Appendix A – Technical Specifications

Engineering Services for the Nocatee 230/26kV Substation

1. Scope of Work
   1.1. Provide civil and electrical engineering services for the Nocatee 230/26kV Substation.

2. Project Background and Description
   2.1. The Nocatee substation site is located in the northeast quadrant of the intersection of Philips Highway and Racetrack Road. Electric demand in this area continues to increase due to major ongoing development in Nocatee, Bartram Springs, and Aberdeen. In addition, Gate has begun development of a new Town center project along Racetrack Road. This new Town center will be 50 percent larger than the St Johns Town center. Electric demand on circuits serving this area has been increasing. Some load shifting will be done in the next year to provide short-term relief, but as the Gate development progresses, load on these circuit will again increase to problematic levels.

   Electric demand in the Southeast part of JEA's service territory has steadily increased over the last 5 years. Ongoing development within the Nocatee DRI along with newly announced development by Gate along Racetrack Road will result in N-1 violations for loss of Bartram Circuit 299 or loss of Greenland Circuit 210 in the near future. This project will provide load relief for these two circuits, and provide N-1 tie-out solutions for loss of Bartram Circuit 299 or Greenland Circuit 210. The project's in-service date is 11/30/2020.

   2.2. This substation will be provisioned for two (2) power transformers, six (6) distribution feeders and two (2) capacitor banks; one (1) power transformer, three (3) distribution feeders and one (1) cap bank will be installed initially, while the other power transformer, remaining three (3) distribution feeders and second cap bank will be installed at a future date.

      2.2.1. The high side of the substation will be a sectionalized single bus.

      2.2.2. The low side of the substation will consist of a 26kV bus system to accommodate two (2) Power Transformers with four (4) 1200 Amp feeder breakers for each transformer and associated Main and Transfer bus switching per typical JEA Distribution Substation Design Practices. Power transformers shall be 30/40/50MVA rated. For this project, provisions should be made to include both power transformers and low side bus-work. However, only the T1 transformer and low side feeders will be installed initially. The T2 transformer and associated low side distribution will be future installations.

      2.2.3. Substation design will include feeder manhole and conduit system (Each two 6" conduits from distribution feeder 236, 237, and 238 to first manhole outside substation fence). Substation engineer to coordinate with JEA distribution engineer on placement of conduits and manholes from feeders to point outside substation fence. Distribution Engineer to take over all feeder work from this coordinated point.

3. Engineering Scope of Work

3.1. The Engineering scope of work includes the pursuit of all surveys, site design, foundation design, electrical design, grounding design, and permitting related to the Nocatee Substation. The substation shall be located on real property owned by JEA is located on real property owned by JEA in the northeast quadrant of the intersection of Philips Highway and Racetrack Road.

3.2. Although the current project single-line diagram is "preliminary", Bidders should prepare their Bids on the Scope outlined in this Solicitation. Bidders shall specify number of hours and hourly rates needed to perform the detailed Task Plan below as separate line items for Project Executive, Project Manager, Senior Engineer, Junior Engineer, Field Support Engineer, Control Manager, and Clerical Support.

3.3. In addition to hours spent to execute the detailed Task Plan as shown in Section 7 below, the Bidder shall also provide, as a separate line item, hourly rates for all the expected staff to attend meetings, teleconferences, and site visits with JEA.

3.4. Bidder should have ability of producing all electronic engineering drawings in Bentley MicroStation V8 format. Furthermore, the Bidder shall also have the ability to modify Raster drawings in MicroStation V8 software.

4. Task Plan

4.1. Task 1 – Obtain Surveys

4.1.1. Topographical Survey

4.1.2. Tree Survey

4.1.3. Wetland Survey

4.1.4. Improvement Survey

4.1.5. Underground facility locates

4.1.6. Any other surveys the Bidder deems necessary to complete all tasks.

4.2. Task 2 – Determine and obtain necessary permits.

4.2.1. Environmental permits: (SJRWMD, CEO, and FDEP) State and federal including wetland permitting, storm water discharge, hydrological study, protected species (gopher tortoise, birds, etc.) identification, and others as required.

4.2.2. City of Jacksonville: 10 set drawing review and approval, landscape/irrigation, tree clearing, tree removal, tree mitigation, maintenance of traffic and others as required.

4.2.3. Duval County Health Permits: Drain field and septic tank, well construction and well limited use water permits and others as required.

4.2.4. State of Florida permits: Onsite sewage treatment and disposal system septic tank and construction permit and others as required.

4.2.5. Storm water management control permits.

4.3. Task 3 – Soil Boring Data

4.3.1. Bidder to acquire soil borings needed for future foundation and ground grid design. All borings per ASTM D-1586, shall be 50 feet deep with SPT's at three (3) foot

intervals. Note elevation of ground water at time of boring. Soil resistivity shall be measured for all borings at two (2) and twenty (20) foot depths. Also provide recommendations for maximum soil bearing capability.

4.4. Task 4 – General Arrangement

4.4.1. Design the general arrangement of the substation after consulting with the JEA Transmission Engineering and Distribution Engineering departments. Design shall be coordinated with structures provided by JEA's Substation Material Packager.

4.4.2. The design shall include, but not be limited to, the following: bus layout, switch locations, circuit breaker locations, transformer locations, control house, substation fence, proposed drain field and retention pond, roads, confinement system, etc.

4.5. Task 5 – Site Development

4.5.1. Bidder will design the transmission patrol road as well as all substation site clearing, grading, pavement (including the substation rock yard), fencing, drainage (including retention pond if necessary), primary and secondary oil containment, landscape and irrigation plans, etc.

4.6. Task 6 – Foundation Design

4.6.1. The Bidder will design all foundations in the substation.

4.7. Task 7 – Detailed Electrical Design

4.7.1. The Bidder shall perform short circuit analysis to verify bus support, spacing and insulator selection.

4.7.2. The Bidder shall design the lightning protection for the substation.

4.7.3. The Bidder shall design station service to include transformers, transfer switch, metering, and low voltage AC circuits for the substation yard and control house.

4.7.4. The Bidder shall design perimeter street lighting and structure area lighting and entrance gate after consulting with the JEA Security.

4.8. Task 8 – Grounding Design

4.8.1. The Bidder shall perform the grounding study and design. Grounding details shall be included.

4.9. Task 9 – Conduit Design

4.9.1. The Bidder shall design the conduit system for all equipment, fiber, and 26kV distribution within the substation property. The design shall include the use of cable trench and entrance into the control house. The Bidder will provide the final cable and conduit schedule.

4.10. Task 10 – Control House

4.10.1. The Bidder shall modify JEA's standard control house design for use in the proposed substation.

4.11. Task 11 – Develop Engineering Specifications

4.11.1. The Bidder shall work with the JEA project manager to create a "Civil Specification." JEA's general Civil Specification template will be modified by the project manager with input and comments from the Bidder to reflect the unique conditions of the substation.

4.11.2. The Bidder shall work with the JEA Project Manager to create an "Electrical Specification." JEA's general Electrical Specification template will be modified by the Project Manager with input and comments from the Bidder to reflect the unique conditions of the substation.

4.11.3. The Bidder shall work with the JEA project manager to create a "Specific Instructions." JEA's general Specific Instruction template will be modified by the Bidder to reflect the unique conditions of the substation and confirmed by the project manager.

4.12. Task 12 – Engineering Assistance During Construction

4.12.1. The Bidder will provide engineering assistance during the construction of the project on an as-requested basis attending pre-construction meetings with relay technicians and be available to resolve any field issues.

4.12.2. This task shall be listed as a separate line item for each Bid response. This line item shall not be a lump sum amount but shall be used on an as needed basis during the construction phase of this project. The Bidder shall quote minimum of fifty (50) hours.

4.13. Task 13 - Engineering Drawings

4.13.1. The following is a list of drawings that the Bidder will need to provide. All drawings shall be placed in JEA Construction Title Blocks, specifically, those containing the "BORDER" cell, used for batch printing. The use of reference files are recommended to avoid widespread conflicts due to changes that may arise during submittal reviews and other means, but final electronic submittals shall be self-contained with all references deleted. Note that the list below is not intended to be complete:

4.13.1.1. Cover Sheet
4.13.1.2. General Notes
4.13.1.3. General Arrangement
4.13.1.4. Site Plan and Details
4.13.1.5. Temporary Security Plan
4.13.1.6. Clearing Plan
4.13.1.7. Grading and Drainage - Plan and Details
4.13.1.8. MOT Plan and Access
4.13.1.9. Driveways and Rocking - Plan and Details
4.13.1.10. Water and Sewer - Plan and Details
4.13.1.11. Landscaping - Plan and Details
4.13.1.12. Sodding - Plan and Details
4.13.1.13. Irrigation - Plan and Details
4.13.1.14. Foundation - Plan and Details

4.13.1.15. Erosion Prevention Plan
4.13.1.16. Fencing - Plan and Details
4.13.1.17. Electrical Layout - Plan and Details
4.13.1.18. Foundation - Plan and Details
4.13.1.19. Control House - Plan and Details
4.13.1.20. Grounding - Plan and Details
4.13.1.21. Conduit - Plan and Details
4.13.1.22. Station Service and Electrical Panels

5. Deliverables

5.1. Complete set of civil and electrical drawings for construction.

5.1.1. Provide hard copies as follows: Four (4) sets of 24" x 36" and two (2) sets of 11" x 17" drawings.

5.1.2. Provide electronic files in MicroStation V8 as specified above. Provide PDFs scalable to 11" x 17" as well as 24" x 36" including a combined PDF of the drawing set.

5.1.3. Provide as-built drawing set (hard copy and digital as directed by JEA Project Manager) per field mark-ups.

5.2. Electronic file of all surveys specified in Task 1 in PDF and MicroStation V8.

5.3. Electronic file of detailed soil boring finding report.

5.4. Electronic file of foundation, grounding, low voltage, and all other applicable calculations.

5.5. Completed permits as specified in Task 2.

6. Engineering Review and Schedule Requirements

6.1. Bidder shall submit 10%, 30%, 60%, 90%, and 100% design documents and drawings as shown in Table 1 below. The milestone schedule will be refined and finalized during the first few initial design meetings/teleconferences:

Milestone	**~Due Date**	**Design Documents to be Submitted for Review (not all inclusive)**
10%	3/15/2019	General Arrangement
30%	4/30/2019	Single Line Diagram, Temporary Security Plan, Clearing Plan, Grading and Drainage - Plan and Details, Electrical Layout – Plan and Elevation, Grounding – Plan and Details
60%	TBD	Driveways and Rocking - Plan and Details, Water and Sewer – Plan and Details.
90%	TBD	Landscaping – Plan and Details, Sodding – Plan and Details, Irrigation – Plan and Details, Foundation – Plan and Details, Erosion Prevention Plan
100%	8/30/2019	Final construction package to include all project drawings, specifications, calculations, etc.

Appendix B Minimum Qualification Form
031-19 Engineering Services for the Nocatee 230/26kV Substation

THE MINIMUM QUALIFICATIONS SHALL BE SUBMITTED ON THIS FORM. IN ORDER TO BE CONSIDERED A QUALIFIED PROPOSER BY JEA YOU MUST MEET THE MINIMUM QUALIFICATIONS LISTED BELOW, AND BE ABLE TO PROVIDE ALL THE SERVICES LISTED IN THIS SOLICITATION.

THE PROPOSER MUST COMPLETE THE PROPOSER INFORMATION SECTION BELOW AND PROVIDE ANY OTHER INFORMATION OR REFERENCE REQUESTED. THE BIDDER MUST ALSO PROVIDE ANY ATTACHMENTS REQUESTED WITH THIS MINIMUM QUALIFICATIONS FORM.

PLEASE SUBMIT THE ORIGINAL AND THREE (3) COPIES OF THIS FORM AND ANY REQUESTED ADDITIONAL DOCUMENTATION WITH THE BID SUBMISSION.

PROPOSER INFORMATION

COMPANY NAME:_____

BUSINESS ADDRESS:_____

TELEPHONE:_____

E-MAIL:_____

PRINT NAME OF AUTHORIZED REPRESENTATIVE:_____

SIGNATURE OF AUTHORIZED REPRESENTATIVE:_____

NAME AND TITLE OF AUTHORIZED REPRESENTATIVE:_____

MINIMUM QUALIFICATIONS:

(a) Company must have successfully completed at least two (2) similar projects within the last five (5) years, ending January 1, 2019, that demonstrate experience in planning, design, and post design services for electric substation facilities.

To demonstrate the required experience, the similar projects completed must include work that meets all of the requirements listed below. **More than two (2) projects can be submitted to meet these requirements.**

- Substation above 26kV with a minimum of three (3) distribution feeders.
- Substation consisting of a least one (1) power transformer and/or auto transformer with at least a 30 MVA base rating.
- Installation of a new substation or rehabilitation of an old substation where the Company was responsible for the design of civil site work including drainage design, state and local permitting, and structural foundation designs; the design of a control house, and the design of all other electric facilities within the site where the Company performed at least eighty percent (80%) of the total design package (for construction) with its own employees.

- As a part of the minimum qualification submittal, the Proposer shall submit General Arrangement Drawings in 11X17.

Appendix B Minimum Qualification Form
031-19 Engineering Services for the Nocatee 230/26kV Substation

REFERENCE ___ of ____

Customer Name _____

Customer Adderss _____

Reference Name_____

Reference Phone Number_____

Reference E-Mail Address_____

Contract Year/Amount _____

Description of Contract_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

COMPANY INFORMATION:

COMPANY NAME:_____

BUSINESS ADDRESS:_____

CITY, STATE, ZIP CODE:_____

TELEPHONE:_____

FAX:_____

EMAIL OF CONTACT:_____

PROJECT MANAGER PROXIMITY

In order to receive points for this criterion, Company's office must be occupied and staffed with at least three (3) employees for a duration of six (6) months prior to the Proposal Due Date stated in the RFP.

Check the box to confirm Company meets criterion □ YES □ NO

The Company shall submit one (1) original Proposal, three (3) duplicates (hardcopies), and four (4) CDs or USB drives. If there is a discrepancy between the electronic copy and hard copy, the hard copy will prevail. JEA will not accept Proposals transmitted via email.

Company's Certification

By submitting this Proposal, the Proposer certifies that it has read and reviewed all of the documents pertaining to this RFP and agrees to abide by the terms and conditions set forth therein, that the person signing below is an authorized representative of the company, that the company is legally authorized to do business in the State of Florida, and that the company maintains in active status an appropriate license for the work. The company certifies that its recent, current, and projected workload will not interfere with the company's ability to Work in a professional, diligent and timely manner.

The Proposer certifies, under penalty of perjury, that it holds all licenses, permits, certifications, insurances, bonds, and other credentials required by law, contract or practice to perform the Work. The Proposer also certifies that, upon the prospect of any change in the status of applicable licenses, permits, certifications, insurances, bonds or other credentials, the Company shall immediately notify JEA of status change.

We have received addenda _____through_____

_____ _____

Signature of Authorize Officer of Company or Agent Date

_____ _____

Printed Name & Title Phone Number