084-19 Appendix A Technical Specifications

Installation of Transmission Circuits 937/955 Dinsmore Substation Interconnect

March 6th, 2019

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1. GENERAL:

1.1 General Description: Set five (5) spun concrete transmission poles. Run new 1590 ACSR "Falcon" conductors and 3#6 AW shield wire. Re-frame existing steel transmission structure. Transfer existing conductors / shield wire and install all insulators / hardware as indicated on these technical specifications/construction drawings.

1.2 Intent: The Contractor shall provide all equipment, labor and supervision to accomplish the work as specified herein and on the construction plans. The source of the JEA supplied materials to accomplish the work of this project is specified herein and on the construction plans. The contractor should take note that, while the actual delivery dates of these items are not precisely known at this time, the schedule provided is synchronized with the expected delivery schedule for certain materials, equipment, etc. The contractor is responsible under this contract to pick up, inspect, receive, unload and install these items at the job site(s).

1.3 Location of Project: A vicinity map appears on the cover of the construction drawings. The work will take place in Duval County. The project area is within the footprint of the proposed JEA Dinsmore Substation and existing JEA transmission Right-Of-Ways, nearly a quarter of a mile south of the intersection between New Kings Road and Woodley Road. 12160 New Kings Road, Jacksonville Florida 32219.

1.4 Scope of Work: Construct a new interconnection into the new Dinsmore Substation which involves setting five (5) new spun concrete transmission poles. Run new 1590ACSR "Falcon" conductors and 3#6 AW shield wire from the poles to the terminations inside the Substation. Re-frame one (1) existing steel transmission structure, transfer existing conductors / shield wire, and install all insulators / hardware.

1.5 Project Engineer:

JEA
Sebastian Chmist
21 West Church Street, T-09
Jacksonville, FL, 32202
Office: (904) 665-7016
Cell: (860) 995-0075
Email: chmism@jea.com

Project Representative:

JEA
Greg Couture
21 West Church Street, T-09
Jacksonville, FL, 32202
Office: (904) 665-6016
Cell: (904) 502-5925
Email: coutg@jea.com

1.6 Pre-Bid Conference and Site Visit: A mandatory pre-bid conference and site visit(s) will be held for the benefit of communication and coordination. Such meeting and visit(s) will be scheduled as depicted in the solicitation.

1.7 Sequence of Work and Project Schedule: All work shall be performed in an orderly and workmanlike manner. Sequence of work may be scheduled at the discretion of the Contractor within the guidelines of these specifications. Note that construction will begin on **Monday, September 30th, 2019**. A proposed construction schedule is to be submitted with the bid. All work must be substantially completed by **Friday, October 11th, 2019.** By the term **"**Substantially completed", it is to be understood that all new poles, hardware, guy wires, guy anchors, pole grounding, wires, and conductors are to be installed as per the drawings. All site cleanup, site restoration, and remaining work must be completed by no later than **Friday, October 25th, 2019.**

1.8 Overtime: Overtime will be allowed, but only at the discretion of the JEA project representative and only when deemed necessary. The contractor should plan for forty (40) hour workweeks, either ten (10) hour or eight (8) hour work days. All work must take place during day light hours (between 7:00

am and 6:00 pm) unless otherwise directed by the JEA project representative. No night work is allowed.

2. OUTAGES:

2.1 Outages: There are two (2) scheduled outages for this project:

2.1.1 **Outage on Circuit 937:** From Monday, September 30th to Friday October 11th, 2019.
2.1.2 **Outage on Circuit 936:** On Friday, October 4th, for half a day (Approximately 4 hours)

2.2 If the contractor anticipates the need for additional outages, he/she must notify the JEA project Representative as early as possible to schedule and coordinate the outage with JEA. All outages on the JEA Transmission System shall be granted by JEA Systems Operation and Control Center (SOCC) only. The contractor shall submit all requests (for an outage) to the JEA project Representative. The JEA project representative shall submit all requests to SOCC for approval and, provided the request is granted, the contractor shall cooperate (with SOCC) in the scheduling, timing, duration and termination

2.3 Recall of Line Clearances or Hold Tags: In the event that a transmission or distribution hold tag on an energized or de-energized line must be recalled due to a system emergency, as determined by the JEA, the contractor shall complete only the work necessary to clear the line or equipment, clear his personnel, and release his hold tag as quickly as possible. Any recall shall not constitute a just cause by the contractor for a claim for extras.

3. SURVEYING AND AS-BUILT DRAWINGS:

3.1 Drawings and Details: The drawings titled "CONSTRUCTION DRAWINGS FOR CIRCUITS 937/955 DINSMORE SUBSTATION INTERCONNECT", along with these written specifications, plating, standards, pole installation guidelines, shop drawings, permits, easements, and soil borings, detail the work to be performed.

3.2 General Surveying: The Contractor shall engage the services of a State of Florida Registered Land Surveyor to establish the limits of construction, set the baselines, stake the structure and guy anchors, and perform as-builts. Note: Survey Data for the Construction Drawings was provided by Degrove Surveyors – Phone No. (904) 722-0400.

3.2.1 Coordinates: Structure, anchor, and coordinates for the new pole locations are shown on the "CONSTRUCTION DRAWINGS" found in appendix A. Work shall be done under the direct supervision of a State of Florida Registered Land Surveyor. The accuracy of this operation is critical to the success of this project. Therefore, prior to setting or relocating structures on this project, the Contractors' Construction Superintendent Chief shall be prepared to meet on the jobsite with the Project Engineer (JEA) to discuss and exchange data for the staking operation and thereby ensure effective communication has occurred. The horizontal and vertical datum(s) shall be the North American Datum (NAD) 1983 and North American Vertical Datum (NAVD) 1988 respectively. Any exceptions must be approved by JEA prior to the commencement of work. All work will be required to adhere to the following standards.

a) Vertical: Work shall be Third Order, as outlined in the Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standards, Part 4:

Standards of Architecture, Engineering, Construction (A/E/C) and Facility Management.

b) Horizontal: Work can be done using either standard surveying techniques or Global Positioning Satellite (GPS) system. If standard surveying techniques are used, all horizontal work shall comply with Third Order Class II, as outlined in the Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standards, Part 4: Standards for Architecture, Engineering, Construction (A/E/C) and Facility Management. If GPS is used, the relative horizontal accuracy shall conform to the Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standards, Part 2: National Standard for Spatial Data Accuracy.

3.3 As-Built Drawings: The contractor shall provide full size "As-Built" drawings within forty-five (45) days of substantial completion of work; drawings shall be submitted no later than November 25th, 2019. The contractor shall engage the services of a State of Florida Registered Land Surveyor to obtain As-Built Survey data for these "As-built" drawings that comply with section 3.2 above. The contractor shall note any changes, revisions or corrections, in red, and provide these "as-builts" to JEA. In addition, the contractor shall employ a State of Florida Registered Land Surveyor to determine and record on the "as-builts" the appropriate State Plane Coordinate System (SPCS) and Zone (latest adjustment), for all new structures/anchors. The contractor shall record the ground rod resistance measurements and the number of ground rods used for each structure on these "as-builts". Also, the contractor shall record the number of extensions installed at all guy anchors. The "As-Built" drawings shall verify the following construction features were built according to the Design Plans:

- Coordinates of all new structure locations
- Tension, 3rd wave return time, temperature, and date of each wire during the sag/stringing operations
- Number of ground rods and ground resistance measurements for each new structure
- Number and size of guy anchor extensions installed
- Any changes form the Construction Drawings

4. TRANSMISSION STRUCTURES:

4.1 Structure Weights: Contractor shall be responsible for providing all necessary equipment capable of performing the work. The overall estimated structure weights (excluding insulators and attachment hardware), refer to subsection 4.4.1 to 4.4.5 below.

4.2 Spun Concrete Pole Handling: Hauling, offloading, cradling and handling conditions for spotting of the pole **shall require use of the two-point pickup method**, using points specified by the manufacturer such that the pole will be balanced with the horizontal plane. The contractor shall always handle the pole in the horizontal position while off-loading, reloading, storing, or placing the pole at the pole site prior to erection. Usually, this is accomplished with a spread yoke or spreader bar. Lifting straps should be either nylon slings or "padded" wire rope, to protect from marring the pole's exterior finish. Erection condition shall require use of the single-point method, using the point specified by the manufacturer, with the pole butt remaining on the ground. At no time should the pole be lifted with a single point pick-up at the balance point, center of gravity or any other location along the pole not specified by the manufacturer.

4.3 Spun Concrete Pole Blocking: Place adequate blocking to support the pole and assure the pole is straight and will not move or roll. Sufficient space between the ground and the pole should be provided to allow lifting slings to be placed around the pole. The pole should be laid out in such a

manner to allow adequate access to all areas requiring items to be assembled while the pole is horizontal and blocked off the ground. All blocking material must be placed away from the metal sleeve splice joint (if applicable). Do not put any load on the metal sleeve splice joint so that it does not become deformed.

4.4 Spun Concrete Pole Dimensions: The detailed dimensions containing outside diameters, tapers, etc. of all spun concrete poles are provided in the "SPUN CONCRETE POLE SHOP DRAWINGS" section of Appendix A. If these drawings are not available at the time of the bid, the "CONSTRUCTION DRAWINGS" and the following preliminary notes may be used to obtain general dimensions. These notes are based on calculations from the pole manufacturer, Valmont Newmark, and are provided as a guidance only as they are subject to change.

4.4.1 **Structure #77A:** Tip Diameter is 19.71 inches, Base Diameter is 46.71 inches, the uniform taper is 0.216 inches per foot, the pole length is 125 feet, and weighs 59,000 pounds +/- 10%.

4.4.2 **Structure #77B:** Tip Diameter is 19.71 inches, Base Diameter is 46.71 inches, the uniform taper is 0.216 inches per foot, the pole length is 125 feet, and weighs 59,000 pounds +/- 10%.

4.4.3 **Structure #78A:** Tip Diameter is 27.27 inches, Base Diameter is 53.19 inches, the uniform taper is 0.216 inches per foot, the pole length is 120 feet and weighs 69,000 pounds +/- 10%.

4.4.4 **Structures #78C:** Tip Diameter is 19.71 inches, Base Diameter is 44.55 inches, the uniform taper is 0.216 inches per foot, the pole length is 115 feet, and weighs 52,000 pounds +/- 10%.

4.4.5 **Structures #79A:** Tip Diameter is 27.27 inches, Base Diameter is 53.19 inches, the uniform taper is 0.216 inches per foot, the pole length is 120 feet, and weighs 69,000 pounds +/- 10%.

4.5 Spun Concrete Pole Installation: In general, the contractor shall install the poles by use of a power-driven rotary rig having an auger with a minimum drill diameter of eighteen (18) inches larger than the butt diameter of the pole. **JEA recommends that a 72" auger be used for all spun concrete pole installations, though a smaller auger may be used as long as it meets the 18" requirement.** The Contractor shall dewater each pole location. The residual water shall be captured by a pumping tanker truck as the pole is set. The Contractor shall dispose of the collected water in accordance with all Local, State and Federal requirements. The setting depth of the poles shall be as indicated on the Construction Drawings. The pole shall be marked for the required setting depth, placed in the hole, and made plumb.

4.6 Backfill Around Spun Concrete Poles: Contractor shall backfill around spun concrete poles with FLA DOT #57 crushed stone. The fill material shall be added in one (1) cubic yard lifts and continuously compacted through each lift from the bottom of the hole to the ground line using minimum of two (2) Long Stemmed Vibrators.

4.7 Pole Details: Overall pole lengths, embedment depths, and details regarding the pole framing are shown on the "CONSTRUCTION DRAWINGS" and "TRANSMISSION STANDARDS" sections of Appendix A. There are several different types of attachments on spun concrete poles (climbing details, etc.). The details for spun concrete pole attachments are shown on the "SPUN CONCRETE POLE ATACHMENT DETAILS" sections of Appendix A.

4.8 Climbing Provisions: The spun concrete poles feature climbing provisions (step bolts). The climbing provisions will be supplied by the manufacturer of the poles and are to be installed onto the poles by the contractor.

4.9 Pole Numbering: The poles of all new structures shall be numbered by the contractor with the circuit number, the individual pole number, and the distribution pole address where applicable on of each individual structure as shown on the plan and profile sheets of the "CONSTRUCTION DRAWINGS" attachment of Appendix A. The pole numbering shall be attached to the poles as per the standard "VNC" shown in the "TRANSMISSION STANDARDS" attachment of Appendix A. The numbering shall face the same direction as each structure's birthmark or towards the road surface where present.

4.9.1 For example, Structure #79A shall have the following numbering:

a) "CIR 955" – Corresponds to Circuit #955
b) "T79A" – Corresponds to Transmission Structure #79A

4.9.2 The contractor will also be required to re-number the circuit numbers on existing structures of circuit 937. Specifically, the following shall be taken into account:

a) The removal of existing vertical tag holders from existing structures containing the text "CIR 937", and replacement with new tag holders and the text, "CIR 955".

b) The replacement of circuit numbers between structures #80 and #119E of circuit 937.

c) There are a total of forty four (44) structures to be renumbered.

d) The structures to be renumbered are located within a JEA transmission line corridor over a distance of approximately 7.3 miles. A route map of existing circuit 937 is provided as shown in the "ROUTE MAPS" section of Appendix A. The route map is provided for informational purposes only to assist the contractor in the renumbering of the structures and provide information about site access. JEA will not be held responsible for any errors in the route maps. The contractor shall not make any claims for extras due to inaccurate information contained in the maps. It is the contractor's responsibility to verify all information thru a site visit.

e) After the award of the contract, JEA will issue to the contractor a set of keys to open/ lock gates along the route of circuit 937. The contractor shall lock all gates immediately after crossing them. There are multiple animal pastures along the existing route. The contractor will be held responsible if any animals escape due to the contractor's negligence. The contractor shall not make copies of the provided JEA keys. The key must be returned to the JEA Project Engineer or JEA site representative after the completion of all work.

f) Access will be required into the Westlake Substation to renumber structures #119C, #119D, and #119E.

4.10 Structure Deliveries: Contractor shall be responsible for coordinating delivery of each pole to its final location for installation.

4.10.1 Delivery Coordination: Contractor shall be responsible for coordinating the date, time and location for delivery of structures with the manufacturers. Initial coordination shall

take place a minimum of three (3) weeks ahead of delivery. Final coordination shall take place during normal business hours at a minimum of seventy two (72) hours prior to delivery excluding weekends and holidays. Any delivery cancellation shall be made by the Contractor to the Manufacturer during normal business hours at a minimum twenty four (24) hours prior to scheduled delivery excluding weekends and holidays. At the time that Contractor schedules delivery of the structure(s), the Contractor shall take responsibility for any costs related to cancellation of the scheduled delivery time. Untimely delivery, either ahead of or behind agreed upon delivery schedules, shall not be a cause for a claim to JEA for any costs incurred by the Manufacturer or Contractor. Contact information for the pole manufactures is as follows:

a) Spun Concrete Transmission Poles: The pole manufacturer will be **Valmont Newmark**. The primary point of contact for pole deliveries will be **Jenny Brown**:

Jenny Brown
Manager Operations Support
Valmont Newmark, 4131 US Highway 17 South, Bartow, FL 33830
Phone: +1(863) 533-6465, Cell: +1 (863) 412-4863
Email: Jenny.brown@valmont.com

4.10.2 Scheduled Deliveries: There are a total of five (5) spun concrete poles to be installed for this project. These structures have been purchased by JEA and will be delivered to the construction site by the pole manufacturers. The preliminary delivery dates are as shown below. The contractor may contact the manufacturer to alter the delivery dates to fit their preferred schedule as long as it is feasible for the manufacturers to meet that schedule and does not result with an increased cost to JEA. **Any change in delivery dates must be coordinated with the JEA Project Engineer and must be followed up by email.** Email will serve as the official evidence in the event of a dispute between the contractor, the pole manufacturer, and/or JEA.

a) Preliminary Spun Concrete Pole Delivery Dates:
Structure #77A: Tuesday October 1st, 2019
Structure #77B: Tuesday October 1st, 2019
Structure #78A: Tuesday October 1st, 2019
Structure #78C: Wednesday October 2nd, 2019
Structure #79A: Wednesday October 2nd, 2019

4.10.3 Delivery Time: The Manufacturers will allow for a four (4) hour "turn around" time for unloading each pole/ structure. The pole Manufacturer will allow for a minimum two (2) hours between each delivery.

4.10.4 Once the structures are delivered, the contractor shall be responsible for measuring the structures to ensure that they match the provided shop drawings. The contractor will not claim extras for failure to make this check prior to start of work.

5. ANCHORS AND GROUNDING:

5.1 Anchor Installation: The contractor shall be responsible for establishing anchor locations as shown on the "CONSTRUCTION DRAWINGS" section of Appendix A. Anchors shall be installed with the aid of a torque indicator. Anchors shall be installed to the minimum installation torque as shown on the "MGA Guying with Anchors" standard found within the "STANDARDS" section of Appendix A.

5.2 Anchor Pilot Holes: Pilot holes will only be allowed when an attempt to install an anchor is unsuccessful. The JEA Project Representative must approve the need for a pilot hole prior to the Contractor starting such work. This cost shall be included in the Base Bid.

5.3 Anchor Pull Test: Contractor shall pull test all guy anchors to a tension of 35,000 lbs. The pull test shall be held at maximum tension for a minimum of two minutes thirty seconds (2:30). If the guy anchor moves more than four (4) inches, additional anchor extensions (above and beyond those called for by the Standard Plating) shall be installed to meet the requirements of the pull test above. The contractor shall supply the labor and equipment for installation of these additional extensions. The materials will be furnished by JEA.

5.4 Grounding:

5.4.1 All transmission hardware (bolts, brackets, dead-end tees, etc.) shall be electrically connected to the structure ground. Spun concrete poles are furnished with ground inserts located near areas where hardware is to be installed. A number 4 copper wire shall be run from all hardware to the nearest grounding insert.

5.4.2 It may be necessary to install ground rods by two different methods. Rods may be installed by conventional methods using an air compressor and air hammer. In areas where "hard-pan" or poorly conductive soils exists, rods will have to be installed by the deep well method using a well drilling rig. **The deep well method shall only be used at the direction of the JEA Engineer.**

5.4.3 The top of the first (ground) rod is to be at least six (6) inches below natural grade. The Contractor shall install five (5) ground rods at each structure location by the following method. Contractor shall install three (3) ground rods and if a ground resistance reading of 10 ohms is obtained, then the remaining two (2) ground rods will not be installed. If a ground resistance reading of 10 ohms is not obtained, then the remaining two (2) ground rods will be driven and a ground resistance reading taken. If all five (5) rods have been installed and a ground resistance of 10 ohms is not obtained, the Contractor shall install additional ground rods, provided by JEA, until a satisfactory reading is obtained as judged by the JEA Field Representative. The labor and equipment required to install the additional ground rods, in excess of five (5) ground rods, will be paid for on a unit price basis. There is a unit price that must be filled out for Additional Ground Rods listed in the "SCHEDULE OF VALUES" attachment of Appendix A. JEA will only reimburse the contractor for the actual amount of additional ground rods installed in excess of five (5) per structure. Please indicate the amount of additional ground roads installed at each structure location on the invoice(s).

5.4.4 Driving of all ground rods shall be witnessed by the JEA Field Representative and a record kept by the Contractor of the number of rods driven and the resistance readings. This information shall be submitted to the Engineer, in report form, at the completion of the project and indicated in the "As-Built". The ground rod resistance measurements shall be made with a "ground megger". The tests shall be performed as recommended by the manufacturer for the instrument used.

5.4.5 Deep well grounds, if required, shall be installed by auguring a hole by means of a casing pipe and well drilling bit, approximately 2-7/8 inches in diameter. The drill shaft and bit shall be augured to such a depth until a satisfactory ground resistance is

obtained. After a satisfactory ground resistance is obtained, the drill shaft and bit shall be withdrawn and ground rods shall be coupled together and placed in the hole to full depth formally achieved by the drill bit. In the event the top ground rod projects above the ground after placement in the hole, the rods shall be driven deeper so that the top of the top rod is at least six (6) inches below natural grade. Contractor's base bid shall reflect ground rod installation by the conventional driven method. Since it is possible that ground wells will be required for some structures that are hard to access, the contractor shall provide a unit price for installing ground wells at each structure location. It should be assumed that ground wells, if needed, will be installed to a depth of up to fifty (50) feet each. The unit price shall take into account site access. There is a unit price that must be filled out for Ground Wells listed in the "SCHEDULE OF VALUES" attachment of Appendix A. JEA will only reimburse the contractor for the actual amount of Ground Wells installed. Please indicate the amount of Ground Wells installed at each structure location on the invoice(s).

5.4.6 Ground rods shall be installed immediately after the structure is erected. The ground connection between the structure and the ground rod shall be installed immediately thereafter.

5.4.7 On spun concrete poles, the contractor shall stencil the letter "G" on each transmission pole three (3) feet above grade directly above the location of the driven ground rods. The letter "G" shall be six (6) inches high and black in color.

6. CONDUCTOR INSTALLATION:

6.1 Sag and Tension Chart: All proposed conductors and shield wires must be installed in accordance with the sag and tension charts provided on sheets 11 through 17 of the construction drawings.

6.2 Sag Watch: The contractor shall be familiar with the use of a "Sag watch" when sagging the proposed conductors/ wires. The provided sag and tension charts reference the 3rd wave return time for each span, at conductor temperatures between 30^0F and 100^0F, at 5^0F increments. If the actual temperature of the conductor is outside of the limits shown in the tables, please contact the JEA Project Engineer to request updated sag and tension tables.

7. MATERIALS:

7.1 Material Availability: Materials supplied by JEA (excluding poles) will be made available at the beginning of the project, following the pre-construction meeting. Currently all transmission materials are scheduled for pickup on **Tuesday, September 24th, 2019.** Please see the "PLATING" section in Appendix A for details.

7.2 Material Provided by JEA: All hardware provided by JEA will be issued at JEA's Commonwealth Service Center, 6674 Commonwealth Avenue, Jacksonville FL. Only the hardware shown on the "PLATING" section of Appendix A will be issued. Immediately following the pre-construction conference, the contractor shall arrange for pick up, inventory, and properly store all hardware provided by JEA. The contractor shall make a thorough check for quantities of pieces received and sign a Bill of Material indicating the amount consigned and shall be responsible for replacement of all material lost, stolen, or damaged thereafter. Contractor shall provide JEA a list of material not issued within one (1) week of initial pickup or one (1) week before the start of construction, whichever occurs first. Contractor shall provide all equipment needed for loading and transporting of material to the job site(s).

7.2.1 JEA may issue full reels of conductor, even though only small quantities of conductor are plated. For example, a conductor reel (for 1590 ACSR Falcon) is 90" x 45" x 42", has approximately 5,700 feet per reel and weights an estimated 12,560 lbs. The contractor must have the required equipment to pick up and use the conductor reels that are supplied.

7.3 Material Provided by Contractor: Material provided by the contractor shall be good quality and meet all standards and codes governing the material for the type of use of the material. Miscellaneous material such as inhibitors, cleaning solvents, grout, paint, rope, etc., required for construction shall be supplied by the contractor.

7.4 Material Requested by JEA: When requested by JEA, Contractor may be required to provide material not furnished by JEA. The contractor will be reimbursed direct cost of material plus 10%.

7.5 Bolts: For spun concrete poles, the contractor shall be responsible for determining that bolts supplied by JEA for the attachments of equipment (bayonets, insulators, etc.) are of sufficient length to permit attachment of the equipment and extend a minimum of one and a-half inches (1 ½") past the last nut. If longer or shorter bolts are needed, the request shall be made to the JEA project Manager in a timely manner.

7.6 Return of Excess Material and Conductor Reels: Contractor shall return to Commonwealth Service Center or other JEA designated facilities all excess new material and all conductor reels. Contractor shall provide all equipment needed for unloading and return of materials and reels.

7.7 Scrap Materials: The contractor shall take full responsibility and ownership of all existing scrap materials (poles, hardware, wires, insulators, etc.) removed from the construction site. All hardware and miscellaneous items called for removal in the "CONSTRUCTION DRAWINGS", are to be disposed of by the contractor. In addition, all cable reels, conductors, nuts, bolts, garbage, and miscellaneous materials shall be removed and disposed of by the contractor.

8. SITE ACCESS, PERMITS, AND SAFETY:

8.1 Access to the Work: Access to perform all work is the responsibility of the Contractor. The Contractor shall display all signs and follow all CSX Railroad rules and regulations when gaining access to the work. Flagmen shall be used, if required. Access to the worksite will be through CSX ROW, and existing JEA Transmission Line Easements.

8.1.1 The Contractor shall repair any damage to all roads, R/W's and property to as-is condition, and as directed by and to the satisfaction of JEA. All restoration must be completed by no later than **Friday, October 25th, 2019**.

8.1.2 The substation site will be under construction during the proposed time frame of the transmission line interconnect. In order to protect JEA and the contractor, the contractor shall record a video and take pictures of the existing conditions prior to the start of work. The videos and pictures must be dated and be clear enough so that they made be used in the event of a dispute.

8.1.3 Site access and work shall be coordinated with the prime substation contractor, Reliable Substation Services. Contact David Boisvert to coordinate the proposed transmission work so that it does not interfere with the substation work.

David Boisvert
Reliable Substation Services
Work: (407) 869-7440

Office: (407) 493-8846
Dboisvert_rss@hotmail.com

8.2 Maintenance of Traffic (MOT): The contractor will be responsible for all Maintenance of Traffic (MOT) during construction. There is an allowance for MOT listed in the "SCHEDULE OF VALUES" attachment of Appendix A. The contactor must inform the JEA Project Engineer if the allowance provided is not sufficient. JEA will only reimburse the contractor for the actual cost of MOT plus 10% for administrative fees. Please provide backup documentation for any MOT costs on the invoice(s).

8.3 Rail Road Access and Requirements: The contractor will be responsible for coordinating the transfer of the conductors and shield wire form exiting structure #79 onto proposed structure #79A with CSXT as the span between structures #79 and #80 crosses over the CSX right-of-way.

8.3.1 Outside Party Request: An Outside Party (OP) services request must be made to CSX by the contractor when planning for the transfer of the conductors/ shield wire. CSX is no longer accepting paper requests for OP services. The contractor will be responsible to proceeding to the CSX Property Portal website to submit the OP request application. The CSX property portal can be accessed thru www.csx.com. Once on the site, please follow this path: Customers → CSX Real Estate → CSX Property Portal. At the time that these specifications were written, the property portal website was https://propertyportal.csx.com/pub_ps_res/ps_res/jsf/public/index.faces. Once on the site, sign up for a new account and password. Once completed, please use OP Request Reference Number **640190701241659** to retrieve the OP request application. Please fill out the required information and submit the application in order to request a flagman.

8.3.2 CSX Railroad Flagman: The flagman must be scheduled thru the OP request as described in the above section. In the event that local protection services are not available at the time of your request, protection services from outside the geographical area of your project may be assigned at extra cost to the Agreement Holder / Project Owner (JEA). The cost of protection services vary based on factors including but not limited to, type of project, duration of project, utilization of local or out of town flagging personnel, etc. In the event it is necessary to cancel or re-schedule protection services already scheduled, the following notice periods are required (failure to provide notice as stated shall result in the Agreement Holder / Project Owner incurring cost associated with the scheduled protection services.)

- 48 hour notice: Short term projects (1-3 days to completion)
- 3 days' notice: Medium term projects (4-19 days to completion)
- 5 days' notice: Long term projects (20 or more days to completion)

JEA will not be responsible for any additional CSX costs due to the negligence of the contractor. Contractor must provide sufficient notice to CSX for all actions to avoid unnecessary costs.

8.3.3 Payment for CSX Flagman: The average cost for flagging and/or monitoring is $1,500 per day. The actual cost may vary and will be billed accordingly by CSX. The contractor shall pay CSX for a flagman directly. There is an allowance for a CSX Flagman listed in the "SCHEDULE OF VALUES" attachment of Appendix A. The contactor must inform the JEA Project Engineer if the allowance provided is not sufficient. JEA will only reimburse the contractor for the actual cost of the CSX flagman. Please provide backup documentation for any CSX flagman costs on the invoice(s).

8.3.4 Insurance Requirements for CSX: CGL and RPL Insurance is required for this project with CSX. JEA has purchased RPL coverage for JEA and the contractor directly thru CSX during the permit application process. However, the contractor is still required to obtain CGL coverage with limits and information as shown in the "CSX INSURANCE REQUIRMENTS" section of Appendix A.

8.4 Lay Down Area: The contractor may use the following JEA owned land as a laydown area to store materials and provide parking for employees and their equipment. Any other arrangements for a laydown area will be the responsibility of the contractor.

8.4.1 The Transmission Corridor: The contractor may use the existing Transmission Line Corridor along the Disnmore Substation as a laydown area. Work and laydown area must be coordinated with Reliable Substation Services as indicated in section 8.1.3.

8.5 Substation Safety Training: If the contractor needs to access to the Dinsmore, Westlake, Normandy, or SJRPP Substations, it will be required that the contractor and anyone accessing the area have taken and completed the JEA Substation Safety Training Certification class. The substation training certification expires after three (3) years. Training is only offered once a month. If training is needed, please contact Wesley Grant in a timely manner to schedule the training (contact information below):

Wesley Grant
JEA
Manager of Technical Utility Training Services
West Side Service Center
Office: (904) 665-7617
Cell: (904) 673-7481
Email: granwm@jea.com

8.5.1 JEA Badge Access: A JEA contractor's badge will be required to gain entry onto any JEA Substation. At least one person working at the construction site (preferably a construction site foreman) needs to have a JEA contractor's badge so that they may open and close the gates at a JEA substation. Even if the contactor has a JEA contractor's badge from a previous project, the contractor needs to provide to the JEA Project Engineer the name's, phone numbers, and emails of the employees whom he wishes to have a JEA contractor's badge with access to a JEA substation for this project. Access rights will need to be added by JEA to any badge so that it functions.

8.5.2 Storage of Materials: All materials, aside from transmission poles, stored at the corridor must be stored inside a lockable trailer that will be locked every time that the contractor leaves the site for the day.

8.6 Permits: There is one permit required for this work as described below:

8.6.1 CSX Railway: JEA has worked with CSX to obtain permission to install and maintain the proposed transmission structures and wires as shown in the "PERMITS" section of Appendix A. This permit, along with the OP services request (see section 8.3.1) will serve as authorization to install the transmission line over the CSX right-of-way.

8.6.2 JEA is exempt from obtaining City of Jacksonville permits, and so are the contractor's contracted under JEA to perform the work. However, the contractor will need to notify the City of Jacksonville of any work that will be taking place during construction on a daily basis. A "DAILY CREW LOCATION WORK REPORT" needs to be submitted to Mr. Mike Sands and the JEA Project Engineer each morning during the duration of all construction activities. Please see the "DAILY CREW LOCATION WORK REPORT" section in Appendix A.

8.6.3 FDOT: New Kings Road is an FDOT road and will serve as the primary access onto the construction site. As part of the substation construction, Reliable Substation Services will build a new paved entrance driveway off of New Kings Road. The access driveway will have a minimum 80-foot turning radius. Details of the planned construction are shown in the "DINSMORE SUSBTATION" SECTION OF Appendix A. These details are being provided for information purposes only to show the proposed driveway and its orientation.

8.6.4 In the event that unforeseen permits are required, JEA will reimburse the contractor the cost of any permit plus 10% for administrative fees.

8.7 Security: Contractor shall be responsible at all times for providing their own security to the work site, equipment, and materials. In addition, the contractor shall provide site security for contractor work safety at their discretion.

8.8 General Safety Information:

8.8.1 Please visit the following site to learn more about JEA's safety related information: https://www.jea.com/About/Procurement/Become_a_Vendor/Contractor_Safety/

8.8.2 The winning bid contractor will need to become JEA Safety Qualified at least ten (10) business days after the bid opening by submitting the "Contractor Safety Qualification Questionnaire" found in the link above.

8.8.3 The contractor's employees need to be drug tested at least thirty (30) days prior to the start of any work. JEA may request for proof of the drug testing before and during the construction.

8.8.4 The contractor's employees will need to take safety orientation and/ or training as described in the following link: https://www.jea.com/About/Procurement/Become_a_Vendor/Contractor_Safety/Safety_Orientation_Training/

8.8.5 For any questions regarding JEA's safety requirements, please contact Jerry Fulop (contact information below):

Safety & Health Specialist:
JEA
Jerry Fulop
21 West Church Street, T-3
Jacksonville, FL, 32202
Office: (904) 665-5810
Cell: (904) 334-9041
Email: fuloje@jea.com

8.9 Protection of Existing improvements: Contractor shall exercise proper care not to destroy or otherwise damage any existing improvements (utilities, buildings, roads, etc.) in the work area that are to remain. Any damage to such improvements shall be immediately repaired by the Contractor at no additional cost to JEA.

8.10 Restoration: The contractor shall, at his expense, restore any vegetative / non-vegetative areas damaged during construction to conditions that existed prior to starting the project. The contractor will be required to restore area to proper grade, properly amend soil and install vegetation that matches surrounding and/or pre-existing conditions. Contractor shall water area as necessary to permanently establish new vegetation. All restoration to the Dinsmore Substation's Site and the civil site work performed under Reliable Substation Services, shall be restored to match the substation construction drawings. The drawings will be provided upon request. All restoration outside the Dinsmore Substation shall be performed per the latest edition of the COJ standards and shall be completed no later than **Friday, October 25th, 2019**. All the standards can be found in the latest edition of JEA's Underground Electric Distribution Standards, under sections III and VIII. The standards can be found in the following link:

https://www.jea.com/engineering_and_construction/electric_reference_materials/underground_electric_distribution_standards/

9. SEQUENCE OF WORK:

Below is a recommended and anticipated sequence of work, however final discretion is left to the Contractor:

9.1 Mobilize.

9.2 Secure required MOT and CSX. Flagman

9.3 Survey structure locations.

9.4 Pickup materials and hardware.

9.5 Take delivery of transmission structures (see section 4.10.2), unload and spot structures at their proposed installation locations, inspect poles to confirm measurements.

9.6 Take an outage on Circuit 937

9.7 Frame and install new transmission structures

9.8 Ground all structures.

9.9 Take an outage on circuits 936

9.10 Transfer one (1) existing 3#6 AW shield wire and three (3) existing 1590 ACSR Falcon conductors from existing structure #79 to new structure #79A.

9.11 Transfer one (1) existing 3#6 AW shield wire and three (3) existing 1590 ACSR Falcon conductors from existing structure #78 to new structure #78A.

9.12 Re-frame existing transmission structure #79.

9.13 Re-energize circuit 936

9.14 Install new 1590 ACSR conductors and 3#6 AW shield wire.

9.15 Sag and tension all conductors and shield wire.

9.16 Energize circuits 937/955

9.17 Clean up work site and perform needed restoration.

9.18 Demobilize.