

RESOLUTION NO. 2019-161R

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN MARCOS, TEXAS APPROVING AN ENGINEERING SERVICES AGREEMENT WITH THE LOWER COLORADO RIVER AUTHORITY (LCRA) FOR THE PROVISION OF ENGINEERING SERVICES IN CONNECTION WITH THE DESIGN AND CONSTRUCTION OF THE RATTLER SUBSTATION; AUTHORIZING THE CITY MANAGER OR HIS DESIGNEE TO EXECUTE THE AGREEMENT ON BEHALF OF THE CITY; AND DECLARING AN EFFECTIVE DATE.

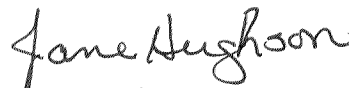
BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SAN MARCOS, TEXAS:

PART 1. The attached Engineering Services Agreement with LCRA is hereby approved.

PART 2. The City Manager or his designee is authorized to execute the Agreement on behalf of the City.

PART 3. This resolution shall be in full force and effect immediately from and after its passage.

ADOPTED on September 3, 2019.



Jane Hughson

Mayor

Attest:



Jamie Lee Case
City Clerk

**LCRA ENGINEERING
SERVICES CONTRACT**

CUSTOMER: The City of San Marcos
630 E. Hopkins
San Marcos, Tx 78666

PROJECT: Rattler Substation Addition - SMEU Low-Side

DATE SUBMITTED

July 16, 2019

Technical Services Agreement Date:

N/A

SCOPE OF SERVICES:

LCRA shall secure Engineering Services for the SMEU portion of the Rattler Substation Addition project according to the "LCRA Scope of Services" documented in Attachment 1 and "Statement of Work for Engineering Services" documented in Attachment 2 attached hereto and incorporated herein.

SCHEDULE:

Begins: Services will commence within 10 days after receipt of a signed contract.

Completion: See Schedule in "Statement of Work for Engineering Services" Attachment 2

ENGINEERING CONTRACT PRICE:

Estimated Cost: \$950,000.00

NOTE: Billing will be based on actual costs plus administrative adders ("Cost Plus" billing method).

This estimate is valid for 90 days from July 16, 2019.

Customer and the Lower Colorado River Authority agree that the work described above shall be performed in accordance with the terms and conditions on the front and reverse sides of this form.

The City of San Marcos

By: 

Bert Lumberras

Title: City Manager

Date: 09/09/19

Lower Colorado River Authority

By: 

Sergio Garza, P.E.

Title: V.P., Transmission Design & Protection

Date: 09/18/2019

OFFICE USE ONLY

Job Description: Eng. Services - Rattler Substation Addition

Account: ILCRA/TENCO/400302

LCRA Work Order: _____

Approved By: _____

Completion Date: _____

TERMS AND CONDITIONS

The Engineering Services Contract for the defined Scope of Services requested by the Customer is subject to the following terms and conditions:

1. The LCRA shall perform all engineering work defined in the Scope of Services under the supervision of a Texas licensed professional engineer and in accordance with applicable industry standards and the National Electric Safety Code.
2. Changes in Scope of Services may be made only by a written change order signed by representatives of Customer and the LCRA. Verbal change orders shall not be given nor accepted, except in case of an emergency which endangers people or property and such order shall be followed up with a written confirmation as soon as practicable.
3. If material is included in the Scope of Services, all material shall meet or exceed the minimum requirements of the applicable LCRA and RUS material specifications. The LCRA shall not be responsible for malfunctions of the material due to manufacturing defects, system disturbances, lightning, or other abnormal causes.
4. **THE TOTAL LIABILITY OF LCRA ARISING OUT OF THIS CONTRACT AND THE WORK PERFORMED HEREUNDER WILL NOT EXCEED AN AMOUNT EQUAL TO THE FEES PAID TO LCRA UNDER THIS CONTRACT, AND LCRA WILL NOT BE LIABLE FOR INDIRECT, PUNITIVE, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS. IN NO EVENT SHALL ANY OFFICER, DIRECTOR, EMPLOYEE OR AFFILIATE (OR AFFILIATE'S OFFICER, DIRECTOR OR EMPLOYEE) OF LCRA BE LIABLE TO CUSTOMER UNDER THIS CONTRACT, AND CUSTOMER'S SOLE RECOURSE UNDER THIS CONTRACT SHALL BE AGAINST LCRA AND NOT AGAINST SUCH OTHER PERSONS. THE LIMITATIONS ON LIABILITY AND REMEDIES IN THIS PARAGRAPH WILL APPLY REGARDLESS OF WHETHER THE LIABILITY OR CAUSE OF ACTION ARISES IN CONTRACT, WARRANTY, INDEMNITY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE. NOTHING IN THIS CONTRACT SHALL BE CONSTRUED TO WAIVE LCRA'S GOVERNMENTAL IMMUNITY.**
5. The LCRA shall invoice the Customer for the actual LCRA costs plus administrative adders in effect at the time of execution of this Contract. Customer by executing this Contract has agreed that the current administrative adders have been examined and accepted by the Customer. LCRA may invoice for progress payments for the services completed to date during the course of the work but invoices may be submitted no more frequently than monthly. The customer shall promptly pay the full invoiced amounts.
6. The term of this Contract shall be the duration of the work. The Contract may be terminated at any time by either party upon written notice to the other party. When the Contract is terminated by either party, the Customer shall pay for services rendered under this Contract up to the date of termination.
7. There are no third party beneficiaries to this Contract and the provisions of this Contract shall not create any legal or equitable right, remedy or claim enforceable by any person, firm, or organization other than the parties and their permitted successors and permitted assigns.
8. This Contract may not be assigned by either Party without the express written consent of the other Party.
9. (a). Labor and Services. LCRA shall perform all services in accordance with applicable and acceptable industry practice and in a good workmanlike manner, suitable for the proposed usage of any equipment installed or services performed and in full accordance with all installation instructions and requirements of the material manufacturer and supplier. Should any of the services of LCRA prove to be inadequate, inaccurate, or unsatisfactory through human error, omission, or otherwise, LCRA shall perform corrective services of the type originally undertaken. Corrective services required prior to acceptance of the work shall be performed by LCRA at LCRA's expense including the repair or replacement of equipment damaged by LCRA's actions. Corrective services required after acceptance of the work shall be performed by LCRA without charge to the Customer, provided the Customer requests corrective services in writing within one (1) year from the acceptance of the work. LCRA shall not be liable for labor costs to correct errors, omissions, or deficiencies after the expiration of one year from acceptance of the work.

(b). Manufacturer's Warranties. LCRA shall assign to Customer, as the end-user, any applicable material or supply warranties provided by the LCRA's vendors. All warranty documentation shall be furnished to the Customer before the project is accepted. LCRA will be fully responsible for any error, omission or deficiency in its work which reduces the validity of duration of any manufacturer's warranty.

(c). LCRA makes no representation, either express or implied, that the work performed pursuant to this Contract is compliant with the North American Electric Reliability Corporation ("NERC") Reliability Standards revised after the time the Contract was executed, as they may be amended or updated from time-to time. It shall be the sole responsibility of the Customer to assure that any work performed by LCRA will not result in being assessed fines and/or penalties, or being required to perform mitigation, or remediation of a NERC Reliability Standards violation. **COMPLIANCE-RELATED ACTIVITIES AND THE RETENTION OF OBJECTIVE EVIDENCE IS THE OBLIGATION OF THE CUSTOMER.**

(d). **OTHER THAN THE EXPRESS LIMITED WARRANTIES IN THIS PARAGRAPH 9, THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED. LCRA DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**
10. This Contract together with the Scope of Services and any attached Technical Services Agreement represents and contains the entire agreement and understanding between the LCRA and Customer with respect to the subject matter of this Contract and supersedes any and all prior or contemporaneous oral and/or written agreements and understandings regarding the defined scope of services. No representations, warranty, condition, understanding or agreement of any kind with respect to the subject matter of this Contract shall be relied upon by the LCRA and Customer unless incorporated into this Contract. This Contract may not be amended or modified except in writing and executed both by an authorized representative of the LCRA and by an authorized representative of the Customer.



ATTACHMENT 1

LCRA SCOPE OF SERVICES

San Marcos Electric Utility (SMEU)

Rattler Substation Addition – SMEU Low-Side

1. Safety:

LCRA places no business objective or priority above safety.

2. Project Background:

The Rattler Substation Addition project consists of building a new SMEU load-serving facility in Hays County.

SMEU's scope consists of:

- The installation of an indoor, medium voltage distribution switchgear and feeders
- The installation of a control house and 12.5 kV distribution equipment
- Grading of the substation property
- The installation of one 138/12.5kV 30MVA power transformer
- The installation of one 138-kV Circuit Breaker
- The installation of security fencing
- The installation of duct banks leaving western edge of property to connect with existing underground distribution infrastructure
- The installation of telecommunications for security
- The Installation of telecommunications for relaying
- The installation of telecommunications power supplies
- Easements, permits, etc. for use of the adjacent detention pond.

3. LCRA Description of Services:

At SMEU's request, LCRA will engage and secure the services of an Engineering Consultant to design SMEU's scope outlined in Section 2 of this document for the Rattler Substation Addition project. LCRA will own and manage the contract with the Engineering Consultant.

LCRA will also provide review services of the following engineering deliverables associated with SMEU's scope during the project design stage:

A. Electrical (10%) review of the following design submittals:

- Detailed Construction Document
- Initial one-line
- Ultimate one-line

- Initial layout in state plane coordinates showing locations of proposed section views
 - Ultimate layout
- B. Civil (10%) review of the following design submittals:
- Preliminary grading plan with erosion controls
 - Preliminary access road/entrance layout
 - Preliminary drainage plan with calculations
 - Preliminary substation fence/gates layout
 - Preliminary property fence/gates layout
- C. Electrical (60%) review of the following design submittals:
- 10% deliverables noted above
 - Project drawing list(s)
 - Partially completed material list (all major equipment and most, if not all, remaining material identified)
 - Substation section views
 - Substation grounding details
 - Equipment vendor drawings
- D. Structural (60%) review of the following design submittals:
- Footing layout
 - Structural detail sheet(s)
 - Footing detail sheet(s)
 - Structural steel shipping list(s)
 - Rebar cutsheet(s)
- E. Civil (60%) review of the following design submittals:
- Boring Logs Sheet(s)
 - Access Road/Entrance Layout
 - Grading Plan
 - Drainage Plan with calculations
 - Substation Fence/Gates layout
 - Property Fence/Gates layout
- F. Relay and Control (10%) review of the following design submittals:
- Detailed Construction Document
 - Relay one-lines
 - Control Enclosure Layout
 - AC/DC one-line
- G. Relay and Control (60%) review of the following design submittals:
- 10% deliverables noted above
 - Project drawing list(s)
 - Completed panel assembly drawings
 - Partially completed panel schematics (cable numbers can remain TBD at this level)
 - Partially completed panel wiring diagrams (cable numbers can remain TBD at this level)

- Partially completed manifold schematics (cable numbers can remain TBD at this level)
- Completed equipment vendor drawings
- H. Full Package (90%) review to include:
 - Full set of Electrical, Structural, Civil and R&C drawings.
 - Completed grounding study and static coverage analysis/study reports.
 - Overlay drawings of the initial layout, cable layout, and footing layout.
- I. Full Package (IFC Ready Set) review to include:
 - Full set of Electrical, Structural, Civil and R&C drawings addressing 90% comments (PDFs only).
 - Bid unit documentation.
- J. Full Package (IFC Deliverable) review to include:
 - Full sealed IFC set of Electrical, Structural, Civil and R&C drawings.
 - Full set of AutoCAD Electrical, Structural, Civil, and R&C drawing files.

4. Engineering Consultant Description of Services:

The Engineering Consultant described in Section 3 will perform the design and associated work for SMEU's scope of the Rattler Substation Addition project as defined in Attachment 2 (Statement of Work for Engineering Services).

5. Assumptions:

The following assumptions were made in the development of the scope of services and associated cost for this service:

- This scope of services is limited to Rattler Substation.
- All deliverables will be owned by SMEU.
- SMEU design inputs listed below will be required prior to the 60% review stage.
- SMEU will work directly with the City of San Marcos Development and Planning department and provide information to LCRA on building façade requirements.
- SMEU will interface with the City departments to ensure a suitable screening method that also meets the City's architectural requirements and will provide the requirements to LCRA.
- SMEU will furnish to LCRA the transformer design information necessary for design.
- SMEU will review and accept connection of storm water runoff to the neighboring detention pond.
- SMEU will review and accept connection to existing water and wastewater lines outside of the substation
- SMEU will review and accept control enclosure which includes:
 - Partition to separate medium voltage metalclad switchgear
 - Includes below grade cable vault
 - Includes HVAC system, fire alarm
- SMEU will review and accept indoor, medium voltage distribution switchgear and feeder design.

- SMEU will review and accept control enclosure and 12.5kV distribution equipment designs.
- SMEU will provide the switchgear specification to LCRA before the 10% design review stage.
- SMEU will retain:
 - Specification and procurement of the PWT
 - Specification of the 15kV metal clad switchgear
- SMEU will review and provide acceptance of numbering for SMEU owned equipment.
- SMEU will be responsible for the timely review and disposition of change orders.
- Conflicting or delayed comments on review deliverables may cause schedule or cost impacts.
- All written deliverable acceptance acknowledgements must be received by LCRA within the LCRA's review period as described in attachment 2.



Attachment 2

Statement of Work for Engineering Services

Project Name: Rattler Low Side Addition Order No. _____ Contract No. 4661

Representatives:

LCRA Project Manager	Brad Melnar Engineering Manager 3505 Montopolis Drive, Austin, Texas 78744 1-512-578-4518 Brad.Melnar@lcra.org
LCRA Project/Lead Engineer	Amanda Travieso, P.E. Engineering Supervisor 3505 Montopolis Drive, Austin, Texas 78744 1-512-578-4456 Amanda.Travieso@lcra.org
LCRA Lead Structural Engineer	Charles Wen, P.E. Engineering Supervisor 3505 Montopolis Drive, Austin, Texas 78744 1-512-578-4506 Charles.Wen@lcra.org
LCRA Agent	Ashlee Nelson Category Buyer 3700 Lake Austin Blvd, Austin, Texas 78703 1-512-578-4186 Ashlee.Nelson@lcra.org
LCRA Project Inspector	Casey Neels Engineering Analyst 3505 Montopolis Drive, Austin, Texas 78744 1-512-578-4467 Casey.Neels@lcra.org
Professional	Stanley Consultants, Inc. Steve Holton Business Development Manager 6836 Austin Center Blvd., Suite 350 Austin, TX 78731 512-427-3654 holtonsteve@stanleygroup.com

1. Safety:

LCRA Transmission Services Corporation places no business objective or priority above safety. We require safe designs in seeking engineering services. If, during the course of engineering design, you encounter safety concerns, those concerns should be brought to our attention immediately.

2. Project Background:

This project consists of building a new substation for San Marcos Electric Utilities including grading, ground grid, property acquisition, and fence. The project will also include the installation of one PWT and associated switchgear.

Attachment 2

Statement of Work for Engineering Services

Project Name: Rattler Low Side Addition Order No. _____ Contract No. 4661

This project requires SMEU's acquisition of real estate, purchase of major equipment, long-lead type materials, coordination of outages with ERCOT and thus the Engineering phase of this project must be completed by 11/07/2019 so that that the project's objective can be successfully achieved.

3. Description of Deliverables:

- A. All deliverables will be owned by SMEU.
- B. A copy set (AutoCAD files & PDF) of signed and sealed physical "Issued For Construction" prints.
- C. A complete and comprehensive list of physical materials.
- D. A copy set (AutoCAD files & PDF) of signed and sealed structural "Issued For Construction" prints.
- E. A complete and comprehensive list of structural materials (Shipping List, Material List, and Material Order Sheet). (MS Excel worksheet)
- F. A copy set (AutoCAD files, Civil 3D, HEC-HMS, HEC-RAS files & PDF) of signed and sealed Civil "Issued for Construction" prints.
- G. Provide AutoCAD drawing of Grading Plan with grid lines and points at all intersections and a .txt file with all construction point information in accordance with drawing deliverable guide.
- H. A copy set (AutoCAD files & PDF) of signed and sealed Relay and Control "Issued For Construction" prints.
- I. A complete and comprehensive list of Relay and Control materials.
- J. A complete set of 3D finite element structural models in latest version of PLS Tower as necessary.
- K. A copy set of PLS-Caisson and/or FAD Tools files for foundation calculations.
- L. A copy set of signed and sealed geotechnical report of the site. (PDF)
- M. Signed and sealed Level B survey data including topography and existing subsurface utility data (SUE).
- N. A complete signed and sealed structural calculations report. (PDF)
- O. A complete signed and sealed drainage calculation report. (PDF)
- P. Provide a revision to the drawing package, if required, to incorporate certified vendor drawings.
- Q. A complete bid unit spreadsheet (template will be provided to Professional) referencing bid unit callouts on IFC drawing packages.
- R. An engineering construction estimate of this SOW
- S. Electrical (10%) Review and Acceptance – the following minimum submittals are required before proceeding with preparation of complete S/E package
 - Detailed Construction Document
 - Initial one-line
 - Ultimate one-line
 - Initial layout in state plane coordinates showing locations of proposed section views
 - Ultimate layout
- T. Civil (10%) Review and Acceptance – the following minimum submittals are required before proceeding with preparation of complete S/E package



Attachment 2

Statement of Work for Engineering Services

Project Name: Rattler Low Side Addition Order No. _____ Contract No. 4661

- Preliminary grading plan with erosion controls
 - Preliminary access road/entrance layout
 - Preliminary drainage plan with calculations
 - Preliminary substation fence/gates layout
 - Preliminary property fence/gates layout
- U. Electrical (60%) Review and Acceptance – the following minimum submittals are required before proceeding with preparation of complete S/E package
- 10% deliverables noted above
 - Project drawing list(s)
 - Partially completed material list (all major equipment and most, if not all, remaining material identified)
 - Substation section views
 - Substation grounding details
 - Equipment vendor drawings
- V. Structural (60%) Review and Acceptance – the following minimum submittals are required before proceeding with preparation of complete S/E package (PDFs only)
- Footing layout
 - Structural detail sheet(s)
 - Footing detail sheet(s)
 - Structural steel shipping list(s)
 - Rebar cutsheet(s)
- W. Civil (60%) Review and Acceptance – the following minimum submittals are required before proceeding with preparation of complete Civil package (PDFs only)
- Boring Logs Sheet(s)
 - Access Road/Entrance Layout
 - Grading Plan
 - Drainage Plan with calculations
 - Substation Fence/Gates layout
 - Property Fence/Gates layout
- X. Relay and Control (10%) Review and Acceptance – the following minimum submittals are required before proceeding with preparation of complete R/C package
- Detailed Construction Document
 - Relay one-lines
 - Control Enclosure Layout
 - AC/DC one-line
- Y. Relay and Control (60%) Review and Acceptance – the following minimum submittals are required before proceeding with preparation of complete R/C package
- 10% deliverables noted above
 - Project drawing list(s)
 - Completed panel assembly drawings
 - Partially completed panel schematics (cable numbers can remain TBD at this level)
 - Partially completed panel wiring diagrams (cable numbers can remain TBD at this level)



Attachment 2

Statement of Work for Engineering Services

Project Name: Rattler Low Side Addition Order No. _____ Contract No. 4661

- Partially completed manifold schematics (cable numbers can remain TBD at this level)
 - Completed equipment vendor drawings
- Z. Full Package (90%) Review and Acceptance
Review of full set of Electrical, Structural, Civil and R&C drawings (PDFs only). 90% Deliverables shall include completed grounding study and static coverage analysis/study reports in PDF format. Deliverables shall also include an overlay drawing of the initial layout, cable layout, and footing layout, and an Excel file version of the drawing list.
- AA. Full Package (IFC Ready Set) Review and Acceptance
Review of full set of Electrical, Structural, Civil and R&C drawings addressing 90% comments (PDFs only). Submit bid unit documentation for review.
- BB. Full Package (IFC Deliverable) Review and Acceptance
Full sealed IFC set of Electrical, Structural, Civil and R&C drawings (PDFs only)
Full set of AutoCAD Electrical, Structural, Civil, and R&C drawing files.
- CC. Throughout the project the Professional is required to deliver a monthly report to the **LCRA Lead Engineer** and **Agent** that includes but is not limited to:
- i. Narrative (to be provided in MS Word)
 - 1. Risks / Issues / Resolution (proposed)
 - 2. Schedule update and milestone status
 - ii. Budget Status (to be provided in MS Excel)
 - 1. Report period
 - 2. Project name
 - 3. Task description
 - 4. Labor category assigned to task
 - 5. Hours expended (Period)
 - 6. Hours expended (Total to Date)
 - 7. Hours budgeted
 - 8. Billing rate for labor category (actual or calculated from presented information)
 - 9. Percent of Task Complete
 - 10. Estimated hours needed to complete task (actual or calculated from presented information)
 - 11. Projected variance from budget (hours and dollars) (actual or calculated from presented information)
- DD. Drafted AutoCAD files capturing As-Built markups.

4. Constraints:

The following is the known list of constraints associated with this project:

- A. Certified vendor drawings for the major equipment will likely not be available until the later phases of design as noted in the Schedule section.
- B. Coordinated Outages/clearance
 - i. Clearance dates
 - ii. Holds setup
 - iii. Outages setup
- C. Clearing activities
- D. Real Estate/Civil

Attachment 2

Statement of Work for Engineering Services

Project Name: Rattler Low Side Addition Order No. _____ Contract No. 4661

- i. Survey work to be scheduled
- ii. Site access for geotechnical studies
- iii. Land acquisition
- iv. Rezoning (Jurisdiction)
- v. Permit acquisition (as applicable)

5. Description of Services:

The Professional shall perform the following services:

- A. Provide design review of the medium voltage metal clad switchgear.
- B. Provide design submittals referenced in section 3 to LCRA for review and approval by SMEU.
- C. Geotechnical report complete with soil boring logs and soil electrical resistivity testing. Provide geotechnical report in PDF format.
- D. Perform a grounding study (for design of the substation grounding system) and provide results of the study in a report and summary table on the grounding layout drawing to be included in the final deliverables. The study shall identify touch and step potentials with and without top layer surface shock rock. When performing a no top layer study, areas with touch and step potentials that exceed safety limits will need to be identified. A filter will need to show only those areas that are out of tolerance. Areas out of tolerance will need to be shown as a layer on the grounding layout.
- E. Perform static coverage analysis (for protection of bus and major equipment from lightning) and provide static coverage area(s) on a separate AutoCAD layer in the substation layout drawing(s) to be included in the final deliverables.
- F. Professional shall participate in a conference call for project kickoff and no more than eight (8) additional one-hour long conference calls for status updates as-needed.
- G. Professional shall coordinate engineering activities with other entities.
- H. Provide construction support during construction phase(s) of the project including but not limited to participation (via teleconference) at the Pre-Construction meeting and responding to requests for information from construction crews.
- I. Provide as-built field investigation and documentation after the construction phase(s) of the project.
- J. Provide monthly financial forecast to completion in Excel format.
- K. Provide support during construction phase activities including:
 - a. Pre-Construction Activities
 - i. Bidding Support – Provide assistance when construction bidders have questions related to the design and the bid units assembled.
 - ii. Pre-Construction Meeting – Attendance at the pre-construction meeting is required. Attendance via teleconference is acceptable.
 - b. Construction Activities
 - i. Submittals – Contractor material submittals shall be returned within a reasonable time required by the constructor.
 - ii. Requests for Information – Requests for information from field crews including requests for clarifications and substitutions must be completed by the date indicated on the request. When substitution are required, the scope and scale may necessitate additional analysis and an update of design documentation.
 - iii. Change Order Requests – Engineering input regarding the validity and value estimation of a change order may be required.



Attachment 2

Statement of Work for Engineering Services

Project Name: Rattler Low Side Addition Order No. _____ Contract No. 4661

- iv. Bi-Weekly Project Meeting – Attendance at a bi-weekly project meeting is required.
- v. Drawing Updates – Changes to the configuration as required during the construction phase will be supported by updated drawings.
- c. Post-Construction Activities
 - i. A Final Completion Certificate is required for every project. These documents require engineering signatures.
 - ii. Final Walkthrough – Your attendance at the project final walkthrough is required. The scheduling of this event will be discussed at the pre-construction meeting and will be further refined throughout the construction phase during Bi-Weekly Project Meetings.

SUBSTATION DESIGN:

Electrical and Structural Design: Rattler Low Side Substation	
Electrical:	<ul style="list-style-type: none"> a) Design 138kV relaying and metering panels b) Design indoor, medium voltage distribution switchgear and feeders c) Design control enclosure and 12.5kV distribution equipment d) Design of AC and DC control power systems, with automatic transfer switches. e) Design lighting and security equipment (entry control and PTZ's both indoor and outdoor) f) Design medium voltage cabling or non-segregated bus from SMEU transformers to the medium voltage section of the control enclosure g) Design connections to LCRA TSC ring bus and transformer high side breaker, metering, and relaying h) Design duct banks leaving western edge of property to connect with existing underground distribution infrastructure i) Design cable trenches and/or duct banks within the substation and from the SMEU medium voltage control building to the existing underground system outside the substation. j) Design of ground grid and grounding system.
Structural/Civil:	<ul style="list-style-type: none"> a) Design site grading b) Design exterior fencing c) Design connection of storm water runoff to the neighboring detention pond. d) Design connection to existing water and wastewater lines outside of the substation. e) Design control enclosure <ul style="list-style-type: none"> a. Partitioned to separate medium voltage metalclad switchgear b. Includes below grade cable vault and cable tray systems c. Includes HVAC system d. Includes fire detection and alarm system f) Concrete slabs and foundations for equipment, support structures, and the control enclosure g) Design transformer pad and moat
Relay and Control Design: Rattler Substation	
Relaying:	<ul style="list-style-type: none"> a) Provide relay coordination settings for SMEU relaying to include XFMR primary and secondary differential, XFMR overcurrent and neutral



Attachment 2
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	protection, medium voltage switchgear differential and overcurrent relaying, and feeder protection
Metering:	a) Provide XFMR primary, XFMR secondary, and feeder metering
SCADA:	a) Provide connections for each IED to SEL RTACs as well as programming and mapping for connection to existing SCADA systems
Telecomm:	a) Provide for incoming SMEU telecom for SCADA system connectivity and security monitoring.

6. Professional's Key Person(s):

The following individuals are identified as Key Personnel for the delivery of services herein and cannot be changed without prior written authorization from LCRA:

- Principal Engineer/PM – Eli Eroles, P.E.
- Principal Engineer/PM – Ernie Leaf, P.E.
- Principal Engineer – Josh Jackson, P.E.
- Principal Engineer – Jacob Anderson, P.E.
- Principal Engineer – Jaime Guzman, P.E.
- Sr. Engineer– Dewayne Lawrence, P.E.
- Sr. Engineer Associate – Roy Perez, EIT
- Engineer – Cong Huynh, P.E.

7. Assumptions:

- Proposal is based on existing standards provided to date. Any revisions to the provided standards will require a change in fee and/or schedule.
- Pricing is based on the proposed schedule submitted with this scope of work.
- Shielding analysis will be performed by the direct angle method.
- Designs for phased construction or temporary configurations are not included but can be performed as an additional service.
- Proposal assumes that there are no large metallic objects adjacent to or below substation site that need to be considered in the grounding design. Analysis for adjacent or buried metallic structures or below grade obstructions on the property are not included but can be performed as an additional service.
- RISA models will be provided for all new substation structures added as part of this design.
- LCRA to provide any existing or preliminary design calculations for reference.
- Implementation of design changes from other projects are not included. Any additional changes can be implemented as an additional service.
- Comments on each deliverable will be received in one submittal per the schedule. Contradictory or delayed comments may cause cost and schedule impacts.
- As-builts for each discipline will be provided based on receiving a complete and legible set of redlines after construction. One site visit by Stanley is included to verify redlines and resolve any discrepancies. Wire tracing is not included. As-builts will be provided for the scope of this project only. Additional as-built scope can be performed as an additional service.
- Up to 12 hrs. of Construction support and one site visit per discipline are included in this proposal. Additional support can be provided as an additional service.

Attachment 2

Statement of Work for Engineering Services

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- Requested information, drawings or Vendor data will be provided in a timely manner to meet proposed schedule.
- A minimum of ten (10) working days shall be allowed for approval of construction material submittals. Submittals shall clearly denote quantity, part number (including any optional designations) and corresponding bid unit or AKIND number as required in drawings or specifications.
- A minimum of three (3) working days shall be allowed to address requests for information, clarification or substitution from construction. When substitutions are approved by the engineer of record, the scope and scale may necessitate additional analysis and an update of design documentation. This additional analysis and design documentation may cause cost and schedule impacts.
- Stanley Consultants is committed to addressing all material submittals and requests for information as quickly as possible.
- Sixty (60) hours of permitting support with local jurisdictions is included with this proposal.
- Proposal is based on LCRA responses to RFIs received on 06/03/2019.
- Arc flash for both AC and DC systems within the SMEU control house are included in the scope of work.
- The SMEU Milsoft file will be updated to include the substation, up to the high side of the substation transformers. The SMEU control house switchgear will be designed using ETAP software.
- Proposal is based on the SMEU control enclosure being a single-story CMU structure with outside dimensions of approximately 135'x45'. At grade, the enclosure will consist of the following rooms: a switchgear room, a relay room, a battery room and a toilet. A DX or similar HVAC system will be included in the design. The enclosure will also include a below grade cable vault, to facilitate cable installation to the switchgear lineups. Portions of the enclosure facing outside the station will be designed with aesthetic features and will be coordinated with the fencing and landscaping designs.
- Switchgear design will be based on SEL relays. Relay testing will be by 3rd party testing firm.
- Factory Acceptance Testing (FAT) for the switchgear and substation transformers is included for within the continental United States.
- Lightning protection will be provided for the SMEU control enclosure.
- Subsurface Utility Engineering (SUE) report will be provided for existing utilities near the site. It is assumed that the site is a greenfield site and there are no utilities within the site that will need to be investigated or be relocated. SUE report will be to coordinate existing utilities with new duct banks and to coordinate water and wastewater service to the substation.
- Proposal includes 20 hours for coordination with Stantec and basic drainage calculations.
- Proposal does not include hours for detention pond design or improvements.
- Proposal assumes no existing utilities on site that will require relocations.
- Proposal includes 20 hours for permitting and support including SWPPP.

The following services and/or information will be provided to the Professional:

- A. Specification for the 15kV metal clad switch gear.
- B. Specification for the PWT.
- C. Conceptual one-line and initial layouts to be fully developed by the professional during design.
- D. Vendor drawings of major equipment (air-break switches, EHV circuit breakers, instrument transformers and autotransformers)



Attachment 2 Statement of Work for Engineering Services

Project Name: Rattler Low Side Addition Order No. _____ Contract No. 4661

- E. "Go-by" drawings of major equipment (air-break switches, EHV circuit breakers, instrument transformers and autotransformers) prior to the availability of certified vendor drawings.
- F. Major equipment number identification.

8. Schedule:

****this is a proposed schedule, final schedule to be confirmed at kick off meeting****

Task Name	Duration	Start	Finish
RATTLER LV	121 days	Fri 6/28/19	Fri 12/13/19
Project Award and NTP	1 day	Fri 6/28/19	Fri 6/28/19
Kick Off Meeting	1 day	Mon 7/1/19	Mon 7/1/19
Create CDD	5 days	Tue 7/2/19	Mon 7/8/19
LCRA Internal CDD Review	5 days	Tue 7/9/19	Mon 7/15/19
CDD Review Meeting	0 days	Mon 7/15/19	Mon 7/15/19
10% Design	5 days	Tue 7/16/19	Mon 7/22/19
Submit 10% Package	0.5 days	Fri 7/26/19	Fri 7/26/19
LCRA Review of 10% Package	10 days	Fri 7/26/19	Fri 8/9/19
10% Comments Received	0 days	Fri 8/9/19	Fri 8/9/19
10% Review Meeting	0 days	Fri 8/9/19	Fri 8/9/19
60% Design	10 days	Fri 7/26/19	Fri 8/9/19
Submit 60% Package	1 day	Wed 8/21/19	Thu 8/22/19
LCRA Review of 60% Package	10 days	Thu 8/22/19	Thu 9/5/19
60% Comments Received	0 days	Thu 9/5/19	Thu 9/5/19
60% Review Meeting	0 days	Thu 9/5/19	Thu 9/5/19
90% Design	10 days	Thu 9/5/19	Thu 9/19/19
Submit 90% Package	1 day	Thu 10/3/19	Fri 10/4/19
LCRA Review of 90% Package	5 days	Fri 10/4/19	Fri 10/11/19
90% Comments Received	0 days	Fri 10/11/19	Fri 10/11/19
90% Review Meeting	0 days	Fri 10/11/19	Fri 10/11/19
Pre-IFC Design	5 days	Fri 10/11/19	Fri 10/18/19
Submit Pre-IFC Package	1 day	Thu 10/24/19	Thu 10/24/19
LCRA Review of Pre-IFC Package	5 days	Fri 10/25/19	Thu 10/31/19
Issue IFC	5 days	Fri 11/1/19	Thu 11/7/19