | \$3,340.00 | | \$0.00 | \$3,340.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | Panelboard Design and Schedule | | | 1 | 4 | | 5 | \$725.00 | | \$0.00 | \$725.00 |
| | Details | | | 1 | 4 | | 5 | \$725.00 | | \$0.00 | \$725.00 |
| | Specifications | | 1 | 4 | | | 5 | \$1,040.00 | | \$0.00 | \$1,040.00 |
| | EOPCC (ACEC Class 2) | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | QA/QC | 1 | | | | | 1 | \$230.00 | | \$0.00 | \$230.00 |
| | Submittal Documents | | | 1 | 2 | 2 | 5 | \$675.00 | | \$0.00 | \$675.00 |
| | Team Discipline Discussions (progress,phone, email) | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | Final Electrical Design (100%) | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | One Lines and Load & Fault Tables | | | 1 | 1 | | 2 | \$335.00 | | \$0.00 | \$335.00 |
| | Site Plan, Ductbanks, Cable trays | | | 1 | 1 | | 2 | \$335.00 | | \$0.00 | \$335.00 |
| | Equipment Layouts, Power, Grounding Plan, Schematics | | | 2 | 8 | | 10 | \$1,450.00 | | \$0.00 | \$1,450.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | Panelboard Design and Schedule | | | 1 | 2 | | 3 | \$465.00 | | \$0.00 | \$465.00 |
| | Details | | | 1 | 2 | | 3 | \$465.00 | | \$0.00 | \$465.00 |
| | Specifications | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | EOPCC (ACEC Class 1) | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | QA/QC | 1 | | | | | 1 | \$230.00 | | \$0.00 | \$230.00 |
| | Submittal Documents | | | 1 | 2 | 2 | 5 | \$675.00 | | \$0.00 | \$675.00 |
| | Team Discipline Discussions (progress,phone, email) | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | Subtotal Hours | 6 | 19 | 65 | 113 | 9 | 212 | | | | |
| | Subtotal Cost | \$1,380 | \$4,180 | \$13,325 | \$14,690 | \$945 | | \$34,520 | | \$0 | \$34,520 |
| 4 | Task 4: Permitting | | | | | | | | | | |
| | Permit Set S&S (Electrical) | 1 | 1 | 1 | 2 | 2 | 7 | \$1,125.00 | | \$0.00 | \$1,125.00 |
| | Answer REI's (Electrical) | | 2 | 1 | | 1 | 4 | \$750.00 | | \$0.00 | \$750.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | Subtotal Hours | 1 | 3 | 2 | 2 | 3 | 11 | | | | |
| | Subtotal Cost | \$230 | \$660 | \$410 | \$260 | \$315 | | \$1,875 | | \$0 | \$1,875 |
| 5 | Task 5: Bidding Phase Services | | | | | | | | | | |
| | S&S IFB Drawings | | 2 | 4 | 8 | | 14 | \$2,300.00 | | \$0.00 | \$2,300.00 |
| | Final EOPCC | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | Contractor Questions | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | Issue Addenda | | 1 | 1 | 2 | | 4 | \$685.00 | | \$0.00 | \$685.00 |
| | Bid Evaluation, Tabulation, Recommendation Letter | | 1 | 2 | | | 3 | \$630.00 | | \$0.00 | \$630.00 |
| | | | | | | | 0 | \$0.00 | | \$0.00 | \$0.00 |
| | Subtotal Hours | 0 | 6 | 11 | 10 | 0 | 27 | | | | |
| | Subtotal Cost | \$0 | \$1,320 | \$2,255 | \$1,300 | \$0 | | \$4,875 | | \$0 | \$4,875 |
| | Total Hours & Budget | | | | | | 1687 | | | \$0 | \$368,010 |