Solicitation

For Participation in

Construction Services for Northside (NGS) Substation Bay Addition and St. Johns River Power Park (SJRPP) Station Service Conversion

for

Jacksonville, FL

Solicitation Number

124-17

Mandatory Pre-Bid Meeting on July 31, 2017

Mandatory Pre-Bid Meeting Time: 1:00 PM

SJRPP Building #5 Main Conference Room, 11201 New Berlin Road, Jacksonville, FL 32226

There will be a mandatory site walkthrough following the pre-bid meeting at SJRPP, 11201 New Berlin Road, Jacksonville, FL 32226 and Northside Generating Station (NGS), 4377 Heckscher Drive

Bids are due on August 22, 2017

Direct delivery or mail to JEA Bid Office, Customer Center 1st Floor, Room 002

21 W. Church Street, Jacksonville, FL 32202

JEA will publicly open all bids received from qualified Bidders on August 22, 2017, at 2:00 p.m. in the JEA Bid Office, Customer Center 1st Floor, Room 002, 21 W. Church Street, Jacksonville, FL 32206

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Solicitation

1. SOLICITATION

1.1. INVITATION

1.1.1. SCOPE OF WORK

JEA is soliciting Bids from construction contractors (hereinafter referred to as "Company") for construction services for Northside (NGS) substation bay addition and St. Johns River Power Park (SJRPP) station service conversion (the "Work" or "Services".)

The Work specified herein includes the construction of an additional bay at Northside Substation and an additional two station service feeds at SJRPP Switchyard. The overall project comprises of modifications to the existing Northside 230kV Switchyard to facilitate the required changes to the facility to allow for an additional transmission interconnection. The interconnection will consist of one (1) new 230kV transmission line entering the Northside Switchyard. The modifications at the Northside Switchyard will be performed to accommodate the changes to the transmission system to include a new 230kV power circuit breaker, A-frame dead-end structure, relaying equipment and buswork. Below grade and above grade work will be required for the completion of the facility modifications. In addition, new primary station service units and a secondary station service connection will be installed at the St. Johns River Power Park (SJRPP) 230kV Switchyard that will be comprised as part of this Work.

A complete scope of work is provided in Appendix A – Technical Specification.

1.1.2. QUESTIONS

All questions must be submitted in writing to the JEA Buyer listed below at least five (5) business days prior to the opening date. Questions received within five (5) business days prior to the opening date will not be answered.

For Procurement Related Questions:
Buyer: NATHAN WOYAK
E-mail: woyanj@jea.com

For Technical Questions:
Contact: JASON RINEHART
E-mail: RINEJA@JEA.COM

1.1.3. INVITATION TO BID

You are invited to bid on the Solicitation noted below:

JEA Solicitation Title: Construction Services for Northside (NGS) Substation Bay Addition and St. Johns River Power Park (SJRPP) Station Service Conversion
JEA Solicitation Number: 124-17

To obtain more information about this Solicitation:
Download a copy of the Solicitation, PDF quality drawings (if applicable) and any required forms at jea.com.

Bid Due Time: 12:00 P.M. - ALL LATE BIDS WILL BE RETURNED UNOPENED
Bid Due Date: August 22, 2017

All Bids must reference the JEA Solicitation title and number noted above. All Bids must be made on the appropriate Bid forms as specified within this Solicitation, and placed in an envelope marked to identify the Solicitation and delivered or mailed to:

JEA Procurement, Bid Office, Customer Center 1st Floor, Room 002, Jacksonville, FL 32202

The Bidder shall be solely responsible for delivery of its Bid to the JEA Bid Office. **Please note, JEA employs a third party courier service to deliver its mail from the local U.S. Postal Service (USPS) which could cause a delay of Bid delivery if mailed through the USPS.** Therefore, JEA recommends direct delivery to the JEA Bid Office. Reliance upon the USPS, the courier service employed by JEA to make pick-ups from the local USPS, or public carriers is at the Bidder's risk.

Bids are due by the time and on the date listed above. ALL LATE BIDS FOR WHATEVER REASON WILL BE RETURNED UNOPENED.

1.1.4. MANDATORY PRE-BID MEETING AND SITE WALKTRHOUGH

There will be a mandatory Pre-Bid meeting. All interested Bidders must attend the Pre-Bid meeting. Each Bidder will be required to sign in at the beginning of the meeting. A Bidder shall only sign in representing one company, unless otherwise specified by JEA. Bidders not attending the Pre-Bid meeting shall have their bids opened, however, the Bid will be rejected and JEA will send the Bidder a disqualification letter.

All attendees must submit a list of names to Jason Rinehart (rineja@jea.com) and Nathan Woyak (woyanj@jea.com) by close of business July 27, 2017 for security clearance to pre-bid location.

Bidders shall be on time to the Pre-Bid meeting and Bidders must be present at the starting time of the meeting. Bidders not arriving on time for the meeting will have their Bids rejected and returned unopened.

PLEASE BE AWARE DUE TO JEA SIGN IN AND/OR SECURITY PROCEDURES IT MAY TAKE UP TO FIFTEEN MINUTES TO OBTAIN ACCESS TO A JEA FACILITY. PLEASE PLAN ACCORDINGLY SO AS TO ARRIVE TO THE PRE-BID MEETING ON TIME.

Pre-Bid Meeting Time: 1:00 P.M.
Pre-Bid Meeting Date: July 31, 2017
Pre-Bid Location: SJRPP Building #5 Main Conference Room, 11201 New Berlin Road, Jacksonville, FL 32226

There will be a mandatory site walkthrough following the pre-bid meeting at SJRPP, 11201 New Berlin Road, Jacksonville, FL 32226 and Northside Generating Station (NGS), 4377 Heckscher Drive

1.1.5. OPENING OF BIDS

All Bids shall be publicly opened, read aloud and recorded at 2:00 PM on August 22, 2017 at the JEA Bid Office, 21 W. Church Street, Customer Center First Floor, Room 002, Jacksonville, FL 32202.

At the opening of Bids, a JEA Representative will publicly open and announce each Bid that was received on time. Bids that have been properly withdrawn will not be opened. JEA has the right to waive any irregularities or informalities in the Bid Document.

1.2. SPECIAL INSTRUCTIONS

1.2.1. MINIMUM QUALIFICATIONS FOR SUBMISSION

Bidder shall have the following Minimum Qualifications to be considered eligible to submit a Bid in response to this Solicitation. **A Minimum Qualification Form which is required to be submitted with the Bid Form is provided in Appendix B of this Solicitation.**

It is the responsibility of the Bidder to ensure and certify that it meets the Minimum Qualifications stated below. A Bidder not meeting all of the following criteria will have their Bids rejected:

- Company must be listed on JEA's Responsible Bidders List (RBL) in the following category: **SB1 - Substation Construction up to 500KV**

- Company must hold a valid State of Florida Electrical Contractor or General Contractor License. Enter number on the Minimum Qualification Form.

- The Company must submit one (1) representative project reference in which the Company self-performed the installation of a substation, or part of a substation rated at 138kV or greater. The project must have been substantially completed within the last three (3) years of the bid due date.

Respond on the Appendix B Minimum Qualification Form.

For any questions regarding RBL qualification and current status, contact Melanie Newton-Green at: 904-665-6913 or at newtmi@jea.com.

Please note, any Bidder whose contract with JEA was terminated for default within the last two (2) years shall have their Bid rejected.

1.2.2. EVALUATION METHODOLOGY

1.2.2.1. BASIS OF AWARD - LOWEST BID

JEA will Award this Contract to the responsive and responsible Bidder whose Bid meets or exceeds the Minimum Qualifications set forth in this Solicitation, and the Bidder's price represents the lowest cost to JEA.

JEA will use the Bidder's Total Bid Price stated on the Bid Form when making price comparisons for Award purposes.

1.2.2.2. COMPETITIVE SEALED BIDDING (INVITATION FOR BIDS)

The Bidder shall submit its sealed Bid in response to this Solicitation no later than the Bid due date and time indicated herein. At the public opening of the Bids, the Bids from all Bidders will be publicly announced. After the public opening, JEA will subsequently review Bids to determine if they meet the minimum qualifications as stated in this Solicitation. JEA will Award the Contract to the lowest responsive and responsible Bidder whose Bid meets or exceeds the minimum qualifications, and whose Bid Price represents the lowest cost to JEA.

NO EXCEPTIONS ARE ALLOWED IN AN INVITATION TO BID. IF THE BIDDER OBJECTS IN ANY MANNER TO THE TERMS AND CONDITIONS OR TECHNICAL SPECIFICATIONS, THE OBJECTION MUST BE ADDRESSED IN WRITING FIVE (5) BUSINESS DAYS PRIOR TO THE BID OPENING DATE, AND THE OBJECTION MAY BE ADDRESSED IN AN ADDENDUM IF JEA BELIEVES THAT A CLARIFICATION OR

CHANGE IS NECESSARY. ANY MODIFICATIONS, EXCEPTIONS OR OBJECTIONS STATED WITHIN THE BID DOCUMENTS SHALL SUBJECT THE BID TO BE REJECTED.

1.2.3. NUMBER OF CONTRACTS TO BE AWARDED

JEA intends to Award ONE (1) Contract(s) for the Work. JEA reserves the right to Award more than one Contract based on certain groupings of the Work items, or JEA may exclude certain Work items, if JEA determines that it is in its best interest to do so.

1.2.4. JACKSONVILLE SMALL AND EMERGING BUSINESS (JSEB) PROGRAM REQUIREMENTS

1.2.4.1. OPTIONAL USE OF JACKSONVILLE SMALL AND EMERGING BUSINESS (JSEB) PROGRAM

It is at the Company's option as to whether it chooses to subcontract to a JSEB firm. JEA encourages the use of JSEB qualified firms; however, the Company is not required to utilize JSEB firms to be Awarded this Contract.

JSEB firms that qualify for this Contract are only those shown on the current City of Jacksonville JSEB directory appearing at www.COJ.net. Certification of JSEB firms must come from the City of Jacksonville. No other agency or organization is recognized for purposes of this Contract.

In no case shall the Company make changes to the JSEB firms listed in its Bid, revise the JSEB Scope of Work or amount of Work as stated in its Bid without prior written notice to the JEA Contract Administrator, and without subsequent receipt of written approval for the JEA Contract Administrator.

Any subcontractors of Company shall procure and maintain the insurance required of Company hereunder during the life of the subcontracts. Subcontractors' insurance may either be by separate coverage or by endorsement under insurance provided by Company. Note: Any JSEB firms identified by Bidders for this Solicitation are considered "Subcontractors" under the direct supervision of the Prime or General Contractor (herein referred to as Company in this Solicitation). Companies should show good faith efforts in providing assistance to JSEB firms in the securing of Subcontractors' insurance requirements stated in this section. Company shall submit subcontractors' Certificates of Insurance to JEA prior to allowing subcontractors to perform Work on JEA's job sites.

All question and correspondence concerning the JSEB program should be addressed to the following contact:

G. Nadine Carswell
JSEB Manager

JEA
21 W. Church Street, CC-6
Jacksonville, FL 32202
(904) 665-6257
carsgs@jea.com

1.2.5. INSURANCE REQUIREMENTS

Prior to JEA issuing a Purchase Order to the Bidder/Proposer to begin the Work or Services, the Bidder/Proposer shall submit a certificate of insurance (COI) that is in compliance with amounts and requirements as indicated in the Section herein entitled "Insurance Requirements". **Note that the COI shall specifically indicate JEA (and Florida Power and Light Company ("FPL"), if applicable) as additional insured(s) on all required insurance except Worker's Compensation and Professional Liability (if applicable). Furthermore, waiver of subrogation shall be provided for all required insurance in favor of JEA, FPL (if applicable), including their board members, officers, employees, agents, successors, and assigns.**

1.2.6. PAYMENT AND PERFORMANCE BOND REQUIREMENTS

Once the Bidder is Awarded the Contract and upon receipt of the Contract Documents, the Bidder shall furnish a Payment and Performance Bond, or alternate form of security, in the amount indicated on the Bid Form, made out to JEA in forms and formats approved and provided by JEA, as security for the faithful performance of the Work or Services. No modifications to the JEA bond forms are allowed.

A fully executed Payment and Performance Bond must be recorded with the Clerk of Duval County Court and delivered to JEA before the JEA Purchase Order will be issued. JEA will send the approved bond forms to the Bidder for execution along with the Contract; however, in no case shall the date on the bond forms be prior to that of the executed Contract. The surety must be authorized and licensed to transact business in Florida. **Note, that the Bidder is responsible for the costs associated with the required Payment and Performance Bonds; therefore, the costs should be included in the Bidders's total Bid Price.** If the Bidder fails or refuses to furnish or record the required bonds, JEA will retain the Bidder's bid bond as liquidated damages.

To be acceptable to JEA as surety for Performance and Payment Bonds, a surety company shall comply with the following provisions:

- The Surety Company shall have a currently valid Certificate of Authority, issued by the State of Florida, Department of Insurance, authorizing it to write surety bonds in the State of Florida.
- The Surety Company shall have a currently valid Certificate of Authority issued by the United States Department of Treasury under Sections 9304 to 9308 of Title 31 of the United States Codes.
- The Surety Company shall be in full compliance with the provisions of the Florida Insurance Code.
- The Surety Company shall have at least twice the minimum surplus and capital required by the Florida Insurance Code during the life of this agreement.
- If the Contract Award Amount exceeds $500,000, the Surety Company shall also comply with the following provisions:

The Surety Company shall have at least the following minimum ratings in the latest issue of A.M. Best's Key Rating Guide.
POLICY HOLDER'S CONTRACT AMOUNT AND REQUIRED FINANCIAL RATING
$500,000 TO 1,000,000: A-CLASS IV
$1,000,000 TO 2,500,000: A-CLASS V
$2,500,000 TO 5,000,000: A-CLASS VI
$5,000,000 TO 10,000,000: A-CLASS VII
$10,000,000 TO 25,000,000: A- CLASS VIII
$25,000,000 TO 50,000,000: A- CLASS IX
$50,000,000 TO 75,000,000: A- CLASS X
The Surety Company shall not expose itself to any loss on any one risk in an amount exceeding ten (10) percent of its surplus to policyholders, provided:
Any risk or portion of any risk being reinsured shall be deducted in determining the limitation of the risk as prescribed in this section. These minimum requirements shall apply to the reinsuring carrier providing authorization or approval by the State of Florida, Department of Insurance, to conduct business in this state has been met.
In the case of the surety insurance company, in addition to the deduction for reinsurance, the amount assumed by any co-surety, the value of any security deposited, pledged or held subject to the consent of the surety and for the protection of the surety shall be deducted.

1.2.7. LIQUIDATED DAMAGES IN CONTRACT

The Contract issued pursuant to this Solicitation contains liquidated damages tied to project completion deadlines. The Bidder should review the specific time frames and liquidated damage amounts prior to submitting its Bid.

1.2.8. SAFETY QUALIFICATION REQUIREMENTS (IFB)

Bidder shall be approved as JEA Safety Qualified within ten (10) business days of receiving written notice from the JEA Bid Office that it is the lowest responsive and responsible Bidder. If the Bidder fails to obtain JEA approval as a JEA Safety Qualified company by 4:00 p.m. Eastern Time on the 10th business day, JEA will reject the company's Bid, and proceed to Award to the next lowest responsive and responsible Bidder.

JEA Safety Qualification information is available online at jea.com. Please note that it may take up to five (5) business days for a company to be approved as JEA Safety Qualified. It is the Bidder's responsibility to ensure it is JEA Safety Qualified. A list of the JEA's Safety Qualified vendors can be found on jea.com. For additional information, contact Jerry Fulop at (904) 665-5810.

1.2.9. TIME

In computing any period of time prescribed or allowed by this solicitation, the day of the act, event, or default from which the designated period of time begins to run shall not be included. The last day of the period so computed shall be included unless it is a Saturday, Sunday, or JEA holiday, in which event the period shall run until the end of the next day which is neither a Saturday, Sunday, or JEA holiday.

1.2.10. REQUIRED FORMS TO SUBMIT WITH BID

To submit a Bid in response to this Solicitation, all of the forms listed below must be completed and submitted as part of the Bid. The Bidder must obtain the required forms, other than the forms provided in the solicitation, by downloading them from JEA.com. If the Bidder fails to complete or fails to submit one or more of the required forms, the Bid shall be rejected.
The following forms are required to be submitted at the time of Bid:

- Bid Bond
- Minimum Qualification Form - This form can be found in Appendix B
- Bid Form (including acknowledgements of all addenda) - This form can be found in Appendix B
- Florida Trench Safety Act Acknowledgment - This form can be found on jea.com
- Construction and Demolition Debris Disposal (if applicable) - This form can be found on jea.com
- List of Subcontractor Form (if any) - This form can be found on jea.com
- State of Florida license number- Enter on Appendix B Bid Form
- Completed Schedule of Values

If the above listed forms are not submitted with the Bid by the Bid Due Time on the Bid Due Date, JEA shall reject the Bid.

JEA also requires the following documents to be submitted prior to execution of Contract. A Bid will not be rejected if these forms are not submitted at the Bid Due Time and Date. However, failure to submit these documents at the time of Contract execution could result in Bid rejection.

- List of JSEB Certified Firms (if any)- This form can be found on jea.com
- Conflict of Interest Certificate Form
- Insurance Certificate
- W-9
- Evidence of active registration with the State of Florida Division of Corporations (www.sunbiz.org)
- Any technical submittals as required by the Technical Specifications.

1.2.11. BID SECURITY/BID BOND

All Bids shall be accompanied by a bid security in the amount stated on the Bid Form. The bid security must be furnished by the Bidder at or before the opening of Bids. The bid security shall either be issued by a surety company authorized to do business in the State of Florida, or Bidder shall furnish a certified check or cashier's check in the amount of five percent 5% of the total Bid Amount shown on the Bid Form. The JEA Bid Bond form can be found at jea.com. Failure to furnish the required bid security will disqualify the Bid. If the Bidder is Awarded the Work and fails to execute the Contract within ten (10) days of postmarked date on the Contract Documents, JEA shall retain the Bid Bond or check as liquidated damages.

1.3. GENERAL INSTRUCTIONS

1.3.1. COMPLETING THE BID DOCUMENTS

Bidders shall complete and submit all Bid Documents with responses typewritten or written in ink. ALL BIDS SUBMITTED LATE TO THE JEA BID OFFICE WILL BE REJECTED.

When a blank is marked "optional" on the bid form, the Bidder shall insert the words "No Bid" in the space provided if the Bidder does not choose to submit a price for that item. Failure to complete each blank with either a price or the words "No Bid" may disqualify the Bid. The Bidder, or its authorized agent or officer, shall sign the Bid Documents. Failure to sign the Bid Documents may disqualify the Bid. JEA approved erasures, interlineations or other corrections shall be authenticated by affixing in the margin, immediately opposite the correction, the handwritten signature of each person executing the Bid. Failure to authenticate changes may disqualify the Bid. JEA may disqualify any Bids that deviate from the requirements of this Solicitation, and those that include unapproved exceptions, amendments, or erasures.

1.3.2. CALCULATION OF THE BID PRICE

JEA will use the Bidder's Total Bid Price stated on the Bid Form when making price comparisons for Award purposes.

1.3.3. SUBMITTING THE BID FORM

The Bidder shall submit one original of all the Bid Documents and two (2) duplicates of the original Bid Documents. It is encouraged that all submitters include an electronic version with their hardcopy submittal.

JEA will not accept Bid Documents files transmitted via email. If electronic copies of the Bid Documents are submitted, they must be submitted on a CD with the hardcopies of the Bid Documents.

1.3.4. MODIFICATION OR WITHDRAWAL OF BIDS

The Bidder may modify or withdraw its Bid at any time prior to the Bid Due Date and Time by giving written notice to JEA's Chief Procurement Officer. JEA will not accept modifications submitted by telephone, telegraph, email, or facsimile, or those submitted after the Bid Due Date and Time. The Bidder shall not modify or withdraw its Bid from time of Bid opening and for a period of 90 days following the opening of Bids.

1.3.5. ADDENDA

JEA may issue Addenda prior to the Bid opening date to revise, in whole or in part, or clarify the intent or requirements of the Solicitation. The Bidder/Proposer shall be responsible for ensuring it has received all Addenda prior to submitting its Bid or Proposal and shall acknowledge receipt of all Addenda by indicating where requested on the Bid Form. JEA will post all Addenda when issued online at jea.com. The Bidder/Proposer must obtain Addenda from the JEA website. All Addenda will become part of the Solicitation and any resulting Contract Documents. It is the responsibility of each Bidder/Proposer to ensure it has received and incorporated all Addenda into its Bid or Proposal. Failure to acknowledge receipt of Addenda may be grounds for rejection of a Bid or Proposal.

1.3.6. CONTRACT EXECUTION AND START OF WORK

Within thirty (30) days from the date of Award, JEA will present the successful Bidder/Proposer with the Contract Documents. Unless expressly waived by JEA, the successful Bidder/Proposer shall execute a Contract for the Work or Services within ten (10) days after receiving the Contract from JEA. If the Bidder/Proposer fails to execute the Contract or associated documents as required, or if it fails to act on a JEA-issued Purchase Order (PO), JEA may cancel the Award with no further liability to the Bidder/Proposer, retain the bid security or bond (if applicable), and Award to the next-ranked company.

Upon JEA's receipt of the executed Contract, certificate of insurance, and recorded Payment and Performance bonds (if applicable), JEA will issue a PO, in writing and signed by an authorized JEA representative as acceptance of the Proposal or Bid and authorization for the company to proceed with the Work, unless otherwise stated in the Contract or PO.

For Construction Services: In the event that JEA intends to authorize the successful Bidder/Proposer to proceed with administrative work only, or with only a portion of the Work, then the PO shall state the specific limitations of such authorization and JEA will issue a separate written Notice to Proceed to authorize the Bidder/Proposer to begin Field Work, when applicable, or to perform the remainder of the Work, or any portion thereof. The Bidder/Proposer shall ensure that it is prepared to begin Field Work upon receipt of Notice to Proceed. Any Work performed outside of this partial authorization shall be at the Bidder/Proposer's risk and JEA shall have no obligation to pay for such Work.

1.3.7. DEFINED TERMS

Words and terms defined in the Section entitled "Definitions" of this document are hereby incorporated by reference into the entire document.

1.3.8. EX PARTE COMMUNICATION

Ex Parte Communication is strictly prohibited. Ex Parte Communication is defined as any inappropriate communication concerning a Solicitation between a firm submitting a Bid or Proposal and a JEA representative during the time in which the Solicitation is being advertised through the time of Award. Examples of inappropriate communications include: private communications concerning the details of Solicitation in which a Bidder becomes privy to information not available to the other Bidders. Social contact between Bidders and JEA representatives should be kept to an absolute minimum during the solicitation process.

Failure to adhere to this policy will disqualify the noncompliant Company's Bid or Proposal. Any questions or clarifications concerning a Solicitation must be sent in writing via email to the JEA Buyer at least five (5) business days prior to the opening date. If determined by JEA, that a question should be answered or an issue clarified, JEA will issue an addendum to all Bidders.

For more information on Ex Parte communications, see JEA Procurement Code, Article 1-110, which is available at www.jea.com.

1.3.9. JEA PUBLICATIONS

Applicable JEA publications are available at jea.com.

1.3.10. PROHIBITION AGAINST CONTINGENT FEES

The Company warrants that it has not employed or retained any company or person, other than a bona fide employee working for the Company, or an independent sales representative under contract to the Company, to solicit or secure a contract with JEA, and that it has not paid or agreed to pay any person, company, corporation, individual or Company, other than a bona fide employee working solely for the Company, or an independent sale representative under contract

to the Company, any fee, commission, percentage, gift, or any other consideration, contingent upon or resulting from the Award or making of the Contract. For a breach or violation of these provisions occurs, JEA shall have the right to terminate the Contract without liability, and at its discretion, to deduct from the Contract Price, or otherwise recover, the full amount of such fee, commission, percentage, gift or consideration.

1.3.11. RESERVATIONS OF RIGHTS TO JEA

The Solicitation provides potential Companies with information to enable the submission of written offers. The Solicitation is not a contractual offer or commitment by JEA to purchase products or services.

Bids or Proposals shall be good for a period of ninety (90) days following the opening of the Bids or Proposals.

JEA reserves the right to reject any or all Bid or Proposals, or any part thereof, and/or to waive informalities if such action is in its best interest. JEA may reject any Bids or Proposals that it deems incomplete, obscure or irregular including, but not limited to, Bid or Proposals that omit a price on any one or more items for which prices are required, Bids or Proposals that omit Unit Prices if Unit Prices are required, Bids or Proposals for which JEA determines that the Bid or Proposal is unbalanced, Bids or Proposals that offer equal items when the option to do so has not been stated, Bids or Proposals that fail to include a Bid Bond, where one is required, and Bids or Proposals from Companies who have previously failed to satisfactorily complete JEA contracts of any nature or who have been scored by JEA as "Unacceptable" and as a result, are temporarily barred from bidding additional work.

JEA reserves the right to cancel, postpone, modify, reissue and amend this Solicitation at its discretion.

JEA reserves the right to cancel or change the date and time announced for opening of Bids or Proposals at any time prior to the time announced for the opening of Bids or Proposals. JEA may Award the Contract in whole or in part. In such cases whenever JEA exercises any of these reservations, JEA will make a commercially reasonable effort to notify, in writing, all parties to whom Solicitations were issued. JEA may award multiple or split Contracts if it is deemed to be in JEA's best interest.

1.3.12. SUNSHINE LAW

General.

Article I, Section 24, Florida Constitution, guarantees every person access to all public records and Chapter 119, Florida Statutes, provide a broad definition of public records. JEA is a body politic and corporate and subject to these laws and related statutes ("Florida's Public Records Laws"). All responses to this Solicitation are public records and available for public inspection unless specifically exempt by law.

IF A BIDDER/PROPOSER HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

JEA
Attn: Public Records
21 West Church Street
Jacksonville, Florida 32202
Ph: 904-665-8606
publicrecords@jea.com

Redacted Submissions.

If a Bidder/Proposer believes that any portion of the documents, data or records submitted in response to this Solicitation are exempt from Florida's Public Records Law, Bidder/Proposer must (1) clearly segregate and mark the

specific sections of the document, data or records as "Confidential," (2) cite the specific Florida Statute or other legal authority for the asserted exemption, and (3) provide JEA with a separate redacted copy of its response (the "Redacted Copy"). The cover of the Redacted Copy shall contain JEA's title and number for this Solicitation and Bidder's name, and shall be clearly titled "Redacted Copy." Bidder/Proposer should only redact those portions of records that Bidder/Proposer claims are specifically exempt from disclosure under Florida's Public Records Laws. If Bidder/Proposer fails to submit a redacted copy of information it claims is confidential, JEA is authorized to produce all documents, data and other records submitted to JEA in answer to a public records request for such information.

In the event of a request for public records to which documents that are marked as confidential are responsive, JEA will provide the Redacted Copy to the requestor. If a requestor asserts a right to any redacted information, JEA will notify Bidder/Proposer that such an assertion has been made. It is Bidder's/Proposer's responsibility to respond to the requestor to assert that the information in question is exempt from disclosure under applicable law. If JEA becomes subject to a demand for discovery or disclosure of Bidder's/Proposer's redacted information under legal process, JEA shall give Bidder/Proposer prompt notice of the demand prior to releasing the information (unless otherwise prohibited by applicable law.) Bidder/Proposer shall be responsible for defending its determination that the redacted portions of its response are not subject to disclosure.
By submitting a response to this Solicitation, Bidder/Proposer agrees to protect, defend and indemnify JEA from and against all claims, demands, actions, suits, damages, liabilities, losses, settlements, costs and expenses (including but not limited to reasonable attorney fees and costs) arising from or relating to Bidder's/Proposer's determination that the redacted portions of its response to this Solicitation are not subject to disclosure.

1.3.13. ESTIMATED QUANTITIES

On the Bid Document, JEA sets forth anticipated quantities, or estimates of anticipated purchase volumes by JEA. JEA anticipates that these quantities are reasonable and will not be exceeded. During the Bid process, if the Bidder finds any discrepancy greater than ten percent (10%) of the estimated quantity, the Bidder shall notify the JEA Representative in writing of the discrepancy. JEA will check the estimated quantity and if it is found to exceed ten percent (10%) of the estimated quantity, JEA will issue an Addendum to all Bidders.

After Award of the Contract, JEA will make payments upon the actual quantities of Work provided and JEA shall not be obligated, in any way, to pay any amounts for quantities other than those actually provided and authorized under this Contract, regardless of amount stated in the Solicitation. In the event that quantities or scope of work change after Award, the changes to price and/or scope shall be made in accordance with the terms and conditions stated in the Contract Document.
Any item not shown on the Bid Document, but shown in the drawings or Technical Specifications section, that is required to perform the Work, or that is required as part of a complete and operable system, shall be included in the Bid Price.

1.3.14. ETHICS (IFB)

By signing the Bid Form, the Bidder certifies this Bid is made without any previous understanding, agreement or connection with any other person, firm, or corporation submitting a Bid for the same Work other than as a Subcontractor or supplier, and that this Bid is made without outside control, collusion, fraud, or other illegal or unethical actions. The Bidder shall comply with all JEA and City of Jacksonville ordinances, policies and procedures regarding business ethics.

The Bidder shall submit only one Bid in response to this Solicitation. If JEA has reasonable cause to believe the Bidder has submitted more than one Bid for the same Work, other than as a Subcontractor or subsupplier, JEA shall disqualify the Bid and may pursue debarment actions.

The Bidder shall disclose the name(s) of any public officials who have any financial position, directly or indirectly, with this Bid by completing and submitting the Conflict of Interest Certificate Form available at jea.com. If JEA has reason to believe that collusion exists among the Bidders, JEA shall reject any and all Bids from the suspected Bidders and will proceed to debar Bidder from future JEA Awards in accordance with the JEA Purchasing Code.

JEA is prohibited by its Charter from awarding contracts to JEA officers or employees, or in which a JEA officer or employee has a financial interest. JEA shall reject any and all Bids from JEA officers or employees, as well as, any and all Bids in which a JEA officer or employee has a financial interest.

In accordance with Florida Statutes Sec. 287.133, JEA shall reject Bids from any persons or affiliates convicted of a public entity crime as listed on the Convicted Vendor list maintained by the Florida Department of Management Services. JEA shall not make an Award to any officer, director, executive, partner, shareholder, employee, member, or agent active in management of the Bidder listed on the Convicted Vendor list for any transaction exceeding $35,000 for a period of 36 months from the date of being placed on the Convicted Vendor list.

If the Bidder violates any requirement of this clause, the Bid may be rejected and JEA may debar offending companies and persons.

1.3.15. FLORIDA TRENCH SAFETY ACT

If required, the Bidder shall complete and submit with its Bid the Florida Trench Safety Act Acknowledgment form, in accordance with Florida Statutes when the Work includes trench excavations that exceed five feet in depth and as written assurance that the Bidder shall comply with all applicable trench safety standards, laws, rules and regulations during performance of any Work awarded from this Solicitation.

1.3.16. MATHEMATICAL ERRORS

In the event of a mathematical error in calculation of the prices entered on the Bid Form, the Unit Prices will prevail. The corrected Bid Price utilizing the Unit Prices will be used to determine if the Company is Awarded the Work or the Services. Subsequently, the Unit Prices will be used throughout the term of the Contract.

1.3.17. AVAILABILITY OF BIDS AFTER BID OPENING

In accordance with the Florida Public Records Law, Florida Statutes, Chapter 119, copies of all Bids are available for public inspection thirty (30) days after the opening of Bids or on the date of Award announcement, whichever is earlier. Bidders may review opened Bids once they are available for public inspection by contacting the designated Buyer or JEA's Public Records custodian whose contact information can be found at jea.com. JEA will post a summary of the Bid results immediately after the Bid opening.

1.3.18. PROTEST OF BIDDING AND AWARD PROCESS

Companies shall file any protests regarding this Solicitation in writing, in accordance with the JEA Purchasing Code, as amended from time to time. The JEA Purchasing Code is available online at jea.com.

1.3.19. LISTING OF SUBCONTRACTORS

JEA shall specify the major Subcontractors that the Company must list is the Company intends to use a Subcontractor to perform a portion of the Work, unless the Work will be self-performed by the Company. The Subcontractors that JEA requires to be listed is stated in the Section titled "Required Forms to Be Submitted with the Bid". The major Subcontractors shall be listed on the Subcontractors Form which is available at jea.com. Failure of the Company to submit the required Subcontractor information on the form with its Bid shall result in rejection of the Company's Bid.

The Company shall not use Subcontractors and subsuppliers/shop fabricators other than those shown on the Subcontractor Form unless it shows good cause and obtains the JEA Representative's prior written consent.
If the Company plans to use Subcontractors or subsupplier/shop fabricators to perform over 50% of the Work, the Company shall obtain JEA's approval at least five (5) days prior to the Bid/Proposal Due Date. @ Failure to obtain JEA approval will disqualify the Company and result in rejection of Company's Bid/Proposal.

1.3.20. CERTIFICATION AND REPRESENTATIONS OF THE BIDDER

By signing and submitting a Bid, the Bidder certifies and represents as follows:

A. That it has carefully examined all available records and conditions, including sites if applicable, and the requirements and specifications of this Solicitation prior to submitting its Bid. Where the Bidder visits sites, no Work or other disturbance is to be performed while at the site without written permission by JEA in advance of the site visit. The Bidder shall comply with all safety requirements described in the Solicitation and shall be prepared to show proof of insurance

B. That every aspect of its submitted Bid, including the Bid Price and the detailed schedule for the execution of the Work, are based on its own knowledge and judgment of the conditions and hazards involved, and not upon any representation of JEA. JEA assumes no responsibility for any understanding or representation made by any of its representatives during or prior to execution of the Contract unless such understandings or representations are expressly stated in the Contract and the Contract expressly provides that JEA assumes the responsibility.

C. That the individual signing the Bid Documents is a duly authorized agent or officer of the firm. Bids submitted by a corporation must be executed in the corporate name by the President or Vice President. If an individual other than the President or Vice President signs the bid, satisfactory evidence of authority to sign may be requested by JEA. If the Bid is submitted by a partnership, the bid must be signed by a partner whose title must appear under the signature. If an individual other than a partner signs the bid, satisfactory evidence of authority to sign may be requested by JEA. The corporation or partnership must be in active status at the Florida Division of Corporations at the time of contract execution.

D. That the firm maintains an active status any and all licenses, permits, certifications, insurance, bonds and other credentials including, but not limited to, contractor's license and occupational licenses necessary to perform the Work. The Bidder also certifies that, upon the prospect of any change in the status of applicable licenses, permits, certifications, insurances, bonds or other credentials, the Bidder shall immediately notify JEA of status change.

E. That Bidder has read, understands these instructions and will comply with the Section titled Ethics.

1.3.21. CONFLICT OF INTEREST (CONSTRUCTION)

This conflict of interest policy applies to all JEA construction projects ("Project"). Any company bidding the construction phase of a Project cannot at the time of Bid submittal, be affiliated with or have any direct or indirect ownership interest in the architect/engineer ("Designer") of record. The company will also be prohibited from bidding if the Designer has any direct or indirect ownership interest in the Contractor. Should JEA erroneously award a contract in violation of this policy, JEA may terminate the contract at any time with no liability to company, and company shall be liable to JEA for all damages, including but not limited to the costs to rebid the Project. The purpose of this policy is to encourage bidding and eliminate any actual or perceived advantage that one Bidder may have over another.

1.3.22. CONSTRUCTION AND DEMOLITION DEBRIS

The Bidder shall complete and submit the Construction and Demolition Debris Disposal form which is available at www.jea.com. The Bidder shall identify, by the Certificate of Necessity number and Public Works number, the sites

to which it will remove for disposal debris resulting from the Work. A list of approved sites may be obtained from the JEA Office Section or jea.com.

1.3.23. UNABLE TO SUBMIT BID FORMS

If you elect not to submit a Bid in response to this Solicitation, please complete the Unable to Submit Bid Form, available for download at www.jea.com, or by obtaining a hardcopy from the JEA Bid Office, 21 West Church St., Customer Center 1st Floor, Room 002, Jacksonville, FL 32202. The Bidder may contact the Bid Office by phone at (904) 665-6740.

Send the completed Unable to Submit Bid Form to:

JEA Bid Office
21 West Church St., CC-1, Room 002
Jacksonville, FL 32202
or fax the Unable to Submit Bid Form to: (904) 665-7095.

Do not return the entire Solicitation package; simply return the Unable to Submit Bid Form.

2. CONTRACT TERMS AND CONDITIONS

2.1. CONTRACT DOCUMENT AND TERMS AND CONDITIONS

Provided below are the Contract terms and conditions that will be incorporated by reference in the Contract Document executed by the Company and JEA. The Contract Document will incorporate by reference the terms contained in the Solicitation portion of this document provided in Section 1, the Contract Terms provided in Section 2; and the Technical Specifications provided in Section 3. An example of the Contract that the Company will be required to execute is available for review at jea.com.

2.2. DEFINITIONS

2.2.1. DEFINITIONS

Words and terms defined in this section shall have the same meaning throughout all parts of this Solicitation and Contract Documents. Where intended to convey the meaning consistent with that set forth in its definition, a defined word or term is marked by initial capitalization. The "Technical Specifications" portion of this Solicitation may define additional words and terms where necessary to clarify the Work. Unless otherwise stated in this Solicitation and/or Contract Documents, definitions set forth in the "Technical Specifications" shall apply only within the "Technical Specifications."

2.2.2. ACCEPTANCE

JEA's written notice by the Contract Administrator to the Company that all Work as specified in the Contract, or a portion of the Work as specified in a Task or Work Order, has been completed to JEA's satisfaction. Approval or recognition of the Company meeting a Milestone or interim step does not constitute Acceptance of that portion of Work. Acceptance does not in any way limit JEA's rights under the Contract or applicable laws, rules and regulations.

2.2.3. ADDENDUM/ADDENDA

A written change or changes to the Solicitation which is issued by JEA Procurement Services and is incorporated into the Solicitation as a modification, revision and/or further clarification of the intent of the Solicitation.

2.2.4. ADMINISTRATIVE WORK

Actions primarily performed in an office environment and associated with preparing to perform or administer the Work including, but not limited to, preparing Work schedules, obtaining bonds, executing Contracts, securing resources and other actions specified in the Solicitation, or otherwise prudent to ensure a timely, safe and otherwise compliant start and performance of Field Work. Administrative Work is not performed at the Work Location.

2.2.5. ANNIVERSARY DATE

The date which is twelve (12) months after the effective date of the Contract, and each date which is twelve (12) months after an Anniversary Date that occurs while the Contract is in effect.

2.2.6. APPLICATION FOR PAYMENT

The form required for payment which shall include all items required pursuant to the contract for the payment to be processed by JEA. Such form shall require the Contractor expressly state that the Contractor has fulfilled all obligations for the previous payments issued to the Contractor, including payment for subcontractors and materials. The Application for Payment includes all forms and supporting documentation as required by the Contract documents.

2.2.7. APPROVED SCHEDULE

A Critical Path Method Schedule or a Summary Schedule for the Work approved in writing by the Contract Administrator.

2.2.8. AWARD

The written approval of the JEA Awards Committee that the procurement process for the purchase of the Work was in accordance with the JEA Procurement Code and Florida Statutes. Once an Award is approved, JEA will either issue a Purchase Order or execute a Contract with the successful bidder or proposer.

2.2.9. BID DOCUMENTS

The forms required to be submitted to JEA as the Company's offer to perform the Work or Services described herein. The Bid Documents can include, but is not limited to, the Bid Form, Bid Workbook, Minimum Qualifications Form, certifications and/or other required submittals. The Bid Documents may also be referred to as the "Bid Form".

2.2.10. BID OR PROPOSAL

The document describing the Bidder's offer submitted in response to this Solicitation. Bid and Proposal shall be considered synonymous for the purpose of this Contract.

2.2.11. BID PRICE

The total dollar amount of the Bidder's offer to successfully perform the Work or Services in accordance with the Contract Documents.

2.2.12. BIDDER OR PROPOSER

The respondent to this Solicitation. Bidder and Proposer shall be considered synonymous for the purpose of this Solicitation.

2.2.13. CHANGE ORDER

A written order issued after execution of the Contract to the Company signed by the Contract Administrator, or his designated representative, authorizing an addition, deletion, or revision of the Work, or an adjustment in the Contract Price or the Contract Time. Change Orders do not authorize expenditures greater than the monies encumbered by JEA, which is shown on the associated Purchase Order(s). An executed Change Order resolves all issues related to price and

time for the Work included in the Change Order. A Change Order that involves a material change to the Contract may result in a Contract Amendment.

2.2.14. COMPANY

The legal person, firm, corporation or any other entity or business relationship with whom JEA has executed the Contract. Where the word "Company" is used it shall also include permitted assigns. Prime Contractor, Contractor, Vendor, Supplier and Company shall be considered synonymous for the purpose of the Contract.

2.2.15. COMPANY REPRESENTATIVE

The individual responsible for representing the Company in all activities concerning the fulfillment and administration of the Contract.

2.2.16. COMPANY SUPERVISOR

The individual, employed or contracted by the Company, to manage the Work on a day-to-day basis and ensure the Work is performed according to the Contract. The Company Supervisor may be authorized by the Company Representative to act on Contract matters. Such authorization shall be in writing and delivered to the Contract Administrator and shall clearly state the limitations of any such authorization. In the event that the Company Supervisor and the Company Representative is the same person, the Company shall notify the Contract Administrator of such situation.

2.2.17. CONTRACT

An agreement between JEA and the Company, signed by both parties, which incorporates all the Contract Documents. The Contract shall not be altered without an Amendment to the Contract and executed by JEA and the Company, or a JEA issued Change Order.

2.2.18. CONTRACT ADMINISTRATOR

The individual assigned by JEA to have authority to administer the Contract, including the authority to negotiate all elements of the Contract with the Company, authorize Change Orders within the maximum amount awarded, terminate the Contract, seek remedies for nonperformance including termination, and otherwise act on behalf of JEA in all matters regarding the Contract. The Contract Administrator may authorize JEA Representative in writing to make minor changes to the Work with the intent of preventing Work disruption.

2.2.19. CONTRACT DOCUMENTS

Contract Documents, also referred to as the "Contract" means the executed Contract, all Solicitation documents and Bid Documents as further described in the Section of the Solicitation titled "Contract Documents", and any written Change Orders, amendments or Purchase Orders executed by JEA, and insurance and/or bonds as required by the Contract.

2.2.20. CONTRACT PRICE

The total amount payable to the Company during the initial Term of the Contract. However, this amount is not a guaranteed amount. Also referred to as the "Maximum Indebtedness" of JEA.

2.2.21. CONTRACT TIME (CONSTRUCTION)

The number of calendar days or the period of time from when the written Purchase Order is issued to the Company to Substantial Completion and Acceptance of the Work.

2.2.22. CONTRACTOR

The legal person, firm, corporation or any other entity or business relationship with whom JEA has executed the Contract. Where the word "Contractor" is used it shall also include permitted assigns. Contractor and Company shall be considered synonymous for the purpose of the Contract.

2.2.23. CRITICAL PATH METHOD (CPM) SCHEDULE

A schematic display of the sequential and logical relationship of all activities that comprise the Work. Using a combination of duration, early and late start dates, and early and late finish dates, a critical path is established as the path of interdependent activities that must be sequentially performed and that require a longer total time to perform than any other such series. CPM Schedules suitable for use on this Contract use GANNT Precedence formats.

2.2.24. CUSTOMER SERVICE PLAN

The Company's plan to achieve customer satisfaction requirements as determined by JEA and JEA Project Outreach, which shall include, as a minimum, the name and office phone number, cell phone number, email address, Nextel Direct Connect number, and fax number of Company's Customer Service Representative, a detailed flow chart on how the Company will handle customer concerns, preemptive customer satisfaction control measures (such as door hangers provided by JEA, and neighborhood meetings in conjunction with JEA staff) and a plan to reduce the number of customer concerns surrounding construction Work addressing, as a minimum, the construction practices that will eliminate damage to customers' property including, but not limited to, cracked driveways, tire ruts in customers' yards, blocking customers' access to driveways, cutting customers' services during tie-in, excessive noise from construction equipment, and elimination of dust during construction Work.

2.2.25. DEFECT

Work that fails to reach Acceptance, or Work that fails meet the requirements of any required test, inspection or approval, and any Work that meets the requirements of any test or approval, but nevertheless does not meet the requirements of the Contract Documents.

2.2.26. ENVIRONMENTAL REGULATIONS

All laws, ordinances, statutes, codes, rules, regulations, agreements, judgments, orders, and decrees, now or hereafter enacted, promulgated, or amended, of the United States, the states, the counties, the cities, or any other political subdivisions in which the Work Location is located, and any other political subdivision, agency or instrumentality exercising jurisdiction over JEA, the Work Location, or the use of the Work Location, relating to pollution, the protection or regulation of human health, natural resources, or the environment, or the emission, discharge, release or threatened release of pollutants, contaminants, chemicals, or industrial, toxic or hazardous substances or waste or Hazardous Materials (as defined in this Contract) into the environment (including, without limitation, ambient air, surface water, ground water or land or soil).

2.2.27. EQUAL ITEM

Item a Bidder chooses to offer in place of offering the brand name or manufacturer's item specified on the Bid Document when the Bid Document clearly states that the Bidder may offer such an item.

2.2.28. FIELD WORK

Actions associated with meeting the requirements of the Contract other than Administrative Work. Field Work is primarily performed at the Work Location.

2.2.29. FINAL COMPLETION

The point in time after JEA makes the determination that the Work is completed and there is Acceptance by JEA, and the Company has fulfilled all requirements of the Contract Documents.

2.2.30. FINAL PAYMENT

The Final Payment for all Work performed. Final Payment shall not be made until the Company has complied with all the Contract requirements, and provided as necessary close-out documents as contained in the Contract.

2.2.31. HAZARDOUS MATERIALS

Any substance which is or contains (i) any "hazardous substance" as now or hereafter defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. '9601 et seq.) ("CERCLA") or any regulations promulgated under or pursuant to CERCLA; (ii) any "hazardous waste" as now or hereafter defined in the Resource Conservation and Recovery Act (42 U.S.C. '6901 et. seq.) ("RCRA") or regulations promulgated under or pursuant to RCRA; (iii) any substance regulated by the Toxic Substances Control Act (15 U.S.C. '2601 et seq.); (iv) gasoline, diesel fuel, or other petroleum hydrocarbons; (v) asbestos and asbestos containing materials, in any form, whether friable or non-friable; (vi) polychlorinated biphenyls; (vii) radon gas; and (viii) any additional substances or materials which are now or hereafter classified or considered to be hazardous or toxic under Environmental Requirements (as hereinafter defined) or the common law, or any other applicable laws relating to the Licensed Property. Hazardous Materials shall include, without limitation, any substance, the presence of which on the Licensed Property, (A) requires reporting, investigation or remediation under Environmental Requirements; (B) causes or threatens to cause a nuisance on the Licensed Property or adjacent property or poses or threatens to pose a hazard to the health or safety of persons on the Licensed Property or adjacent property; or (C) which, if it emanated or migrated from the Licensed Property, could constitute a trespass.

2.2.32. HOLIDAYS

The following days: New Year's Day, Martin Luther King Jr. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve Day, and Christmas Day.

2.2.33. INVOICE

A document seeking payment to Company from JEA for all or a portion of the Work, in accordance with the Contract Documents, and including at a minimum the following items: the Company's name and address, a description of the product(s) or service(s) rendered, a valid JEA PO number, the amount payable, the Unit Price, the payee name and address, any associated JSEB forms and any other supporting documentation required by the Contract Documents.

2.2.34. JEA

JEA on its own behalf, and when the Work involves St. Johns River Power Park (SJRPP), as agent for Florida Power and Light Company (FPL). JEA and FPL are co-owners of SJRPP.

2.2.35. JEA ENGINEER

The individual assigned by JEA (either an employee or a third party) to provide licensing, engineering, design review, and/or construction management including, but not limited to, overseeing and resolving engineering/design issues, conveying JEA's instructions to the Company and enforcing the faithful performance of the Work. The JEA Engineer's authority includes interpreting the technical portion of the Contract Documents, deciding on matters relating to the execution and progress of the Work and evaluating the Company's performance. The JEA Engineer may stop the Work when deemed necessary by JEA. The JEA Engineer will receive and adjudicate any claim of ambiguity or error in the technical portion of the Contract Documents and shall reduce any determination to writing, and the decision shall be final and binding. The JEA Engineer is not a party to the Contract. The JEA Engineer has no authority to approve

changes to the Work or Contract, or to commit JEA to any expenditure of money except as expressly designated in writing by the Contract Administrator.

2.2.36. JEA INSPECTOR

The individual(s) or company(ies) designated by the Contract Administrator to inspect and test the Company's performance and Contract compliance including materials, workmanship, safety, environmental compliance, JSEB compliance, project controls, administration and accounting, and other aspects of Contract compliance. The JEA Inspector has no authority to approve changes to the Work or Contract, or to commit JEA to any expenditure of money except as expressly designated in writing by the Contract Administrator.

2.2.37. JEA REPRESENTATIVES

The Contract Administrator, Contract Inspector, Contract Administrator's Representative, JEA Engineer, Field Engineer, Project Manager, and other persons designated by the Contract Administrator as JEA Representatives acting in a capacity related to the Work or Contract under the authority of the Contract Administrator.

2.2.38. LUMP SUM BULK BID PRICE

The total amount payable to the Company under the Contract Documents for performing the bulk bid Work.

2.2.39. MILESTONE

A point in time representing a key or important intermediate event in the Work. A Milestone is to be capable of validation by meeting all of the items prescribed in a defining checklist as agreed to in writing by JEA.

2.2.40. NOTICE TO PROCEED

The written notice, duly authorized and delivered by JEA that authorizes the Company to begin the Work. The Notice to Proceed is normally issued in the form of a Purchase Order, unless otherwise specified in the Contract Documents.

2.2.41. OVERTIME

Work approved in writing by the Contract Administrator that is required to be performed beyond an employee's scheduled workday or work week, including Work performed on Holidays.

2.2.42. PAYMENT AND PERFORMANCE BONDS

The common-law Performance Bond and the statutory Payment Bond contemplated by Section 255.05, Florida Statutes in the form required by JEA.

2.2.43. PRE-WORK MEETING

A meeting conducted after Award and prior to the start of any Field Work between JEA and the Company. The purpose of the meeting may include, but is not limited to orientation, schedule, certification and permitting, and other preparatory or Work execution details.

2.2.44. PERFORMANCE - ACCEPTABLE PERFORMANCE/PERFORMER

The Company averages more than 2.80 and less than 4.0 across all performance scorecard evaluation metrics, and does not receive a score of less than 2.0 on any metric.

2.2.45. PERFORMANCE - TOP PERFORMANCE/PERFORMER

The Company averages 4.0 or more across all scorecard evaluation metrics and does not receive a score of less than 4.0 on any one metric.

2.2.46. PERFORMANCE - UNACCEPTABLE PERFORMANCE/PERFORMER

The Company averages less than 2.80 across all scorecard evaluation metrics, or scores a 1.0 on any one metric regardless of average, or receives a score of 2.0 on the same metric on two sequential performance evaluations.

2.2.47. PURCHASE ORDER (PO)

A commercial document issued by JEA, authorizing work, indicating types, quantities, and agreed prices for products or services the Company will provide to JEA. Sending a PO to a Company constitutes a legal offer to buy products or services. The words "Purchase Order" are clearly marked across the top, a PO number is used for reference and invoicing purposes, includes an authorized JEA signature, and states the dollar amount of the lawfully appropriated funds.

2.2.48. QUALITY ASSURANCE

Actions that JEA takes to assess the Company's performance under the Contract.

2.2.49. QUALITY CONTROL

Actions that the Company takes to ensure it successfully completes the Work in full accordance with the Contract Documents.

2.2.50. SCHEDULE

All documentation related to the planning and scheduling of the Work as described in these Terms and Conditions.

2.2.51. SHOP DRAWINGS (DEFINITION)

Drawings, electronic and hard copy, that detail the fabrication, erection, layout and setting drawings; manufacturer's standard drawings; schedules; descriptive literature, catalogs and brochures; performance and test data; wiring and control diagrams; all other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and method of construction as may be required to show the JEA Engineer that the proposed materials, equipment or systems and the position thereof are in compliance with the requirements of the Contract Documents.

2.2.52. SOLICITATION

The documents (which may be electronic) issued by JEA's Procurement Department to solicit Bids from Bidders that includes, but is not limited to, the Bid Documents, Bid Workbook, samples of documents, contractual terms and conditions, the Technical Specifications, and associated Addenda.

2.2.53. SUBCONTRACTOR

The legal person, firm, corporation or any other entity or business relationship that provides a portion of the work, or provides supplies and materials, to the Company which has an executed Contract with JEA. JEA is not in privity of contract with the Subcontractor.

2.2.54. SUBSTANTIAL COMPLETION (DEFINITION)

The time when JEA determines that the Work (or a specified part thereof) is substantially complete, in accordance with the Contract Documents. Additionally, all work other than incidental corrective and incidental punch list work items shall be completed. Substantial Completion shall not have been achieved if all systems and parts are not functional, if utilities are not connected and operating normally, if all required regulatory permits and approvals have not been issued, or if all vehicular and pedestrian traffic routes affected by the Work have not been restored. The date of Substantial Completion shall be established in writing by JEA. Recognition of the Work as Substantially Complete, as evidenced by issuance of a Certificate of Substantial Completion, does not represent JEA's Acceptance of the Work.

2.2.55. SUMMARY SCHEDULE

A diagram displaying the Milestones for the Work graphically positioned on a timeline, showing at a minimum the calendar dates on which each Milestone is scheduled to be completed for Acceptance.

2.2.56. SUPPLEMENTAL WORK AUTHORIZATION (SWA)

A written order, issued at the sole discretion of the JEA representative, which incorporates cost or schedule changes into the Contract. The SWA shall be used for increases or decreases in the Contract Price within the SWA amount set forth on the Bid Form, or to makes changes in the schedule for performance of the Work, or to authorize the Company to perform changes in the Work.

2.2.57. TASK ORDER

A document that describes the Work or describes a series of tasks that the Company will perform in accordance with the Contract Documents. A Task Order may be issued as an attachment to a Purchase Order, but the Task Order is neither a Purchase Order, nor a Notice to Proceed.

2.2.58. TERM

The period of time during which the Contract is in force or until the Contract's Maximum Indebtedness is reached, whichever occurs first.

2.2.59. UNIT PRICES

The charges to JEA for the performance of each respective unit of Work as stated in the Response Workbook, Bid Form, or Proposal Form, and incorporated into the Contract Documents.

2.2.60. WORK LOCATION (DEFINITION)

The place or places where the Work is performed, excluding the properties of the Company and/or the Subcontractor(s).

2.2.61. WORK OR SCOPE OF SERVICES

Work includes as defined in the Contract Documents all actions, products, documentation, electronic programs, reports, testing, transport, administration, management, services, materials, tools, equipment, and responsibilities to be furnished or performed by the Company under the Contract, together with all other additional necessities that are not specifically recited in the Contract, but can be reasonably inferred as necessary to complete all obligations and fully satisfy the intent of the Contract.

2.3. CONTRACT DOCUMENTS

2.3.1. ORDER OF PRECEDENCE

The Contract shall consist of JEA's Contract and/or Purchase Order together with the Solicitation including, but not limited to, the executed Bid Documents, which shall be collectively referred to as the Contract Documents. This Contract is the complete agreement between the parties. Parol or extrinsic evidence will not be used to vary or contradict the express terms of this Contract. The Contract Documents are complementary; what is called for by one is binding as if called for by all. The Company shall inform JEA in writing of any conflict, error or discrepancy in the Contract Documents upon discovery. Should the Company proceed with the Work prior to written resolution of the error or conflict by JEA, all Work performed is at the sole risk of the Company. JEA will generally consider this precedence of the Contract Documents in resolving any conflict, error, or discrepancy:

- Executed Contract Amendments
- Exhibits to Contract Documents
- Executed Contract Documents
- Purchase Order(s)
- Addenda to JEA Solicitation
- Drawings associated with this Solicitation
- Exhibits and Attachments to this Solicitation
- Technical Specifications associated with this Solicitation
- This Solicitation
- Bid Documents
- References

The figure dimensions on drawings shall govern over scale dimensions. Contract and detailed drawings shall govern over general drawings. The Company shall perform any Work that may reasonably be inferred from the Contract as being required whether or not it is specifically called for. Work, materials or equipment described in words that, so applied, have a well-known technical or trade meaning shall be taken as referring to such recognized standards.

2.4. PRICE AND PAYMENTS

2.4.1. PAYMENTS

2.4.1.1. PAYMENT METHOD - SCHEDULE OF VALUES

The Company shall submit to JEA a monthly Application for Payment that details the Work completed during that month. The Company shall request payment in accordance with the amounts/percentages set forth on the Schedule of Values that the Company submitted prior to the start of the Work. The Schedule of Values is defined as an itemized list that establishes the value of each part of the Work for a stipulated price and for major lump sum items in a unit price contract. JEA will determine, either by measurement or approximation, the final quantities incorporated into the Work under items for which Unit Prices are established in the Contract Documents. JEA's determination as to the quantity of the Work successfully completed shall be final.

2.4.2. OFFSETS

In case the Company is in violation of any requirement of the Contract, JEA may withhold payments that may be due the Company, and may offset existing balances with any JEA incurred costs against funds due the Company under this and any other Company Contract with JEA, as a result of the violation, or other damages as allowed by the Contract Documents and applicable law.

2.4.3. DISCOUNT PRICING

JEA offers any or all of the following option payment terms, one of which may be executed at the request of the Company by sending an email to the JEA Buyer listed in this Solicitation:

- 1% 20, net 30
- 2% 10, net 30

Company may request alternate payment terms for JEA's consideration, however, alternate payment terms are not effective until acceptance by JEA in writing. Please note, all payment dates are calculated from the date of the Invoice receipt by JEA's Accounts Payable.

2.4.4. COST SAVINGS PLAN

During the Term of this Contract, JEA and Company are encouraged to identify ways to reduce the total cost to JEA related to the Work provided by the Company ("Cost Savings Plan"). JEA and Company may negotiate Amendments to this Contract that support and allow such reductions in total costs including, but not limited to, the sharing of savings resulting from implementation of cost-reducing initiatives between JEA and Company. The decision to accept any cost savings plan shall be in the sole discretion of JEA, and JEA shall not be liable to Company for any cost that may be alleged to be related to a refusal to accept a Cost Savings Plan proposed by Company.

2.4.5. TAXES

JEA is authorized to self-accrue the Florida Sales and Use Tax and is exempt from Manufacturer's Federal Excise Tax when purchasing tangible personal property for its direct consumption.

2.4.6. GENERAL CONDITIONS/SPECIAL CONDITIONS

The line item shown on the Bid Form titled "General/Special Conditions Lump Sum Price" shall be used for general and special expenses which do not appear as separate line items on the Bid Form, including, but not limited to, costs and expenses related to the following:

- the execution and recording of the Payment and Performance Bonds
- safety requirements
- Quality Control
- preparation of daily reports
- maintenance of traffic
- attendance of meetings, project scheduling
- testing (if not included elsewhere)

Except as provided below for expenses related to Bonds and Surveying, JEA's payment for the General/Special Conditions line item shall be based upon the percentage of Work completed.

Bonds- Company will be permitted to invoice JEA, in its first payment application, for the costs associated with the execution and recording of the Payment and Performance Bonds. The amount paid by JEA for the Payment and Performance Bonds will be deducted from the General/Special Conditions line item total.

Surveying- Prior to construction, the Company will be permitted to invoice JEA for the costs associated with the survey of the existing roadway horizontal alignment. The amount paid by JEA for these costs will be deducted from the General/Special Conditions line item total.

SWA- In the event that JEA authorizes changes to the Work under a Supplemental Work Authorization (SWA), the amount of the Bid Form line item for SWA Allowance will not be increased unless the total value of all SWA Work exceeds the Original SWA Allowance provided on the Bid Form.

2.4.7. JSEB COMPLIANCE

2.4.7.1. COMPLIANCE WITH JSEB REQUIREMENTS

The Company shall achieve the JSEB participation requirements as set forth in the Solicitation, except as allowed under the good faith efforts exception as defined in the City of Jacksonville Ordinance. In no case shall the Company make changes to the JSEB firms listed in its Bid, revise the JSEB scope of Work or amount of Work as stated in its Bid without prior written notice to the Contract Administrator, and without subsequent receipt of written approval from the Contract Administrator.

The City of Jacksonville requirements as outlined in the City of Jacksonville Ordinance relating to JSEBs shall apply in their entirety to this Contract. Where the City of Jacksonville ordinance refers to "Chief", it shall be construed to mean, for purposes of this Contract, JEA's Chief Purchasing Officer. In a like manner, where it refers to "City", or "City of Jacksonville", it shall be construed to mean JEA.

Use of brokering, as defined in the City of Jacksonville Ordinance, or other techniques that do not provide a commercially useful function are strictly prohibited as means of achieving the JSEB requirements of the Contract. Only the amount of fees or commissions charged by a JSEB for providing a bona fide service such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a contract shall be counted towards a JSEB participation requirement, provided the fee is reasonable and not excessive as compared with fees customarily charged for similar services.

Payment terms for participating JSEB firms shall be the same or better than the payment terms the Company receives from JEA, except that in all cases JSEB firms shall be allowed to submit invoices to the Company at least bimonthly, and the Company shall pay proper invoices no later than 3 days after its receipt of JEA payment. The Company shall obtain written approval from the Contract Administrator prior to withholding any payment from JSEB firm.

If the Company uses a JSEB qualified firm for the performance of any part of this Work, the Company shall submit to JEA, with its Invoice, a listing of JSEB qualified firms that have participated in the Work. Such listing shall be made using the form "Monthly Report for COJ/JEA JSEB Participation" available at www.jea.com

The Company agrees to let JEA audit its financial and operating records with one day of notice, and during normal business hours, at its corporate offices for the purpose of determining compliance with all JSEB requirements of the Contract Documents.

If the Company violates any provision regarding JSEB, including, but not limited to, program intent, the Company shall be subject to any or all of the following, plus any other remedies available to JEA under law:

- Terminate the Contract for breach
- Suspend the Company from bidding any JEA projects as follows:
- First offense: six months
- Second offense: one year
- Third offense: three years
- Revoke Company's JSEB certification if the Company itself is certified as a JSEB.

2.4.8. JSEB - INVOICING AND PAYMENT

If the Company utilizes JSEB certified firms, regardless of whether these Contract Documents require or encourage the use of such firms, the Company shall Invoice for and report the use of JSEB certified firms according to the format and guidelines established by the City of Jacksonville.

2.5. SCHEDULES, REPORTING REQUIREMENTS AND LIQUIDATED DAMAGES

2.5.1. LIQUIDATED DAMAGES UNTIL ACCEPTANCE

If the Company fails to obtain Substantial Completion of the Work on or before 63 days after date of Notice to Proceed, the Company shall pay JEA the sum of $1000 per day for each and every calendar day, including Sundays and Holidays, starting on this day until the date the Work is Substantially Completed.

If the Company fails to obtain JEA's Acceptance of the Work on or before 98 days after date of Notice to Proceed, the Company shall pay JEA the sum of $600 per day for each and every calendar day, including Sundays and Holidays, starting on the day the Work was deemed by JEA to be Substantially Complete until the date the Work is Accepted by JEA.

Liquidated Damages are capped at a maximum of ten percent (10%) of the Contract Price.

The Company understands and agrees that said daily sum is to be paid not as a penalty, but as compensation to JEA as a fixed and reasonable liquidated damages for losses that JEA will suffer because of such default, whether through increased administrative and engineering costs, interference with JEA's normal operations, other tangible and intangible costs, or otherwise, which costs will be impossible or impractical to measure or ascertain with any reasonable specificity.

Liquidated damages may, at JEA's sole discretion, be deducted from any monies held by JEA that are otherwise payable to Company.

The Company's responsibility for liquidated damages shall in no way relieve the Company of any other obligations under the Contract.

2.5.2. REPORTING (CONSTRUCTION)

The Company shall provide all reports as defined in the Contract Documents.

Where the reporting frequency is daily, reports shall be submitted by noon of the following workday. Where the reporting frequency is weekly, reports are due by Monday at noon, covering the prior workweek. Where Monday is a Holiday, the reports are due at noon on the next workday. Where reports are due monthly, reports are due by noon on the first business day of each month. Sample forms for reports may be included in the Contract Documents. Where they are included, they are to be used. Where they are not included, the Company shall provide a sample of its proposed report format for each report to the Contract Administrator at least one-week prior to its initial due date. The Contract Administrator will review and either approve or reject use of the report. Where proposed report is rejected, Company shall resubmit revised report formats, until Contract Administrator approves format. Reporting cycle shall begin upon the Purchase Order date, or, if used, the issuance date of the Notice to Proceed.

Where the Contract calls for reports to be submitted by Company, such reports shall be in both paper and electronic format, with the electronic version submitted electronically via email to the Contract Administrator.

2.5.3. WORK SCHEDULES

The Approved Schedule is referenced in the Technical Specifications attached to this Solicitation. If no schedule is provided, then the established schedule is based on working five (5) days per week, single shift, eight (8) hours per day or four (4) days per week, single shift, ten (10) hours per day. JEA may require the Company to base its schedule on an accelerated Work schedule or multiple shifts. The Company shall not schedule work on Holidays without obtaining prior written approval from JEA.

The Company shall, at no additional cost to JEA, increase or supplement its working force and equipment and perform the Work on an overtime or multiple shift basis when directed by JEA and upon notification that the Company is behind schedule. The Company shall submit a revised schedule in writing demonstrating the Company's schedule recovery plans.

The Company understands and agrees that the rate of progress set forth in the Approved Schedule already allows for ordinary delays incident to the Work. No extension of the Contract Term will be made for ordinary delays, inclement weather, or accidents, and the occurrence of such events will not relieve the Company from requirement of meeting the approved schedule.

2.6. WARRANTIES AND REPRESENTATIONS

2.6.1. WARRANTY (CONSTRUCTION)

Unless otherwise stated herein, the Company unconditionally warrants to JEA for a period of not less than Two (2) year(s) from the date of issuance of the Certificate of Substantial Completion, that all Work furnished under the Contract, including but not limited to, materials, equipment, workmanship, and intellectual property, including derivative works will be:

- performed in a safe, professional and workman like manner; and
- free from Defects in design, material, and workmanship; and
- fit for the use and purpose specified or referred to in the Contract; and
- suitable for any other use or purpose as represented in writing by the Contractor; and
- in conformance with the Contract Documents; and
- merchantable, new and of first-class quality.

The Company warrants that the Work shall conform to all applicable standards and regulations promulgated by federal, state, local laws and regulations, standards boards, organizations of the Department of State, and adopted industry association standards. If the Work fails to conform to such laws, rules, standards and regulations, JEA may return the Work for correction or replacement at the Company's expense, or return the Work at the Company's expense and terminate the Contract.

If the Company performs services that fail to conform to such standards and regulations or to the warranties set forth in the first paragraph of this Section, the Company shall make the necessary corrections at Company's expense. JEA may correct any services to comply with standards and regulations at the Company's expense if the Company fails to make the appropriate corrections within a reasonable time after notice of the Defect from JEA.

If Work includes items covered under a manufacturer's or Subcontractor's warranty that exceeds the requirements stated herein, Company shall transfer such warranty to JEA. Such warranties, do not in any way limit the warranty provided by the Company to JEA.

If, within the warranty period, JEA determines that any of the Work is defective or exhibit signs of excessive deterioration, the Company at its own expense, shall repair, adjust, or replace the defective Work to the complete satisfaction of JEA. The Company shall pay all costs of removal, transportation, reinstallation, repair, and all other associated costs incurred in connection with correcting such Defects in the Work. The Company shall correct any Defects only at times designated by JEA. The Company shall extend the warranty period an additional 12 months for any portion of the Work that has undergone warranty repair or replacement, but in no case shall the maximum warranty period be extended beyond thirty six (36) months.

JEA may repair or replace any defective Work at the Company's expense when the Company fails to correct the Defect within a reasonable time of receiving written notification of the Defect by JEA, when the Company is unable to respond in an emergency situation or when necessary to prevent JEA from substantial financial loss. Where JEA makes repairs or replaces defective Work, JEA will issue the Company a written accounting and invoice of all repair work required to correct the Defects.

Where spare parts may be needed, Company warrants that spare parts will be available to JEA for purchase for at least 75 percent of the stated useful life of the product.

The Company's warranty excludes any remedy for damage or Defect caused by abuse, improper or insufficient maintenance, improper operation, or wear and tear under normal usage.

Note that JEA intends to perform a warranty inspection prior to the expiration of the warranty period. JEA will notify the Company and the Company Representative shall attend the inspection. All discrepancies identified at said inspection shall be corrected by the Company within a reasonable timeframe.

2.7. INSURANCE, INDEMNITY AND RISK OF LOSS

2.7.1. INSURANCE

INSURANCE REQUIREMENTS
Before starting and until acceptance of the Work by JEA, and without further limiting its liability under the Contract, Company shall procure and maintain at its sole expense, insurance of the types and in the minimum amounts stated below:

Workers' Compensation

Florida Statutory coverage and Employer's Liability (including appropriate Federal Acts); Insurance Limits: Statutory Limits (Workers' Compensation) $500,000 each accident (Employer's Liability).

Commercial General Liability

Premises-Operations, Products-Completed Operations, Contractual Liability, Independent Contractors, Broad Form Property Damage, Explosion, Collapse and Underground, Hazards (XCU Coverage) as appropriate; Insurance Limits: $1,000,000 each occurrence, $2,000,000 annual aggregate for bodily injury and property damage, combined single limit.

Automobile Liability

All autos-owned, hired, or non-owned; Insurance Limits: $1,000,000 each occurrence, combined single limit.

Excess or Umbrella Liability

(This is additional coverage and limits above the following primary insurance: Employer's Liability, Commercial General Liability, and Automobile Liability); Insurance Limits: $4,000,000 each occurrence and annual aggregate.

Company's Commercial General Liability and Excess or Umbrella Liability policies shall be effective for two years after Work is complete. The Indemnification provision provided herein is separate and is not limited by the type of insurance or insurance amounts stated above.

Company shall specify JEA and Florida Power & Light Company as additional insured for all coverage except Workers' Compensation and Employer's Liability. Such insurance shall be primary to any and all other insurance or self-insurance maintained by JEA. Company shall include a Waiver of Subrogation on all required insurance in favor of JEA, FPL, their board members, officers, employees, agents, successors and assigns.

Such insurance shall be written by a company or companies licensed to do business in the State of Florida and satisfactory to JEA. Prior to commencing any Work under this Contract, certificates evidencing the maintenance of the insurance shall be furnished to JEA for approval. Company's and its subcontractors' Certificates of Insurance shall be mailed to JEA (Attn. Procurement Services), Customer Care Center, 6th Floor, 21 West Church Street, Jacksonville, FL 32202-3139.

The insurance certificates shall provide that no material alteration or cancellation, including expiration and non-renewal, shall be effective until 30 days after receipt of written notice by JEA.

Any subcontractors of Company shall procure and maintain the insurance required of Company hereunder during the life of the subcontracts. Subcontractors' insurance may be either by separate coverage or by endorsement under insurance provided by Company. Note: Any JSEB firms identified by Bidders for this Solicitation are considered "Subcontractors" under the direct supervision of the Prime or General Contractor (herein referred to as "Company"). Companies should show good faith efforts in providing assistance to JSEB firms in the securing of the Subcontractors' insurance requirements stated herein. Company shall submit subcontractors' certificates of insurance to JEA prior to allowing Subcontractors to perform Work on JEA's job sites.

Builder's Risk

During construction of the Northside (NGS) Substation Bay Addition and St. Johns River Power Park (hereinafter referred as SJRPP) Station Service Conversion (hereinafter referred to as "Projects"), JEA shall provide All Risk Builder's Risk insurance at its sole expense (insurance premiums and insurance deductibles unless otherwise specified in this Section 2.7.1) for itself, Company and its Subcontractors of all tiers while performing Work at JEA's Project sites (JEA's Northside Generating Station (hereinafter referred to as NSGS), 4377 Heckscher Drive, Jacksonville, FL 32226 and St. Johns River Power Park (SJRPP), 11201 New Berlin Road, Jacksonville, FL 32226). The planned period of coverage for this Builder's Risk insurance is estimated to begin on or about October 1, 2017. JEA shall obtain a Waiver of Subrogation on this Builder's Risk insurance in favor of Company and its Subcontractors, including their employees, agents, successors and assigns. Certificates of Insurance shall be issued to Company and its Subcontractors on request to JEA's Director Risk Management Services at (904) 665-7781. JEA's Builder's risk insurance does not provide coverage for loss or damage for either: (a) Comp Company's or its Subcontractors' tools, equipment, personal property, protective fencing, scaffolding, temporary structures, framework, forms and equipment owned, leased, rented or borrowed by Company and its Subcontractors or (b) materials, supplies and equipment in transit to JEA's Project sites or located on JEA's Project sites which does not become a permanent part of JEA's NSGS or SJRPP. JEA's Builder's Risk insurance shall be excess above any other property insurance or self-insurance maintained by vendors and suppliers who have agreed to be responsible for risk of loss for JEA's equipment, materials and supplies (F.O.B. destination: JEA's Project site).

Company and its Subcontractor shall be responsible to reimburse JEA for the first $100,000 (each occurrence) of any property damage to the Work at JEA's Project sites, including JEA's existing Facilities (NSGS and SJRPP), caused by the negligence, error or omission of Company and its Subcontractors. This reimbursement requirement applies regardless if an insurance claim is submitted to Factory Mutual Insurance Company above JEA's Builder's Risk property insurance deductibles. All other insurance deductibles are the responsibility of JEA.

2.7.2. TITLE AND RISK OF LOSS

JEA will retain the title to equipment and materials removed from JEA sites for repairs, service or duplication.

The Company shall assume all risk of loss or damage to the Work until such time that JEA issues written notice of Final Acceptance, subject to JEA's Builder's Risk Insurance Section 2.7.1 of this Solicitation.

JEA's receipt or delivery of any equipment or other materials will not constitute JEA's Final Acceptance of any such items and will not constitute a waiver by JEA of any right, claim or remedy.

Ownership of the Work shall pass to JEA upon written notice of Final Acceptance.

2.7.3. BOND AMOUNT

The Company shall furnish a Payment Bond and Performance Bond in the amount of indicated on the Bid Form, made out to JEA in forms and formats approved and provided by JEA, as security for the faithful performance of the Work of Contract. JEA will send the approved bond forms to the Company for execution along with the Contract, however, in no case shall the date on the bond forms be prior to that of the executed Contract. The surety must be authorized and licensed to transact business in Florida. A fully executed Payment Bond and Performance Bond must be recorded with the Clerk of Duval County Court and delivered to JEA before JEA will issue a Purchase Order to begin the Work. No Purchase Order shall be issued until the Payment and Performance Bonds are recorded and delivered to the JEA Procurement Department. If the Company fails or refuses to furnish or record the required bonds, JEA will retain the Company's Bid Bond as liquidated damages.

2.7.4. ENVIRONMENTAL INDEMNIFICATION

The Company shall hold harmless and indemnify JEA and Florida Power and Light (FPL), including without limitation, its officers, directors, members, representatives, affiliates, agents and employees, successors and assigns (the "Indemnified Parties") and will reimburse the Indemnified Parties from and against any and all claims, suits, demands, judgments, losses, costs, fines, penalties, damages, liabilities and expenses (including all costs of cleanup, containment or other remediation, and all costs for investigation and defense thereof including, but not limited to, court costs, reasonable expert witness fees and attorney fees) arising from or in connection with (a) the Company's, including, but not limited to, its agents, affiliates or assigns ("Parties"), actions or activities that result in a violation of any environmental law, ordinance, rule, or regulation or that leads to an environmental claim or citation or to damages due to the Company's or other Parties' activities, (b) any environmental, health and safety liabilities arising out of or relating to the operation or other activities performed in connection with this Contract by the Company or any Party at any time on or after the effective date of the Contract, or (c) any bodily injury (including illness, disability and death, regardless of when any such bodily injury occurred, was incurred or manifested itself), personal injury, property damage (including trespass, nuisance, wrongful eviction and deprivation of the use of real property) or other damage of or to any person in any way arising from or allegedly arising from any hazardous activity conducted by the Company or any Party. JEA and FPL will be entitled to control any remedial action, any proceeding relating to an environmental claim. This indemnification agreement is separate and apart from, and is in no way limited by, any insurance provided pursuant to this Contract or otherwise. This section relating to indemnification shall survive the Term of this Contract, and any holdover and/or Contract extensions thereto, whether such Term expires naturally by the passage of time or is terminated earlier pursuant to the provisions of this Contract.

2.7.5. INDEMNIFICATION (SJRPP)

For ten dollars ($10.00) acknowledged to be included and paid for in the contract price and other good and valuable considerations, the Company shall hold harmless and indemnify JEA and Florida Power and Light Company (hereinafter referred to as FPL), against any claim, action, loss, damage, injury, liability, cost and expense of whatsoever kind or nature (including, but not by way of limitation, reasonable attorney's fees and court costs) arising out of injury (whether mental or corporeal) to persons, including death, or damage to property, arising out of or incidental to the negligence, recklessness or intentional wrongful misconduct of Company and any person or entity used by the Company in the performance of this Contract or Work performed thereunder. For purposes of this Indemnification, the term "JEA" shall mean JEA as a body politic and corporate and shall include its governing board, officers, employees, agents, successors and assigns. For purposes of this Indemnification, FPL has been included with JEA, as co-owner for their St. Johns River Power Park facility (hereinafter referred to SJRPP). The term "FPL" shall

include its governing board, officers, employees, agents, successors and assigns. This indemnification shall survive the term of a Contract entered into pursuant to this solicitation, for events that occurred during the Contract term. This indemnification shall be separate and apart from, and in addition to, any other indemnification provisions set forth elsewhere in this Contract.

2.7.6. NOTIFICATION OF SURETY

The Company shall notify its surety of any changes affecting the general scope of the Work or altering the Contract Price. The amount of the applicable bonds shall be adjusted accordingly and the Company shall furnish proof of such adjustment to JEA within ten (10) days of date of Purchase Order.

2.8. ACCEPTANCE

2.8.1. DELAY IN ACCEPTANCE OR DELIVERY

JEA may delay delivery or acceptance of goods in the event of any unforeseen event. The Company shall hold the goods pending JEA's direction, and JEA will be liable only for direct increased costs incurred by the Company by reason of JEA's instructions.

2.8.2. ACCEPTANCE OF WORK - RECEIPT, INSPECTION, USAGE AND TESTING

The Contract Administrator will make the determination when Work is completed and there is Acceptance by JEA. Acceptance will be made by JEA only in writing, and after adequate time to ensure Work is performed in accordance with Contract Documents. JEA will reject any items delivered by Company that are not in accordance with the Contract, and shall not be deemed to have accepted any items until JEA has had reasonable time to inspect them following delivery or, if later, within a reasonable time after any latent defect in the items has become apparent. JEA may partially accept the Work items. If JEA elects to accept nonconforming items, it may in addition to other remedies, be entitled to deduct a reasonable amount from the price as compensation for the nonconformity. Any Acceptance by JEA, even if nonconditional, shall not be deemed a waiver, or settlement or acceptance of any Defect.

Items specifically required prior to Acceptance are: **Energized Substation, Post construction walk through, Contractor cleanup and demobilized, as-builts submitted.**

2.9. TERM AND TERMINATION

2.9.1. TERM

2.9.1.1. TERM OF CONTRACT - THROUGH COMPLETION OF WORK

The Contract shall be in force through completion of all Work, Acceptance and final payment, including resolution of all disputes, claims, or suits, if any. Certain provisions of this Contract may extend past termination including, but not limited to, Warranty and Indemnification provisions.

This Contract, after the initial year, shall be contingent upon the existence of lawfully appropriated funds for each subsequent year of the Contract.

2.9.2. TERMINATION FOR CONVENIENCE

JEA shall have the absolute right to terminate the Contract in whole or part, with or without cause, at any time after the Award effective date upon written notification of such termination.

In the event of termination for convenience, JEA will pay the Company for all disbursements and expenses that the Company has incurred, or has become obligated prior to receiving JEA's notice of termination.

Upon receipt of such notice of termination, the Company shall stop the performance of the Work hereunder except as may be necessary to carry out such termination and take any other action toward termination of the Work that JEA may reasonably request, including all reasonable efforts to provide for a prompt and efficient transition as directed by JEA.

JEA will have no liability to the Company for any cause whatsoever arising out of, or in connection with, termination including, but not limited to, lost profits, lost opportunities, resulting change in business condition, except as expressly stated within these Contract Documents.

2.9.3. SUSPENSION OF WORK

JEA may suspend the performance of the Work by providing the Company with five days' written notice of such suspension. Schedules and compensation for performance of the Work shall be amended by mutual agreement to reflect such suspension. In the event of suspension of Work, the Company shall resume full performance of the Work when JEA gives written direction to do so. Suspension of Work for reasons other than the Company's negligence or failure to perform, shall not affect the Company's compensation as outlined in the Contract Documents.

2.9.4. TERMINATION FOR DEFAULT (WITH A BOND)

JEA may give the Company written notice to discontinue all or part of the Work under the Contract or a Notice to Cure a material breach in the event that:

- The Company assigns or subcontracts the Work without prior written permission;
- Any petition is filed or any proceeding is commenced by or against the Company for relief under any bankruptcy or insolvency laws;
- A receiver is appointed for the Company's properties or the Company commits any act of insolvency (however evidenced);
- The Company makes an assignment for the benefit of creditors;
- The Company suspends the operation of a substantial portion of its business;
- The Company suspends the whole or any part of the Work to the extent that it impacts the Company's ability to meet the Work schedule, or the Company abandons the whole or any part of the Work;
- The Company, at any time, violates any of the conditions or provisions of the Contract Documents, or the Company fails to perform as specified in the Contract Documents, or the Company is not complying with the Contract Documents;
- The Company attempts to willfully impose upon JEA items or workmanship that are, in JEA's sole opinion, defective or of unacceptable quality;
- The Company breaches any of the representations or warranties;
- The Company is determined, in JEA's sole opinion, to have misrepresented the utilization of funds or misappropriate property belonging to JEA; or
- There is an adverse material change in the financial or business condition of the Company.

If within thirty (30) days after service of such notice to discontinue or notice to cure upon the Company an arrangement satisfactory to JEA has not been made by the Company for continuance of the Work or the material breach has not been remedied, JEA may declare the Company to be in default and terminate the Contract.

Once Company is declared in default and the Contract has been terminated, JEA will notify the Surety in writing of the termination. The Surety shall, at JEA’s sole option take one (1) of the following actions:

(a) Within a reasonable time, but in no event later than thirty (30) days, from JEA's written notice of termination for default, arrange for Company with JEA's consent, which shall not be unreasonably withheld,

to complete the Contract and the Surety shall pay JEA all losses, delay and disruption damages and all other damages, expenses, costs and statutory attorney's fees, including appellate proceedings, that JEA sustains because of a default by the Company under the Contract;

(b) Within a reasonable time, but in no event longer than sixty (60) days after JEA's written notice of termination for default, award a contract to a completion contractor and issue notice to proceed or alternatively, JEA may elect, to have the Surety determine jointly with JEA the lowest responsible qualified bidder, to have the Surety arrange for a contract between such bidder and JEA, and for the Surety to make available as Work progresses sufficient funds to pay the cost of completion less the balance of the Contract price; or

(c) Within a reasonable time, but in no event later than thirty (30) days from JEA's notice of termination for default, JEA may waive its right to complete or arrange for completion of the Contract and, within twenty-one (21) days thereafter, determine the amount for which the Surety may be liable to JEA and tender payment to JEA of any amount necessary in order for JEA to complete performance of the Contract in accordance with its terms and conditions less the balance of the Contract price.

JEA shall have the right to take possession of and use any of the materials, plant, tools, equipment, supplies and property of any kind provided by the Company for the purpose of this Work.

JEA will charge the expense of completing the Work to the Company and will deduct such expenses from monies due, or which at any time thereafter may become due, to the Company. If such expenses are more than the sum that would otherwise have been payable under the Contract, then the Company or Surety shall pay the amount of such excess to JEA upon notice of the expenses from JEA. JEA shall not be required to obtain the lowest price for completing the Work under the Contract, but may make such expenditures that, in its sole judgment, shall best accomplish such completion. JEA will, however, make reasonable efforts to mitigate the excess costs of completing the Work.

The Contract Documents shall in no way limit JEA's right to all remedies for nonperformance provided under law or in equity, except as specifically set forth herein. In the event of termination for nonperformance, the Company shall immediately surrender all Work records to JEA. In such a case, JEA may set off any money owed to the Company against any liabilities resulting from the Company's nonperformance.

JEA has no responsibility whatsoever to issue notices of any kind, including but not limited to deficient performance letters and scorecards, to the Company regarding its performance prior to default by Company for performance related issues.

JEA shall have no liability to the Company for termination costs arising out of the Contract, or any of the Company's subcontracts, as a result of termination for default.

Immediately upon termination or expiration of this Agreement, Company must return to JEA all materials, documents and things used by Company and belonging to JEA, including proposals, computer files, borrower files, building keys, and any other property or information regarding continued business compliance or goodwill, whether in electronic or hard-copy form. Furthermore, upon JEA's request, Company shall certify in writing that all of the foregoing documents or materials, including archival or backup copies, whether in electronic of hard-copy form, have been returned to JEA, deleted from any computer system, or otherwise destroyed.

Any other provision in this Agreement to the contrary notwithstanding the duration of this Agreement after the initial year, shall be contingent upon the existence of lawfully appropriated funds for each subsequent year of the term.

2.9.5. UNAUTHORIZED WORK

JEA will consider any Work done without lines and grades given, Work done beyond the lines and grades shown on the Contract or as given, or any extra Work done without written authority, as unauthorized Work and will not pay the Company for such Work. If so ordered by the Contract Administrator, the Company shall remove such Work and properly replace it at the Company's own expense.

2.10. PRELIMINARY MATTERS

2.10.1. MAINTENANCE OF TRAFFIC

The Company, when required by the governing agency such as the City of Jacksonville or the Florida Department of Transportation (FDOT), shall maintain traffic in accordance with an approved Maintenance of Traffic (MOT) plan ("MOT Plan") submitted by the Company, on streets, roads, private ways, and walks. The Company shall assume full responsibility for the adequacy and safety of provisions made. The Company shall be solely responsible for the placement, maintenance and removal of the minimum number of devices required by the MOT Plan, or specified by the FDOT, for the control of traffic at the Work Location including, but not limited to signs, cones, lights, barricades, concrete barrier walls, police officers, flaggers, etc. ("MOT Items").

Company shall be responsible for all costs associated with MOT. There will not be a separate line item for MOT on the Bid Form.

2.10.2. LIMITATION OF ACCURACY OF INFORMATIONAL MATERIALS

For all drawings, test results, inspections, and other informational materials included as part of the Contract Documents, the Company understands and agrees that any existing facilities shown, including underground, overhead, and surface structures, and other delineations, and any other informational items provided as part of the Contract Documents are for reference only and are not to be used by the Company as the only indication of Work conditions. The Company understands and agrees that it is its sole responsibility to verify all Work conditions, measurements, dimensions, obstructions and other causes for existing or potential changes to the Work prior to initiating Work. In the event the Work must be changed due to the Company not fulfilling the above requirements, the Company understands and agrees that it will be responsible for all costs associated with the changed condition. Changes associated with conditions that are clearly unforeseen and that could not have been discovered by a reasonable verification of the above listed items, shall be covered as stated in Changes to Work.

2.10.3. PERMITS TO BE OBTAINED BY THE CONTRACTOR

Unless otherwise specified in the Contract Documents, the Contractor shall secure, maintain, post as required, and pay for all building, plumbing, electrical, water, sewer, right-of-way, parking, roadway, railroad, shipping, freight, hazardous materials, and any other permits which may be required for performance of the Work in full compliance with all applicable laws, rules and regulations. The Contractor shall perform all actions necessary to identify where permits are to be obtained and properly file for the permits, except those specifically listed in the Contract Documents as being provided by JEA.

The Contractor shall comply with all conditions of permits issued for the Work, either directly or indirectly, issued by federal, state, or local governmental agencies, which are hereby incorporated as part of these Contract Documents. The Contractor shall be solely responsible for resolving any issues and bearing all expenses including any damages suffered by JEA that result from a finding of noncompliance during performance of the Work by any of the respective regulatory agencies including, but not limited to, all costs for delays, litigation, fines, fees of any kind, and other costs.

2.10.4. PRE-WORK MEETING AND PROGRESS MEETINGS (CONSTRUCTION)

Before starting the Field Work, a Pre-Work or Pre-Construction meeting may be held to review procedures for the Work, review the Work schedule, establish procedures for invoicing, approving Invoices and making payments, and establish a working relationship between JEA and the Company.

The JEA Contract Administrator may, at his or her discretion, request Pre-Work Meetings to be held prior to start of any Field Work. Such meeting(s) shall be attended by, but not limited to, the Company Representative and Company Supervisor. The JEA Contract Administrator will notify the Company in writing of the meeting time and location at least two (2) days prior to the meeting date. In addition, construction progress meetings will be held at a frequency as determined by JEA. Such meeting(s) shall be attended by, but not limited to, the Company's Representative and Company's Supervisor.

2.10.5. TEMPORARY CLOSURE OF ROADWAYS

The Company shall not close or obstruct any portion of a street, road, or private way without first obtaining permits. If any street or private way is rendered unsafe by the Company's operations, the Company shall make such repairs or provide such temporary ways and guards necessary for the protection and safety of persons on the Work and the public and for the orderly maintenance of traffic. All costs associated with temporary closure of roadways shall be included in Bid Price.

The Company shall notify the police and fire departments in writing if it will be necessary to close a street. The Company shall copy JEA on all correspondence relating to street closure. The Company shall notify the police and fire departments prior to closure of the street. The Company shall be responsible for maintaining proper coordination with the proper authorities.

Temporary closure of business entrances must be approved in writing by and coordinated with JEA.

2.10.6. TEMPORARY UTILITIES

The Company shall furnish and install all temporary water, electricity and other utilities required to accomplish the Work. The Company shall obtain the water required for carrying out the Work from fire hydrants, existing water main connections, or new connections approved by JEA. The Company shall install a back flow preventer and water meter assembly if construction water is necessary. Upon Substantial Completion of Work, the Company shall remove all evidence of temporary connections and lines.

Prior to initiating any construction Work, the Company shall coordinate and schedule the provision of temporary utility service required during construction and arrange for the permanent installation and connection of utilities for the completed Work.

2.10.7. WORK LOCATION

Work shall be performed at the following location(s): 4377 HECKSCHER DRIVE JACKSONVILLE, FL32226 AND 11201 NEW BERLIN ROAD JACKSONVILLE, FL 32226

2.10.8. UNFORESEEN CONDITIONS

The Company understands and agrees that it is its responsibility to conduct due diligence prior to the Work. Such due diligence includes, but is not limited to, verifying all Work conditions, measurements, dimensions and latent and patent obstructions, the accuracy of drawings, test results, inspections and other informational materials provided in the Contract Documents, and any other causes for existing or potential changes to the Work prior to initiating the

Work. In the event that the Work must be changed due to the Company's failure to fulfill the above requirements, the Company understands and agrees that it will be responsible for all costs associated with the changed condition.

In the event, however, that the Company exercises the requisite due diligence and a change to the Work becomes necessary resulting from conditions that are clearly unforeseen and that could not have been discovered, the costs for adjusting the Work in response to such unforeseen conditions shall be addressed in a Change Order or an amendment to the Contract executed by JEA and Company. Any Work the Company performs prior to receipt of such Change Order or approved Contract amendment will be at the Company's sole risk.

2.10.9. COMMERCIAL ACTIVITIES ON THE WORK LOCATION

The Company shall not establish any commercial activities, or issue concessions or permits of any kind to third parties to establish commercial activities on lands owned or controlled by JEA, or within the boundaries of the Work Location. The Company shall not allow its employees to engage in any commercial activities on the Work Location.

2.10.10. COMMUNICATIONS - SITE WORK

The Company shall supply and maintain at the Work Location a two-way communication system of such quality as to enable communications between the Work Location, the Company office(s), and the Contract Administrator while Work is in progress. This system may consist of a two-way radio system or any combination of pagers and telephones, either cellular or conventional. All communication equipment required to accomplish this is to be provided by the Company.

In some cases, JEA may provide the Company with radio(s) on specified frequencies. Where provided, the Company shall be solely responsible for the security of the radio(s), and the Company shall monitor the radio(s) at all time while performing Work.

In the event the Company will be requesting hold tags from JEA, the Company shall provide local digital pagers to its Company Representative and all Company Supervisors for the full Term of this Contract.

2.10.11. COMPANY'S EQUIPMENT

The Company's equipment including, but not limited to, trucks, drill rigs, backhoes, excavators, bucket trucks and derricks shall not be older than 5 years in age, unless the Company can demonstrate to JEA's satisfaction that equipment being used has been completely refurbished and that it is in good working order. JEA may, at its sole discretion, make exceptions for equipment that is rarely used such as sag winches.

2.10.12. SHIPPING TO AND STORAGE AT WORK LOCATION

Shipping Materials and equipment to be installed by the Company shall be delivered by the Company to the Work Location or such other place as may be designated by the Contract Administrator. Insofar as transportation conditions will allow, items shall be shipped complete and ready for installation.

Where applicable, the Company shall be responsible for obtaining any permits required for transportation to the Work Location. The Company shall provide an Advance Ship Notice to the Contract Administrator or designated Work Location manager.

Storage: Under arrangement with the JEA Engineer, and upon his approval, a limited amount of temporary indoor storage space may be made available, but only for the equipment that must be protected from the weather. Equipment for which arrangements have been made for indoor storage, shall be packed separately and the container clearly marked "For Indoor Storage." For equipment that will be stored indoors and that will require special storage

precautions, the storage instructions shall be shown on the outside of each container, or in a durable envelope identified as containing storage instructions and attached to the container.

2.10.13. SECONDARY CONVERSION

Zoning Department and National Electric Code.

All wiring installations must be inspected and approved by an authorized electrical inspector as required by law.

JEA requires 10 days between an approved "rough" inspection and an approved "final" inspection in order to schedule new meter installations.

The Company shall clearly mark each conductor of the service entrance as to phase, neutral and ground. The conductors shall be marked at the point of service and the location of the JEA metering transformers. Each conductor within JEA transformers and service boxes shall be "spiral" marked their entire length, beginning at the conduit entering the equipment. The following color coding shall be used:

- For 240V: Neutral-White, Ground - Green, High Leg (3 phase 4 wire delta service) - Orange
- Phase markings for 208V: Black, Red, Blue
- Phase markings for 480V: Brown, Orange, Yellow

All color coding shall be consistent when parallel runs of conductors are used.

Overhead to Underground Customer Conversion Agreement: The above work will be done by a contractor who is a licensed electrician, the work will be permitted and inspected through the City of Jacksonville, and who will perform work in accordance with the JEA Rules and Regulations. The owner/customer understands that, after completion of the underground conversion, and subject to a one-year warranty period.

Regulations for Electric Service for Meter Socket Specification.

2.10.14. SWITCHING AND HOLD TAGS

The Company shall be required to attend a JEA class concerning hold tag procedures and be adjudged to be qualified prior to the issuance of the Notice to Proceed.

The Company shall not, in any case, make connections or taps to energized lines, cut any lines in or out of service, or attempt any outages without due notice to and approval from the Station 2 Dispatcher of the Distribution Control Department.

2.10.15. TRANSFORMER DATA CARD

The Company shall be responsible for completing a JEA Transformer Installation/Removal Data sheet for each transformer installed or removed on the distribution electric system. This data sheet contains pertinent information such as installation/removal date, serial number, rating, street address, voltage, etc. This data is used to ensure that the Graphic Information System (GIS) is properly updated. The Company shall be responsible for transporting all removed transformers to JEA's transformer rehabilitation facility. The Company shall return a copy of all data cards with the transformers to the rehabilitation facility and shall include a copy with the as-built drawings.

2.10.16. MATERIAL REIMBURSEMENT

JEA will reimburse the Company for the direct cost of material or chemicals furnished by the Company as requested by JEA for the labor, equipment and materials (L.E.M.) project plus 10 percent for the Company's handling of the material.

2.10.17. COMPANY LAYDOWN AREA

In the event the Company decides to utilize public or private property as a laydown area, the Company shall enter into a written agreement with the entity who owns the property. JEA shall have access to all laydown areas. Upon submission of Company's first Invoice or application for payment to JEA, the Company shall provide to JEA a copy of such signed written agreement. The Company shall submit to JEA a letter of release from the entity in connection with Company's final Invoice or application for payment to JEA.

2.10.18. COMPANY'S DOCUMENTS AT THE WORK LOCATION

The Company shall maintain at the Work Location for JEA one record copy of all Contract Documents in good order and marked currently to record all Addenda and changes made during Contract Term. These shall be available to JEA Representatives and shall be delivered to the Contract Administrator upon completion of the Work and at the request of the Contract Administrator.

The Company shall also maintain detailed records of the Work for its own files. The Company shall make these records available to JEA for inspection upon request. The Company shall maintain such records for three years after date of Final Completion.

2.10.19. COMPANY'S FIELD OFFICE

The Company shall provide its own office facilities at the Work Location, as required. Unless specifically listed herein, JEA provides no Work Location facilities or Work Location area for the Company facilities of any kind such as field office and material storage. If the Company establishes a Work Location-based office, the Company shall provide and maintain adequate telephone facilities at this office during the full Term of the Contract. If the Company has a local business office, this office may serve as a Work Location office for this Contract, but the Company must maintain an operational cellular phone at the Work Location while performing Work.

2.11. CONFIDENTIALITY AND OWNERSHIP OF DOCUMENTATION

2.11.1. PUBLIC RECORDS LAWS

Access to Public Records.

All Documents, data and other records received by JEA in connection with the Contract are public records and available for public inspection unless specifically exempt by law. The Company shall allow public access to all documents, data and other records made or received by the Company in connection with the Contract unless the records are exempt from Section 249(a) of Article I of the Florida Constitution or subsection 119.07(1), Florida Statutes. JEA may unilaterally terminate the Contract of the Company refuses to allow public access as required under the Contract.

Redacted copies of Confidential Information.

If the Company believes that any portion of any documents, data or other records submitted to JEA are exempt from disclosure under Chapter 119, Florida Statutes, the Florida Constitution and related laws ("Florida's Public Records Laws"), Company must (1) clearly segregate and mark the specific sections of the document, data and records as "Confidential", (2) cite the specific Florida Statute or other legal authority for the asserted exemption, and (3) provide JEA with a separate redacted copy of the documents, data, or records (the "Redacted Copy"). The Redacted Copy shall

contain JEA's contract name and number, and shall be clearly titled "Redacted Copy". Bidder should only redact those portions of records that Bidder claims are specifically exempt from disclosure under Florida's Public Records Laws. If the Company fails to submit a redacted copy of documents, data, or other records it claims is confidential, JEA is authorized to produce all documents, data, and other records submitted to JEA in answer to a public records request for these records.

Request for Redacted Information.

In the event of a public records or other disclosure request under Florida's Public Records Laws or other authority to which the Company's documents, data or records are responsive, JEA will provide the Redacted Copy to the requestor. If a Requestor asserts a right to any redacted information, JEA will notify the Company that such an assertion has been made. It is the Company's responsibility to respond to the requestor to assert that the information in questions is exempt from disclosure under applicable law. If JEA becomes subject to a demand for discovery or disclosure of the redacted information under legal process, JEA shall give the Company prompt notice of the demand prior to releasing the redacted information (unless otherwise prohibited by applicable law). The Company shall be responsible for defending it determination that the redacted portions of the information are not subject to disclosure.

Indemnification for Redacted Information.

The Company shall protect, defend, and indemnify JEA from and against all claims, demands, actions, suits, damages, liabilities, losses, settlements, judgments, costs, and expenses (including but not limited to reasonable attorney's fees and costs) arising from or relating to the Company's assertion that all or any portion of its information is not subject to disclosure.

Public Records Clause for Service Contracts.

If, under the Contract, the Company is providing services and is acting on behalf of JEA as contemplated by subsection 119.011(2), Florida Statutes, the Company shall:

4. Keep and maintain public records that ordinarily and necessarily would be required by JEA in order to perform service;
    1. Provide the public with access to public records on the same terms and conditions that JEA would provide the records and at a cost that does not exceed the cost provided in Chapter 119, Florida Statues, or otherwise prohibited by law;
    1. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and
    1. Meet all requirements for retaining public records and transfer, at no cost, to JEA all public records in possession of the Company upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically shall be provided to JEA in a format that is compatible with the information technology systems of JEA.

IF THE COMPANY HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE COMPANY'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

JEA
Attn: Public Records
21 West Church Street
Jacksonville, Florida 32202
Ph: 904-665-8606
publicrecords@jea.com

2.11.2. INTELLECTUAL PROPERTY

The Company grants to JEA an irrevocable, perpetual, royalty free and fully paid-up right to use (and such right includes, without limitation, a right to copy, modify and create derivative works from the subject matter of the grant of the right to sublicense all, or any portion of, the foregoing rights to an affiliate or a third party service provider) the Company's intellectual property (including, without limitation, all trade secrets, patents, copyright and know-how) that is contained or embedded in, required for the use of, that was used in the production of or is required for the reproduction, modification, maintenance, servicing, improvement or continued operation of any applicable unit of Work.

If the Work contains, has embedded in, requires for the use of any third party intellectual property, or if the third party intellectual property is required for the reproduction, modification, maintenance, servicing, improvement or continued operation of the Work, the Company shall secure for JEA an irrevocable, perpetual, royalty free and fully paid-up right to use all third party intellectual property. The Company shall secure such right at its expense and prior to incorporating any third party intellectual property (including, without limitation, all trade secrets, patents, copyright and know-how) into any Work, including, without limitation, all drawings or data provided under the Contract, and such right must include, without limitation, a right to copy, modify and create derivative works from the subject matter of the grant of the right and a right to sublicense all or any portion of the foregoing rights to an affiliate or a third party service provider.

Should JEA, or any third party obtaining such work product through JEA, use the Work or any part thereof for any purpose other than that which is specified herein, it shall be at JEA's sole risk.

The Company will, at its expense, defend all claims, actions or proceedings against JEA based on any allegation that the Work, or any part of the Work, constitutes an infringement of any patent or any other intellectual property right, and will pay to JEA all costs, damages, charges, and expenses occasioned to JEA by reason thereof. JEA will give the Company written notice of any such claim, action or proceeding and, at the request and expense of the Company, JEA will provide the Company with available information, assistance and authority for the defense.
If, in any action or proceeding, the Work, or any part thereof, is held to constitute an infringement, the Company will, within 30 days of notice, either secure for JEA the right to continue using the Work or will, at the Company's expense, replace the infringing items with noninfringing Work or make modifications as necessary so that the Work no longer infringes.

The Company will obtain and pay for all patent and other intellectual property royalties and license fees required in respect of the Work.

2.11.3. PROPRIETARY INFORMATION

The Company shall not copy, reproduce, or disclose to third parties, except in connection with the Work, any information that JEA furnishes to the Company. The Company shall insert in any subcontract a restriction on the use of all information furnished by JEA. The Company shall not use this information on another project. All information furnished by JEA will be returned to JEA upon completion of the Work.

2.11.4. PUBLICITY AND ADVERTISING

The Company shall not take any photographs, make any announcements or release any information concerning the Contract or the Work to any member of the public, press or official body unless prior written consent is obtained from JEA.

2.12. LABOR

2.12.1. NONDISCRIMINATION

The Company represents that it has adopted and will maintain a policy of nondiscrimination against employees or applicants for employment on account of race, religion, sex, color, national origin, age or handicap, in all areas of employee relations, throughout the Term of this Contract. The Company agrees that on written request, it will allow JEA reasonable access to the Company's records of employment, employment advertisement, application forms and other pertinent data and records for the purpose of investigation to ascertain compliance with the nondiscrimination provisions of this Contract; provided however, the Company shall not be required to produce, for inspection, records covering periods of time more than one year from the effective date of this Contract.

The Company shall comply with the following executive orders, acts, and all rules and regulations implementing said orders or acts, which are by this reference incorporated herein as if set out in their entirety:

- The provisions of Presidential Order 11246, as amended, and the portions of Executive Orders 11701 and 11758 as applicable to Equal Employment Opportunity;
- The provisions of section 503 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA); and
- The provisions of the Employment and Training of Veterans Act, 38 U.S.C. 4212 (formerly 2012).

The Company agrees that if any of the Work of this Contract will be performed by a Subcontractor, then the provisions of this subsection shall be incorporated into and become a part of the subcontract.

2.12.2. JEA ACCESS BADGES

If the scope of work described in this Contract requires a Company to access JEA facilities, each Company employee shall apply for a JEA access badge through JEA's Security Department. An appointment to obtain a JEA access badge can be made by contacting JEA Security at securitybadge@jea.com. Finally, JEA does not allow Company employees to share JEA access badges. A Company whose employees are found to be sharing JEA access badges, will result in the Contract being terminated immediately for default. Additionally, JEA shall be notified within 6 hours of a lost or stolen JEA security badge or when an employee leaves the Company. Report badge termination notifications to JEA Security at (904) 665-8200.

2.12.3. LEGAL WORKFORCE

JEA shall consider the Company's employment of unauthorized aliens a violation of section 274A(e) of the Immigration and Nationalization Act. Such violation shall be cause for termination of the Contract for default upon thirty (30) days' prior written notice of such termination, notwithstanding any other provisions to the contrary in the Contract Documents.

2.12.4. JEA WORKPLACE TOBACCO USE POLICY

It is JEA's policy to maintain a healthy work environment and JEA's goal is to become a tobacco-free workplace. Therefore, JEA prohibits Company employees from using tobacco products while on JEA property or during the performance of JEA Work. JEA reserves the right to require Company to remove an employee who violates this policy from JEA property or JEA Work site upon notice from the JEA Representative.

2.12.5. PROHIBITED FUTURE EMPLOYMENT

It shall be unlawful and a class C offense for any person, who was an officer or employee of JEA, after his or her employment has ceased, to be employed by or enter into any contract for personal services, with a person or company who contracted with, or had a contractual relationship with JEA, while the contract is active or being completed, or

within two years of the cessation, completion, or termination of the person's or company's contractual relationship with JEA, where (1) the contract with JEA had a value that exceeded $250,000, and (2) the officer or employee had a substantial and decision-making role in securing or negotiating the contract or contractual relationship, or in the approval of financial submissions or draws in accordance with the terms of the contract; except that this prohibition shall not apply to an employee whose role is merely as a review signatory, or to contracts entered into prior to January 1, 2008, or to contracts that have been competitively procured. With respect to this subsection a contract is competitively procured if it has been obtained through a sealed low bid award. A "substantial and decision-making role" shall include duties and/or responsibilities that are collectively associated with: (i) approving solicitation or payment documents; (ii) evaluating formal bids and proposals; and (iii) approving and/or issuing award recommendations for JEA Awards Committee approval. The contract of any person or business entity who hires or contracts for services with any officer or employee prohibited from entering into said relationship shall be voidable at the pleasure of JEA. This prohibition shall not apply to any former officer or employee after two years from cessation from JEA employment.

2.12.6. HIRING OF OTHER PARTY'S EMPLOYEES

Each party recognizes that the other party has incurred or will incur significant expenses in training its own employees and agrees that it will not pursue or hire, without the other party's consent, the other party's employees or the employees of its subsidiaries for a period of two (2) years from the termination date of this Contract.

2.12.7. MINIMUM QUALIFICATION OF COMPANY PERSONNEL

At a minimum, all Company personnel shall be qualified for the tasks they are assigned. All Company personnel assigned to work at a JEA facility or job site shall be able to read, write, speak and understand English. All Company personnel shall act in a professional manner, with due sensitivity to other persons at the Work Location. If JEA, at its sole discretion, determines that a Company person is unqualified, unfit, or otherwise unsuitable for the tasks assigned, the Company shall immediately stop the person from performing the tasks, and replace the person with a qualified individual. The Company shall pay all costs associated with replacing the unqualified person including, but not limited to, termination, recruiting, training, and certification costs.

The Company personnel assigned supervisory roles, and those with increased authority shall be held to strict scrutiny of their qualifications and suitability for their positions. In addition to the other provisions of this Section, the Company shall provide written documentation as to experience, education, licenses, certifications, professional affiliations, and other qualifications of the individual, within one day of request from the Contract Administrator. Any changes to such personnel after approval shall require the written permission of the Contract Administrator.

2.12.8. PAYMENT OF OVERTIME

Any Overtime required for Company to complete the Work within the Contract Time shall be at the sole cost and expense of Company. However, if JEA requires the Company to perform Overtime Work in order to complete the Work prior to the Contract Time, the Company shall bill JEA for the Overtime such that only the actual costs incurred by the Company relating to the payment of Overtime premiums, in accordance with its labor policies and applicable laws. Such actual costs include Overtime wage premium, and additional taxes and insurance directly associated with the Overtime wage premium. The Company agrees that it will not charge for personnel paid a salary, or other form of compensation such that the Company incurs no direct costs as a result of the Overtime.

The Company shall total the direct Overtime charges, and add the agreed upon overhead rate, but in no case, shall such overhead rate exceed 10 percent of the total overtime costs.

Overtime may only be charged to JEA if the Company was directed in writing by the Contract Administrator to incur the Overtime. Such authorization for Overtime shall be accompanied by a Change Order.

2.12.9. SCHEDULING OF OVERTIME

Whenever the Company schedules Work beyond eight hours per day for a five day week, beyond 10 hours per day for a four day week, beyond 40 hours per week, or on Saturdays, Sundays, or Holidays, then the Company shall arrange, in advance, for the JEA Representative to inspect the Work performed during Overtime. The Company shall not perform Overtime Work or after-hours Work without a JEA Representative at the Work Location or available to perform the inspections, as directed by the Contract Administrator. Except where JEA has requested the Company schedule Overtime to perform additional Work, the Company shall reimburse JEA for any additional costs associated with JEA Representatives' Overtime pay.

2.12.10. SHOW-UP PAY

In the event that inclement weather prevents the Company from performing Work, the Company may be obligated to pay its crew a show-up pay. The Company shall be solely responsible for providing this pay.

2.12.11. COMPANY'S LABOR RELATIONS

The Company shall negotiate and resolve any disputes between the Company and its employees, or anyone representing its employees. The Company shall immediately notify JEA of any actual or potential labor dispute that may affect the Work and shall inform JEA of all actions it is taking to resolve the dispute.

2.13. COMPANY'S RESPONSIBILITIES AND PERFORMANCE OF THE CONTRACT

2.13.1. COMPANY REPRESENTATIVES

The Company shall provide JEA with the name and responsibilities of the Company Representative, in writing after Award of the Contract and before starting the Work under the Contract. Should the Company need to change the Company Representative, the Company shall promptly notify JEA in writing of the change.

2.13.2. COMPANY REVIEW OF PROJECT REQUIREMENTS

The Company shall review the Work requirements and specifications prior to commencing Work. The Company shall immediately notify the Contract Administrator in writing of any conflict with applicable law, or any error, inconsistency or omission it may discover. JEA will promptly review the alleged conflicts, errors, inconsistencies or omissions, and issue a Change Order or Purchase Order as appropriate if JEA is in agreement with the alleged conflict, and issue revised specifications. Any Work the Company performs prior to receipt of approved Change Order will be at the Company's sole risk.

2.13.3. LICENSES

The Company shall comply with all licensing, registration and/or certification requirements pursuant to applicable laws, rules and regulations. The Company shall secure all licenses, registrations and certifications as required for the performance of the Work and shall pay all fees associated with securing them. The Company shall produce written evidence of licenses and other certifications immediately upon request from JEA.

2.13.4. PERFORMANCE OF THE WORK

The Company represents and warrants that it has the full corporate right, power and authority to enter into the Contract and to perform the acts required of it hereunder, and that the performance of its obligations and duties hereunder does not and will not violate any Contract to which the Company is a party or by which it is otherwise bound. The Company warrants that all items provided under the Contract shall be free from Defect and services shall be performed in a professional manner and with professional diligence and skill, consistent with the prevailing standards of the industry. The Company warrants that the Work will meet the functional and performance requirements defined in the Contract.

2.13.5. DAMAGED MATERIALS OR EQUIPMENT

The Company shall report to the Contract Administrator any materials issued by JEA or delivered by the JEA material supplier and received by the Company that are later found to be faulty, damaged or discrepant in some manner. The Contract Administrator will obtain appropriate replacement materials upon written notification from the Contract Administrator. The Company shall not, under any circumstances, make a material replacement without written approval of the Contract Administrator.

The Company understands and agrees that damage to material and discrepancy of material is an expected part of performing the Work, and as such, the Company agrees it shall be solely responsible for any additional costs incurred as a result of damaged or discrepant materials, including, but not limited to, the costs to keep or get the Work on the Approved Schedule.

JEA will bill the Company for materials or equipment that are damaged while in the Company's custody. In such a case, the Company shall be charged the current JEA cost plus an inventory handling fee.

2.13.6. DELIVERY LOCATION

The delivery address for items provided under this Contract is: 4377 Heckscher Drive Jacksonville, FL32226 and 11201 New Berlin Road Jacksonville, FL 32226.

2.13.7. DISPOSITION OF SALVABLE MATERIAL

All material to be removed from the Work Location, relocated or salvaged, shall be inspected by the JEA Engineer immediately prior to removal, and the JEA Engineer's decision as to the salvageability shall be final. Such material that is salvable, in the opinion of the JEA Engineer, shall be stored at the Work Location on-site by the Company, as and where directed by the JEA Engineer, or delivered to a location as directed. Under no circumstances may existing structures, plant or facilities be removed or demolished without obtaining prior written approval from the JEA Engineer.

2.13.8. EMERGENCY EVENTS

In the event that a system-wide emergency arises during the Term for which JEA requires assistance from the Company including, but not limited to, severe storms, large-scale fires, floods, and terrorist attacks, the Company acknowledges the importance of JEA infrastructure and agrees to support, with all its resources, skills and capabilities, and the maximum extent possible, all restoration efforts of JEA. The Contract Administrator shall notify the Company when an emergency event occurs and the Company agrees to mobilize its full resources immediately. In the event conditions are such that an emergency event is likely in progress, but the Company has not been notified by the Contract Administrator, the Company shall make all efforts to contact a JEA Representative to determine if and how it should respond. JEA agrees to reimburse the Company for its actual costs incurred as a result of supporting JEA during the emergency event, plus overhead and profit, not to exceed twelve percent (12%) of such costs.

2.13.9. EMERGENCY PROCEDURES

In emergencies affecting the safety of persons, the Work or property at the Work Location or any other area adjacent thereto, the Company, without special instructions or authorization from JEA Representatives, is obligated to act to its best ability to prevent threatened damage, injury or loss to the Work, any persons, or property. The Company shall give the Contract Administrator prompt written notice describing the emergency, its cause, actions taken, injuries and casualties, property damage, other damages, and impact on continued performance under this Contract.

2.13.10. ENCROACHMENTS ON RIGHTS OR PROPERTY

The Company shall be solely responsible for any encroachments on public property or on the rights or property of adjoining property owners to the Work Location, and shall hold JEA harmless because of any encroachments that may result because of the Company's improper layout. In this regard, the Company shall, without extra cost to JEA, remove any Work or portion of any Work that encroaches on the property other than that of the Work Location, or that is built beyond legal building or setback limits. The Company shall rebuild the affected Work or portion of Work at the proper location and in full compliance with the Contract Documents.

2.13.11. REMOVAL OF WORK

The Company shall not sell, assign, mortgage, hypothecate or remove Work that has been delivered to or installed at the Work Location.

2.13.12. APPLICABLE STANDARDS AND CODES

The latest rules and regulations of the following organizations shall be considered a part of these Contract Documents. The Company shall perform all Work in strict accordance with applicable provisions thereof:

Institute of Electronic and Electrical Engineers (IEEE), Edison Electric Institute (EEI), National Electrical Manufacturer's Assoc. (NEMA), American Concrete Institute (ACI), American National Standards Institute (ANSI), National Electric Safety Code (NESC).

2.13.13. FREE AND CLEAR TITLE

The Company warrants that it has title to all equipment and materials furnished under the Contract where title will pass to JEA, and that the equipment and materials passed to JEA are free and clear of all liens, claims, security interests and encumbrances.

2.13.14. INSPECTIONS AND TESTING

JEA, or its designated representatives, will perform inspections at the Company facilities during normal business hours and in a manner that minimizes disruption to the normal day-to-day work activities of the Company. Company shall provide safe and proper facilities for inspection access and observation of the Work and also for any inspection or testing by others.

If the Company has covered or concealed any Work from inspection in any way that the JEA Representative has not specifically requested prior to the JEA Representative’s inspection, or if the JEA Representative considers it necessary or advisable that covered Work be inspected or tested by others, the Company, at the JEA Representative's request, shall uncover, expose or otherwise make available the portion of the Work in question for observation, inspection or testing as the JEA Representative may require. The Company shall furnish all necessary labor, material and equipment to make such Work available.

If such Work is defective, the Company shall bear all expenses of uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including, but not limited to, compensation for additional professional services required by JEA, and no change in Contract Time will be considered as a result of the foregoing.

If such Work is not defective, JEA will reimburse the Company for actual time, material, and equipment costs for uncovering and reconstruction of the portion of the Work in question. JEA may also, at its sole discretion, grant the Company an extension of the Contract Time directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction.

All materials and equipment used in the construction of the Contract shall be subject to adequate inspection and testing in accordance with accepted standards. The Company shall select the laboratory or inspection agency for making all tests required by the specifications, and shall pay for this laboratory service direct, as a part of this Contract.

The Company shall pay for all required testing of materials and equipment. Two copies of each test showing certification of each test shall be furnished to the JEA Engineer immediately after such test has been made and with the exception of concrete, prior to delivery of the materials or equipment tested to the Work Location. JEA will not accept the materials or equipment until tests have been approved.

Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended. Test requirements for all materials are set out in the detailed specifications for that particular material. All materials and equipment prior to being incorporated in the Work, and required by the JEA Engineer to be tested, shall be tested for conformance with contractual requirements. Standard items of a uniform nature may be accepted on the manufacturer's certification. Where specific performance and/or quality is referred to, it is the Company's responsibility to have the necessary tests performed by qualified persons to show that the contractual requirements are being met except those tests named in the Contact Documents to be performed by JEA. Certified test results shall be submitted promptly in quadruplicate to the JEA Engineer for review. All tests shall be performed in accordance with referenced standards. Where no reference is made, tests shall be performed in accordance with the methods prescribed by the American Society for Testing and Materials or such other organization as would be applicable.

The Company shall pay for any retests resulting from its failure to provide Work that passes required tests.

The JEA Engineer may appoint JEA Inspectors to inspect any and all materials and Work. Such inspection may extend to any or all parts of the Work and to the preparation and manufacture of the materials to be used. The JEA Inspectors shall not be authorized to alter, revoke, enlarge or relax the provisions of the Contract, nor will they be authorized to approve or accept any portion of the completed Work, nor to issue instructions contrary to the Contract. The JEA Inspector shall inform the JEA Engineer of the progress of the Work and the manner in which it is being done, and notify the Company of any infringement upon the Contract Documents. The JEA Inspector will have the authority to reject defective materials or to suspend any Work that is being improperly done subject to the final decision of the JEA Engineer.

2.13.15. INTERFERENCE WITH EXISTING UTILITIES

The Company acknowledges and agrees that there is a possibility that existing JEA or other utility facilities may cross and/or lie parallel to excavations in the area where Work will occur. Although JEA may indicate recorded obstacles on the drawings, it does not warrant that other subsurface obstacles do not exist. The Company shall be responsible for verifying the data furnished by JEA and for fully investigating and locating additional obstructions including every type below, on or above the ground. The Company should regard these impediments as normal to construction. All costs for performing such work shall not be paid for separately, but shall be included in the Company's costs on the Bid Document.

The Company shall comply with all requirements of the Sunshine State One-Call program.

In the event the Company encounters an unidentified utility during performance of the Work, the Company shall promptly cease Work in the affected area and shall immediately notify the JEA Representative in writing. JEA will investigate the area and propose remedial actions in accordance with the provisions stated herein in "Changes to the Work".

The Company shall work in cooperation with JEA and representatives of existing utilities to plan and coordinate putting new Work into service so as not to interfere with the operation of the existing utilities. Such plans shall be adhered to unless deviations therefrom are expressly permitted in writing by the Contract Administrator.

The Company shall at all times conduct the Work in a manner that interferes as little as possible with the existing utilities. Any cables exposed during construction, whether energized or not, must be handled and protected as if they are energized. The Company shall so conduct its operations and maintain the Work in such condition that adequate drainage shall be in effect at all times. The Company shall not obstruct existing gutters, ditches and other runoff facilities. When working in the vicinity of overhead lines, the Company shall request line rubber protection from JEA at least 10 days in advance of performing the work.

The Company shall be solely responsible for any damages, interferences, and interruptions of service caused to any utility's assets and services including water, sewer, electric, telephone, gas, cable, and other utility services, that result from the Company's failure to fulfill the above stated requirements.

In the event the Company damages an existing utility, the Company shall immediately notify the property owner, the owner of the damaged utility and the JEA Representative. Should the damage cause an interruption of service, the Company shall be responsible for restoring service as soon as possible; however, the Company shall not make repairs, other than any required to restore safe conditions, without the approval of the property owner, or the owner of the damaged utility. The Company shall be responsible for coordinating any repair effort, and any associated costs should the utility owner or a licensed repair contractor be required to make the repair. JEA reserves the right to deduct any unsettled claim amount from Company's invoices until such time as the claim is satisfactorily resolved.

2.13.16. INTERFERENCE WITH OTHER JEA WORK OR OTHER COMPANIES

The Company shall perform the Work in a manner that minimizes the interference with other JEA work, City of Jacksonville work, or with work performed by other companies. The Company shall coordinate the Work with other persons and companies employed by JEA. If a difference of opinion regarding scheduling or coordination of the Work arises between the Company and another JEA contractor(s) performing work at the Work Location, JEA may arbitrate the matter. In such cases where JEA makes a decision regarding the scheduling or coordination of the work, the Company agrees to fully abide by JEA's decision. Unless otherwise agreed in writing by JEA, JEA will not be responsible for additional costs.

Any claims arising against the Company from damages to other companies' work, equipment, machinery, tools or other property shall be settled directly between the Company and the other companies involved. JEA will not, in any way, be a party to arbitrating or mediating any such disputes, nor shall JEA be responsible for any costs associated with such disputes.

2.13.17. INTERFERENCE WITH RAILROADS

The Company shall not build across, into, over or under, either temporarily or permanently, any portion of a railway or railway right-of-way without first obtaining all required permits. If the Company's operations render any railroad unsafe, the Company shall immediately notify the Contract Administrator and the railroad owner and take appropriate actions and such temporary safeguards as required to protect life, limb, and property, and to maintain orderly traffic.

The Company shall procure all railroad permits required for the Work beyond those procured by JEA and the costs for such permits shall be included in the Bid Documents. All costs associated with railroad fees for railroad flagmen, watchouts, inspectors, supervisors, any additional training of Company's employees that is required by applicable laws, rules and regulations when performing Work in association with railways, any certifications required for successful completion of the Work and all other associated costs shall be included in the Bid Document.

2.13.18. MATERIAL DELIVERED TO COMPANY SITES

The Company shall be responsible for all unloading, handling and storage of Work-related materials at the Work Location. Where the Company is to use a JEA-designated supplier to deliver materials to the Work Location, JEA will provide the Company, upon request, with contact names and information, along with required material lead-times. The Company is solely responsible for taking into account required material lead-times when planning its performance of the Work, and for communication and coordination of materials delivered to the Work Location by JEA suppliers. The Company shall be responsible for any additional delivery costs charged by the JEA material supplier for any Company delays.

If, for any reason, the Company is unable to receive, unload, handle or store materials it has ordered or caused to be ordered, the Company shall be responsible for any and all additional costs incurred by JEA for unloading, handling, storing, or additional shipping costs. In such cases where JEA is receiving items when the Company is unable to, such receipt does not indicate JEA's Acceptance of items.

2.13.19. MATERIAL DELIVERY LOCATIONS

The Company shall notify, in writing, the Contract Administrator of all planned material delivery/receiving locations. Such notification shall be prior to initiation of shipment. The Contract Administrator will provide the Company with specific written approval for each delivery/receipt location, which will not be unreasonably withheld. Where the Contract Administrator disapproves a proposed location, the Company shall propose alternate locations and obtain the Contract Administrator's written approval for any proposed alternate location. The Company understands and agrees that it shall not seek additional monies to compensate for any costs associated with changes or denials of proposed delivery/receipt locations regardless of circumstances

2.13.20. OBLIGATIONS OF THE COMPANY

The Company shall provide everything necessary to successfully complete the Work except the materials and services specifically stated in the Contract to be provided by JEA. No payments, other than those shown in the Bid Documents, will be made to the Company for performance of any requirements of the Contract Documents. The Company shall perform all Work in accordance with the Contract Documents and the applicable JEA standards manuals, safety manuals, policies, accepted commercial work practices, local, state, and federal, rules regulations and laws which may be amended from time to time. The Company shall provide all permits, certifications, insurances, and bonds necessary or required by good practice, except where specifically stated in the Contract to be provided by JEA.

The Company's personnel shall perform all Work in a professional, efficient, and competent manner. The Company is obligated to provide personnel possessing the skills, certifications, licenses, training, tools, demeanor, motivation, and attitude to successfully complete the Work. The Company is obligated to remove individuals from performing Work under this Contract when the Company recognizes an individual to not be working in a manner consistent with the requirements of this Contract, or when JEA notifies the Company that JEA has determined an individual or group of individuals to not be working in a manner consistent with the requirements of this Contract. The Company is obligated to ensure that their officers and executives interact with JEA, JEA customers, whether direct or indirect customers of JEA, with the utmost level of professionalism and integrity.

In the event the Contractor chooses to use Subcontractors, the Contractor is obligated to provide Subcontractors possessing the skills, certifications, licenses, training, tools, demeanor, motivation and attitude to successfully perform the work for which they are subcontracted. The Contractor is obligated to remove Subcontractors from performing Work under this Contract when the Contractor recognizes that a Subcontractor is failing to work in a manner consistent with the requirements of this Contract, or when JEA notifies the Contractor that JEA has determined a Subcontractor is failing to work in a manner consistent with the requirements of this Contract.

The Contractor is obligated to ensure that sufficient supervision of the Work is provided. This includes ensuring that the Contractor Supervisor is at the Work Location when Work is being performed.

The Contractor shall bear sole responsibility for the efficiency, adequacy and safety of the performance of the Work, including temporary Work and facilities, until Acceptance. The Contractor shall be solely responsible for any loss or damage to materials, tools, labor, and equipment used during the performance of, or in connection with, the Work. Any JEA comments or approval regarding the Contractor's performance, materials, working force, or equipment will not relieve the Contractor of any responsibility.

2.13.21. PROTECTION OF EXISTING FACILITIES AND GROUNDS

The Company shall be responsible for protecting all the existing facilities including, but not limited to, buildings, lawns, landscaping, sprinkler systems, and pavements, both public and private, that are encountered during the performance of the Work. At all times, the Company shall cooperate with the owners of such facilities by arranging and performing the Work in and around such facilities in a manner that facilitates their preservation, relocation, and/or reconstruction. The Company shall be responsible for the full restoration or replacement if the Company damages such facilities during or resulting from performance of the Work.

The Company shall verify the existing dimensions and clearances before laying out the Work. When the Work involves the laying of utility lines across landscaped areas and grassed areas, which may include, but is not limited to, irrigation systems, streets, sidewalks, and other paved areas, the Company shall protect and preserve all trees, shrubs, palms, landscaping, etc., and restore such areas and all paved areas to their original sound conditions using construction techniques and materials that are the same as existing including replacing plants and trees with those of similar size and age. In the case of planted areas, the Company shall maintain the restoration Work until positive growth has been acknowledged in writing by the Contract Administrator.

All costs for such restoration and replacement work shall be included in the associated lines on the Bid Documents.

The Company shall not (except upon written consent from the property owner and Contract Administrator) enter or occupy with workers, tools, equipment or vehicles any land outside the permitted easements, right-of-ways, JEA property or the City of Jacksonville property.

2.13.22. QUALITY CONTROL AND QUALITY ASSURANCE

The Company shall provide Quality Control to ensure the Work is performed in accordance with the Contract. Quality Control shall be appropriate for the nature of the Work, and shall be conducted in a manner consistent with sound quality management and industrial engineering principles. The Company shall have only personnel trained in Quality Control techniques and experienced with the nature of the Work perform the Quality Control function.

JEA may perform Quality Assurance activities. Such activities, whether performed or not, do not in any way limit or reduce the Company's requirements. JEA may become aware of quality related problems during its performance of Quality Assurance, but has no obligation to notify the Company of its findings. The Company shall provide access to all areas of Work, including the Company's facilities, for JEA Quality Assurance personnel and JEA Representatives. JEA will conduct Quality Assurance activities so as not to excessively interfere with the Work, however, where JEA Quality Assurance personnel request specific actions of the Company, the Company shall comply with the request and agrees that such compliance is included as part of its Contract Price.

2.13.23. SAFETY AND PROTECTION PRECAUTIONS (CONSTRUCTION)

The Company shall comply with all applicable federal, state and local laws, ordinances, all JEA procedures and policies including, but not limited to, JEA's Contractor Safety Management Process (available at JEA.com), and orders of any public body having jurisdiction for the safety of persons or protection of property. The Company understands

and agrees that a violation of any provision of this Section e is grounds for an immediate termination of the Contract for default, with no requirement for JEA to provide Company with advanced notice and opportunity to cure. Additionally, the Company shall be responsible for all JEA damages associated with such termination.

The Company shall only use those Subcontractors who have met JEA Safety Prequalification requirements in the JEA Contractor Safety Management Process. The Company shall ensure that Subcontractors and their personnel have all the necessary personal protective equipment and training needed to perform the Work safely.

The Company understands and agrees that JEA Representatives may stop Work at any time that JEA, at its sole discretion, considers the Company's Work to be unsafe or a risk to person or property, and to direct the Company to, at a minimum, perform as directed in such a way as to render the Work environment safe. The Company understands and agrees that it is responsible for paying all costs associated with providing a safe work environment including, but not limited to, any costs associated with any JEA directed safety improvements. The Company also understands and agrees that it is solely responsible for the safety of personnel and property associated with the Work, and that any actions taken by JEA to prevent harm to persons or damage to equipment does not, in any way, relieve the Company of this responsibility.

The Company Representative, or alternatively, the Company Supervisor, shall be designated as the Company's representative responsible for the prevention of accidents.

If the nature of the Work requires, the Company shall notify the police and fire departments as to its Work Location in order to ensure prompt response in an emergency.

2.13.24. SAFETY REPRESENTATION

The Company represents and warrants to JEA that it has the capacity to train and supervise its employees, Subcontractors and suppliers to ensure the Work complies with all safety requirements of the Contract Documents. The Company shall be responsible for executing the necessary safety training and supervision of its employees and Subcontractors, and acknowledges that JEA is not responsible for training or supervising the Company's employees, except when noted for the purpose of enforcing compliance with these safety requirements.

2.13.25. SHIPPING - FOB DESTINATION

Items are purchased F.O.B. destination. The Company shall ensure the following:

- Pack and mark the shipment to comply with the Contract Documents; or in the absence of specifications in the Contract Documents, prepare the shipment in conformance with carrier requirements;
- Prepare and distribute commercial bills of lading;
- Deliver the shipment in good order and condition to the point of delivery specified in the Contract;
- Be responsible for any loss of and/or damage to the goods occurring before receipt of the shipment by JEA Representative at the delivery point specified in the Contract;
- Be responsible for obtaining any permits required for transportation to the installation site;
- Furnish a delivery schedule and designate the mode of delivering carrier; and
- Pay and bear all charges to the specified point of delivery.

2.13.26. SHOP DRAWINGS

The Company shall promptly submit all required Shop Drawings in accordance with the provisions provided herein. JEA will not grant an extension of Contract Time due to the Company's failure to submit Shop Drawings in ample time to allow for checking, revisions, reviews, and approval.

A letter of transmittal and four copies of each shop drawing shall accompany each submittal. Shop drawings shall be forwarded to the JEA Engineer. Each drawing shall be listed separately on the letter. The Company shall also note distinctively on the transmittal letter any deviations that the Shop Drawings may have from the requirements of the Contract Documents.

The JEA Engineer's approval of Shop Drawings shall not be construed as a complete check, nor shall it relieve the Company from responsibility for any deficiency that may exist, or from any departures or deviations from the requirements of the Contract unless the Company has, in writing, called the JEA Engineer's attention to such deviations at the time of submission and obtained written approval for the deviation. The JEA Engineer's approval shall not relieve the Company from the responsibility for errors of any sort in Shop Drawings or schedules, nor from responsibility for proper fitting of the Work, nor from the necessity of furnishing any Work, materials, equipment or tools, required by the Contract Documents that may not be indicated on Shop Drawings when approved. The Company shall be solely responsible for all quantities and dimensions shown on the Shop Drawings. The Company shall not execute any Work until the JEA Engineer approves the Shop Drawings and a copy stamped "Approved" is at the Work Location. The Company shall, at no extra cost to JEA, make all changes and alterations whatsoever in Work performed or in subcontracts or orders placed prior to the approval of any and all Shop Drawings.

The Company shall allow a minimum of 14 days for the review of Shop Drawings. This shall be the period for new Shop Drawings and Shop Drawings that are revised and resubmitted.

As used herein, the term "manufactured" applies to standard units usually mass produced, and "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements. Shop drawings shall establish the actual details of all manufactured or fabricated items; indicate proper relation to adjoining Work; amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure; and incorporate minor changes of design or construction to suit actual conditions.

Shop drawings shall be complete in every detail, properly identified with the Contract name, Contract and subsection number for identification of each item, and state the qualifications, departures or deviations from the Contract, if any. Shop drawings for each section of the Work shall be numbered consecutively and the numbering system shall be retained throughout all revisions. Each drawing shall have a clear space above the title block in the lower right-hand corner for the approval stamps of the Company and the JEA Engineer.

If the materials are not listed in JEA's Approved Materials Manual, then prior to purchase of material or fabrication, the Company shall forward to the JEA Engineer for review, five sets of each shop drawing plus the number of prints it desires returned.

In checking the Shop Drawings, the Company shall verify all dimensions and field conditions and shall check and coordinate the Shop Drawings of any section or trade with the requirements of all other sections or trades whose Work is related thereto, as required for proper and complete installation of the Work. All rough-in and connections for utilities shall conform to approved equipment Shop Drawings.

The JEA Engineer will review the Shop Drawings and will return them to the Company stamped to indicate the action taken. The stamp will indicate that the shop drawing is "Approved", "Approved as Noted", "Returned for Correction", or "Disapproved". Only those Shop Drawings stamped "Returned for Correction" or "Disapproved" shall be resubmitted for subsequent review. Resubmittals shall be in the same form and number of copies as original submittals, with notation indicating a revised submittal. The Shop Drawings stamped "Approved" or "Approved as Noted" will be returned to the Company, who will be responsible for obtaining prints thereof and distributing them to the field and Subcontractors.

At the same time the JEA Engineer returns a reviewed submittal to the Company, it will forward two copies of each item stamped "Approved" or "Approved as Noted" together with any conditions of approval, to JEA for field and office use. The JEA Engineer may revoke approval of Shop Drawings, should field conditions so dictate.

2.13.27. STORAGE OF EQUIPMENT

The Company shall be responsible for all storage of materials, equipment, vehicles, tools, and all other items associated with the Work. Such storage shall comply with applicable regulations appropriate for the items being stored to ensure suitable care for items and protection from theft, vandalism, or inappropriate use. The Company is solely responsible for the costs for such storage, unless otherwise indicated in the Contract Documents, and any costs associated with noncompliant storage including, but not limited to, loss and damage to items. In the event that JEA directs the Company to stop the Work, costs associated with storing equipment or materials will be compensated in accordance with the Contract Documents. The Company shall ensure that JEA Representatives have access to Work-related storage on an as needed basis during regular work hours and Overtime.

2.13.28. STORM PREPAREDNESS

In the event of a Hurricane Warning, Tropical Storm Warning, or other large storm affecting the Work Location, the Company shall secure, or shall remove and store all equipment and materials at the Work Location including, but not limited to, cones, barricades, lights and signs. The Company shall begin taking such precautions as necessary to secure the Work Location upon official issuance of mandatory evacuation of the area of the Work Location and no later than 24 hours prior to predicted arrival of tropical storm or hurricane force winds, or when notified by a JEA Representative to do so. These activities are considered a regular part of the Work, regardless of the frequency they are required.

2.13.29. SUBSTITUTIONS

Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function and quality required.

Materials or equipment of other suppliers may be accepted by the JEA Engineer if sufficient information is submitted by the Company to allow the JEA Engineer to determine that the material or equipment proposed is equivalent or equal to that named.

The Company shall make written application to the JEA Engineer for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified.

The application shall state that the evaluation and acceptance of the proposed substitute will not prejudice the Company's completion of the Work within the time prescribed by the Contract, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other Contract directly with JEA for Work on the Contract) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fees, royalties, permits or any other costs.

All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service shall be indicated.

The application shall also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other Companies affected by the resulting change, all of which shall be considered by the JEA Engineer in evaluating the proposed substitute.

Requests for review of substitute items of material and equipment will not be accepted by the JEA Engineer from anyone other than the Company.

The JEA Engineer may require the Company to furnish, at the Company's expense, additional data about the proposed substitute.

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract, the Company may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to the JEA Engineer, if the Company submits sufficient information to allow the JEA Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract.

The JEA Engineer will be allowed a reasonable time within which to evaluate each proposed substitute; such time shall not be deemed justification for an extension of the Company's time for completion of the Contract.

The JEA Engineer will be the sole judge of acceptability, and no substitute shall be ordered, installed or utilized without the JEA Engineer's prior written notice, which shall be evidenced by either a Change Order or an approved shop drawing.

JEA may require reimbursement for the costs associated with JEA's evaluation of substitutions.

JEA may require the Company to furnish, at the Company's expense, a special performance guarantee bonds or other surety with respect to any substitution.

2.13.30. TOOLS AND EQUIPMENT

All tools and equipment used in the performance of the Work shall be used as intended by the manufacturer and in accordance with manufacturer operating manuals and industry practices, whichever is more stringent. The Company shall ensure that all tools and equipment used in the performance of the Work shall be of the size and quality suitable for safe and efficient performance of the Work. If the Company-provided tools and equipment do not meet these requirements, or if in the sole opinion of JEA formed after considering relevant factors, the tools or equipment are inappropriate for performance of the Work, the Company agrees to remove the unacceptable tools and equipment and obtain tools and equipment JEA considers suitable. Such replacement shall be entirely at the Company's expense, and no change to time prescribed by the Contract will be allowed.

The Company is responsible for furnishing and the security of any and all tools and equipment required to perform the Work.

2.13.31. CARE OF JEA CUSTOMERS

The Company agrees to provide excellent customer service throughout the execution of the Work during both scheduled Work hours and Overtime in the manner, as a minimum, as set forth below:

Customer Service Plan:
The Company shall submit a Customer Service Plan prior to mobilization and designate an individual to assume the duties of the Company's Customer Service Representative (CSR) as described herein.

The Company shall provide an after-hours emergency phone number to JEA.

The Company shall provide contact numbers for those individuals assigned to concerns arising during non-business hours and in the event of emergencies. The designated person(s) shall provide a cellular phone number as the main contact number, and one alternate number. The designated person(s) shall respond to JEA with proposed resolution

within two hours of receiving a call from a JEA representative or customer. If the Company fails to respond within the designated time and it is thereby necessary for JEA to provide assistance, the Company shall be responsible for all costs incurred by JEA as a result of resolving the concern.

Upon JEA approval, the Company shall deliver fliers and/or door hangers provided by Project Outreach to all customers in an affected work area at least three days prior to each construction activity including, but not limited to, locates, TV/cleaning, soil borings, mobilization, etc. Upon JEA's request, the contractor will install JEA provided signage at a location chosen by the JEA project team. These signs will be removed by the contractor at the end of the project.

The Company shall notify affected customers prior to any planned water/electric outages, line flushing, valve simulations and driveway/curb construction, paving and road closures. The notification will be produced by the Company (unless notifications are provided by JEA) and approved by JEA Project Outreach.

Customer Concerns:

The CSR shall contact the JEA customer who has a concern by the end of the business day of when the concern was received from JEA Project Outreach. The Company shall contact Project Outreach within two business days to confirm that they have contacted the customer and assessed the concern.

The CSR shall provide JEA Project Outreach with concern evaluations, resolutions, and actions taken all within five business days of when the concern was received.

The CSR shall notify Project Outreach immediately after a concern has been resolved with specific resolution actions or an update of the resolution. Project Outreach will contact the customer following notification of resolution to confirm the resolution before Project Outreach closes the concern and prior to notifying the Company, the CSR, JEA Representatives and inspectors of resolution of the concern.

Within one business day of receiving a concern from a JEA customer, the Company shall notify JEA Project Outreach in writing of each customer concern reported directly to the Company's personnel by any JEA customer. Such notification shall include, as a minimum: the Company's name, date and time the concern was communicated to the Company, the name, address and phone numbers for the customer, the nature of their concern and any action that was taken or any action currently underway to resolve the concern. The CSR shall follow the customer concern procedures stated above.

If the Company fails to meet the problem resolution deadlines stated in this document in a manner that meets acceptable quality standards, JEA may make repairs or take other necessary actions to resolve the issue, which shall be at the Company's sole expense.

Duties of the Customer Service Representative (CSR)

The Company shall provide a Customer Service Representative for the Term of the Contract. The CSR's primary responsibilities shall include, but are not limited to the following:

Communication: Serve as the primary point of contact for customer concerns and information requests; report customer concerns to the JEA Project Manager and Project Outreach or other internal JEA resources and assist in resolution of issues; and meet with customers on site as needed to assess their concerns.

Planning: Conduct biweekly progress meetings with JEA Project Manager; conduct progress meetings with Project Outreach regularly and as needed to review any outstanding complaints and provide a timeframe/action plan for

resolving them; review customer satisfaction targets and goals, measurements, documentation and project definition and assist with making improvements; conduct periodic customer service reviews during the course of the Work to assess and identify any items considered to be at risk or vulnerable in relationship to meeting JEA goals and objectives; and notify Project Outreach, in a timely manner, of change in scope or schedule.

Process Improvement: Work with JEA to identify process improvement opportunities that increase customer service and satisfaction; make recommendations to JEA to enhance and assist with JEA goals and objectives for customer service; and conduct a customer service review at the completion of the construction phase of a project, but prior to the restoration, or "punch list" phase, to assess customers' satisfaction with the handling of concerns and customers' overall response to the project.

Disruption of Utility Services: If the Company disrupts any utility services (water, sewer or electric, etc.) during performance of the Work, the Company shall return them to operation as soon as possible. No disruption to any utility service disruption shall exceed the end of the Company's normal work shift. No disruption to the customer's utility services shall exceed any 12-hour period. Should any of the customer's utility services be disrupted, for a period longer than 12 hours, the Company shall provide alternative arrangements for the customer, as determined by JEA, with no additional cost to JEA for these arrangements unless otherwise specified in the documents. The CSR shall immediately notify JEA Project Outreach (telephone 665-7500) of any service disruptions.

Restoration:
The Company shall restore, for no additional compensation, the landscaping of any properties affected by the Company's actions, directly or indirectly, (in the right-of-way not related to ongoing Work, or isolated Work in the right-of-way that would leave unrestored areas for undue periods of time subject to criticism) to its original state, within five calendar days from the time the area was disrupted. All other restoration required within the right-of-way shall be scheduled in the customary method for such construction and in accordance with any permit conditions.

The Company shall, at its own expense (unless otherwise specified in the documents), repair any irrigation systems damaged by the Company's Work within one day from the time the irrigation system was damaged. If this is not possible, the Company shall inform the customer of the damage and provide an estimated time for repair. In addition, the Company shall make adequate provisions for the customer to water and maintain his or her lawn.

The Company shall repair, at its own expense, any asphalt and concrete damaged by Company (in the right-of-way not related to ongoing Work, or isolated Work within the right-of-way that would leave unrestored areas for undue periods of time subject to residents/customer criticism) within five calendar days from the time the damage occurred. All other restoration required within the right-of-way shall be scheduled in the customary method for such construction and in accordance with any permit conditions.

Customer Concern Ratios:

Project Outreach's goal for customer concerns is to completely resolve all complaints within 10 business days of receiving a complaint. A formal customer concern shall be defined as a documented concern to JEA Project Outreach. The concern may be of a real or perceived problem that the customer has against the Company.

The JEA Project Manager or designee will notify the Company on a monthly basis of how many concerns were received by JEA's Project Outreach and the number of concerns yet to be resolved. JEA will immediately notify the Company when a concern has been opened and has not been a response to it within five business days. The Company shall contact Project Outreach and provide a written correction plan within five calendar days of receipt of the notice. If at any time the Company allows unresolved concerns to exceed the five business days without prior notification to Project Outreach and the customer concern ratio reaches 3.0 percent, the Company shall be required to appear in front of the Company Performance Review Board to explain the circumstances leading to the unresolved concern. The

Company Performance Review Board will notify the Chief Procurement Officer of the board's decision and any recommended actions, which may include, but are not limited to, additional remedial action, termination of the Contract and/or suspension from JEA's Responsible Bidder's List in all categories for a period not to exceed one year.

If the Company fails to adhere to the customer service requirements stated herein, the Company's performance shall result in a required hearing before the Company Performance Review Board. The Company Performance Review Board will consist of three JEA directors. The hearing will evaluate the Company's remedial action plan and determine whether such plan will be effective. The Company Performance Review Board will present its recommendation to the Chief Procurement Officer and recommended actions that may include additional remedial actions, termination of the Contract and/or suspension from JEA's Responsible Bidder's List in all categories for a period not to exceed one year.

2.13.32. WEATHER PROTECTION

The Company shall provide proper facilities, take all necessary precautions and assume the entire cost for protecting the Work against weather conditions and for handling all storm, flood and ground water, sewage, or other seepage, that may be encountered during the performance of the Contract. The Company shall provide for such contingencies and for carrying on the Work in freezing weather by methods that meet with the approval of the JEA Engineer. If the Company fails to provide such protection, or in the event of an emergency, JEA may provide such protection at the Company's expense.

2.13.33. WORK INFORMATION

In the event the Company requires additional information regarding the scope, technical specifications, Work Locations, personnel requirements, or other information pertinent to the Work or Contract, the Company shall request such information or clarifications from the Contract Administrator in writing. Within the bounds of the JEA Representative's authority, JEA Representatives may provide requested information to the Company.

2.13.34. WORK LOCATION CLEANLINESS

The Company shall, at all times, keep the Work Location free from an accumulation of waste materials or rubbish caused by its operations. At the completion of the Work, the Company shall remove all waste materials and any rubbish from and about the project, as well as any tools, construction equipment, machinery and surplus materials. If the Company fails to clean up at the completion of the Work, JEA may do so and charge the cost thereof to the Company.

2.13.35. WORKMANSHIP

The Company shall perform all Work in a safe and professional manner, so as to render a neat and uniform appearance. The Company shall handle all material in such a way as to preserve its finish and protective coatings from damage. General arrangement shall be in accordance with JEA Distribution Construction Standards and shall be satisfactory to the Contract Administrator.

2.13.36. COMPLIANCE WITH REFERENCED SPECIFICATIONS

All Work, materials, systems or operations specified by reference to standard trade specifications or to manufacturer's published specifications shall comply with the requirements of the referenced specifications, except as modified by the requirements of the Contract Documents. The referenced specification used shall be the latest published edition that is in effect on the effective date of this Contract unless a particular edition is specified. In case of a conflict, the specifications that contain the more stringent requirements will govern.

2.13.37. CUSTOMER OUTAGES

All customer outages shall be held to a minimum. It is realized that certain outages will have to be taken on the electric distribution system. The time of the outages will be at the discretion of System Operations Control Center (SOCC) personnel and must follow the guidelines set forth in the JEA Safety Manual.

It is anticipated that all Work to be done under these Contract Documents can be accomplished during regular working hours. However, should any unforeseen circumstances occur where JEA or its customers cannot be without service during regular working hours, the Work will have to be scheduled to their convenience. Where inclement weather may impact the Company, the Company shall be expected to continue Work as previously scheduled, and return customers to service, without penalty to the JEA. Customer outages shall be limited to 9 a.m. - 3 p.m. unless coordinated by Company with the customer and SOCC.

2.13.38. JEA CUSTOMER SATISFACTION

The Company shall restore affected properties in less than five working days from the time the area is disrupted. Restoration items include, but are not limited to, sod, sidewalk, dirt mounds at poles, etc. JEA has the right to audit the Company's customer service documentation and the Company's actions to determine if the customer service requirements are being met. The Company shall obtain prior approval from JEA if it deviates from customer complaint procedures. The Contract Administrator and JEA's Project Outreach shall monitor the progress toward achievement of the customer satisfaction goals. If the Company fails to comply with any provisions of this part , the Company may be subject to any, all, or any combination of the following actions, or other actions at JEA's sole discretion: (1) Withholding of all payments under this Contract from the Company until it is determined that the Company is in compliance, (2) Termination of the Contract, (3) Suspension from bidding any JEA projects as follows: a) More than three documented Defects-three months b) Five or more documented Defects-six months c) 10 or more documented Defects-one year.

2.13.39. AS-BUILT DRAWINGS (ELECTRICAL)

The Company shall furnish as-built drawings that depict, if applicable, any changes to the Work. The as-built drawings shall also include the required ground ohm readings and the number of ground rods driven at each station.

The validity and verity of the as-built drawings shall be reviewed at a post-construction meeting, which will include the JEA Engineer, JEA Inspector and the Company, within one week of completion of the Work. The JEA Inspector will approve or reject the as-built drawings at this meeting.

At the post-construction meeting, a JEA Representative may accomplish an infrared camera inspection of the Work performed by the Company. The Company shall replace any workmanship found to be defective.

2.13.40. JEA FIBER OPTIC CONSTRUCTION STANDARDS MANUAL

The JEA Fiber Optic Construction Standards Manual provides standard engineering, design and construction practices for JEA. It contains Standard Construction Plates, which illustrate the various standards, as well as providing written specifications, construction notes and a list of required materials. Where applicable, all Work will be performed as specified by the JEA Fiber Optic Construction Standards Manual, which shall be considered as part of the specifications. Fiber Optic Standards can be found online at jea.com.

JEA will evaluate and employ new techniques of construction made possible by the development of new equipment. Any such proposal by the Company is welcome, but is subject to evaluation and approval by the JEA Standards Section.

2.13.41. COMPANY'S KNOWLEDGE OF THE WORK

The Company represents that its total Bid Price and the detailed schedule for the execution of the Work are based on its own knowledge and judgment of the conditions and hazards involved, and not upon any representation of JEA. JEA assumes no responsibility for any understanding or representation made by any of its representatives during or prior to execution of the Contract unless such understandings or representations are expressly stated in the Contract and the Contract expressly provides that JEA assumes the responsibility.

2.13.42. CONTRACTOR'S PLANS AND SPECIFICATIONS

All plans and specifications that the Contractor provides for any building, structure, system or equipment where required by federal, state, local laws and regulation as part of the Work shall bear the seal of a professional engineer duly registered in the State of Florida at no cost to JEA.

2.14. STANDARD REQUIREMENTS FOR CONSTRUCTION

2.14.1. PROTECTION OF THE ENVIRONMENT

The Company and its Subcontractors shall comply with all applicable laws, rules and regulations including, but not limited to, all Environmental Regulations.

A. Asbestos, Lead, or Toxic Mold Notification:
Asbestos, Lead, or Toxic Mold may be present at the Work Location. The Company shall notify the Contract Administrator immediately upon discovery of asbestos, lead, toxic mold. The Company shall not disturb or remove known or discovered asbestos, lead, or toxic mold unless directed by the JEA Representative.

B. Hazardous Materials:
The Company shall bear full responsibility including, but not limited to, payment and liability for the transportation, use, recycling, and disposal of any Hazardous Materials under the Company's control during the performance of the Work. Disposal or recycling of Hazardous Materials shall only be performed at JEA approved facilities. The Company shall provide JEA with appropriate documentation showing proper disposal or recycling of its Hazardous Materials.

The Company shall notify the Contract Administrator in writing of the type, quantity and disposal or recycling method of any hazardous material used during the performance of the Work. The Company shall be solely responsible for the use and disposal or recycling of any such materials. The Company shall submit cleanup procedures to the JEA Representative for review and written approval prior to the use of the hazardous material. In the event that a hazardous material escapes into the environment, the Company shall immediately notify the Contract Administrator in writing of the occurrence and the actions taken. In the event that the Company encounters hazardous materials in the course of construction, the Company shall immediately notify the Contract Administrator verbally, with a written notification to follow. The Contract Administrator shall arrange for disposal by JEA.

JEA has identified and labeled equipment known to contain PCBs. JEA will remove and transport any equipment so identified. The Company shall not remove or transport any equipment containing PCBs. The Company shall immediately notify the JEA Representative of any questionable or unmarked equipment, and the JEA Representative will arrange for testing and identification.

C. Waste Management:
The Company will be solely responsible for the proper management of all waste material, including but not limited to, paints, lubricants, fuels, solvents, drilling mud and materials, construction and demolition debris, used oil and oily waste, land clearing debris, universal waste (mercury containing lamps and devices, batteries, etc.) and other chemicals and hazardous materials used in connection with or generated during the Work, except as specified above. The Company will provide proper containers for waste materials and comply with all applicable laws, rules and

regulations in their disposal or recycling. The Company will dispose of or recycle all empty containers off-site as soon as possible.

D. Wetlands:
The Company understands and agrees that the Work Location may include wetlands or other environmentally sensitive areas. The Company shall not enter these areas during the performance of its Work, unless specifically authorized by the Contract Administrator and appropriate state and federal permits have been obtained.

E. Wildlife:
The Company and/or Subcontractor's employees shall not endanger wildlife species or domestic animals of any kind.

F. Violation of Environmental Laws and Permits:
The Company shall immediately cease any activity that causes or results in a violation of JEA's or Company's environmental permits or federal, state and local laws and regulations. Such violation shall immediately be reported to the Contract Administrator verbally, with written notification to follow. All additional costs due to the Company's noncompliance with the applicable environmental permits or Environmental Regulations shall be paid by the Company.

2.14.2. NPDES PERMIT CONFORMANCE

The Company shall obtain all other applicable local, state, and federal permits. It is unlawful to have any discharges that are not composed entirely of stormwater (except discharges pursuant to a NPDES permit) to the municipal separate stormwater system (MS4). Only non-contaminated water/non-turbid water shall be transported through the MS4. Groundwater discharge (approved by JEA) from dewatering activities may be routed into the stormwater system providing that erosion, and transportation of suspended solids to the system is prevented. If contaminated soil or contaminated groundwater is encountered, the dewatering activity shall cease immediately, and the Company shall contact the Florida Department of Environmental Protection and notify the appropriate department of the incident immediately.

2.14.3. NPDES PERMIT CONFORMANCE - DEWATERING

If Company encounters groundwater, the Company shall be responsible for obtaining; a *Generic Permit for Discharge of Produced Ground Water From any Non-Contaminated Site Activity* from the Florida Department of Environmental Protection (FDEP), and a *Noticed General Permit for Short-term Construction Dewatering* from the St. Johns River Water Management District (SJRWMD) before any dewatering activities can begin.

Company shall also be responsible for developing and utilizing a dewatering system(s) to remove water from the excavations. Prior to beginning any dewatering, the Company shall submit a dewatering plan to JEA for review. The Company shall comply with all sampling requirements listed in FDEP regulation (62-621.300(2) F.A.C.) before any dewatering can begin. The Company shall submit to JEA the sampling analysis results. In the event the sample analysis fails to meet FDEP water quality standards as established in applicable rule, the Company shall not proceed with further permitting or dewatering activities, shall notify JEA of any failure to meet applicable standards, requirements, or rules, and shall await instruction from JEA.

The dewatering plan developed by the Company shall further consider the dewatering volume as estimated using traditional and customary methods. The dewatering plan shall comply with the requirements of 40C-2 and 40C-22, F.A.C., and additional requirements as may be mandated or amended by SJRWMD. In the event the dewatering plan does not comply with those requirements applicable to the *Noticed General Permit for Short-term Construction Dewatering* the Company shall not proceed with further permitting or dewatering activities, shall notify JEA of any failure to meet applicable standards, requirements, or rules, and shall await instruction from JEA.

If the above requirements are not followed, the Company shall be held liable for any fines and/or violations incurred by JEA.

2.14.4. NPDES PERMIT CONFORMANCE - STORMWATER POLLUTION PREVENTION

The Company shall obtain as necessary a *Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP)*, and shall develop a Stormwater Pollution Prevention Plan (SWPPP) compliant with local, state, and federal rules, laws, and ordinances. Company shall be responsible for implementing the SWPPP, installing and maintaining in a functional manner structural and nonstructural best management practices as described therein, evaluating the effectiveness of the best management practices, and employing additional performance based best management practices as may be deemed necessary by JEA. The Company, at its own expense, shall revise, or include as addendum to the SWPPP measures as maybe required by a local, state, or federal authority to remain compliant with local, state, and federal rules, laws, and ordinances.

No additional payments shall be made to Company for revisions or addendums to the SWPPP,

or for the actual implementation of those revisions on the Work site, including those made so as to achieve functional performance based best management practices.

The Company shall obtain all other applicable local, state, and federal permits subsequent to notification of JEA of the need for such authorization(s). It is unlawful to have any discharges that are not composed entirely of stormwater (except discharges pursuant to a NPDES permit) to the Municipal Separate Stormwater System (MS4). Only non-contaminated water/non-turbid water shall be transported through the MS4. Groundwater discharge (approved by the FDEP pursuant to 62-621.300(2)) from dewatering activities may be routed into the stormwater system, drainage ditch, creek, river or wetland providing that erosion, and transportation of suspended solids to the system is prevented. If contaminated soil or contaminated groundwater is encountered, the dewatering activity shall cease immediately, and the Company shall contact JEA¿s Environmental Coordinator, Andrew Sears at (904) 665-7719.

All contractors conducting land disturbing activities shall have at least one corporate representative that is certified for the Florida Department of Environmental Protection Erosion and Sediment Control Inspector Training Manual.

For projects with greater than one acre of disturbed land, a person certified pursuant to the Florida Department of Environmental Protections Erosion and Sediment Control Inspector Training Manual or trained by a certified person shall make the routine inspections shall be maintained and kept on the construction site and made available for inspection during land-disturbing activities. Such inspection shall be made no led that daily and a log of such inspections shall be maintained and kept on the construction site and made available for inspection by City and JEA inspectors throughout the duration of land-disturbing activities. If the inspector is trained by a certified person but not certified themselves, accurate training records must be kept and evidence of annual refresher trainer shall be maintained.

Any required erosion and sediment control plans submitted to the City of Jacksonville must conform to the requirements in the FDEP¿s Florida Department of Environmental Protections Erosion and Sediment Control Inspector Training Manual or the provisions contained in the Land Development Procedures Manual, whichever

Upon approval to proceed to do so by the Owner, the Company shall complete a *Notice of Termination (NOT)* (DEP Doc. No. 62-621.300(6), F.A.C.), to terminate the CGP coverage within one (1) week of final site stabilization.

If the above requirements are not followed, the Company shall be held liable for any fines and/or violations incurred by JEA.

2.14.5. PREVENTION, CONTROL AND ABATEMENT OF EROSION AND SILTATION

The Company shall take steps and make suitable provisions to minimize siltation and erosion of waterways that may result from its operation during the course of construction.

The Company shall make suitable arrangements, which may require the temporary construction of flumes, boxes, or some other device(s), at the Work Location for the drainage and disposal of water. The Company shall be responsible for protecting adjacent property to the Work Location from damage by water resulting from its operations. The Work Location shall be returned to its original condition to the satisfaction of JEA.

The Company is cautioned that execution or maintenance that creates turbidity and that directly or indirectly affects the water quality of any waterway into which storm water is discharged in such a manner as to exceed the limitations prescribed in the Florida Administrative Code, is a violation of the water quality standards of the State of Florida.

Turbidity shall not exceed 29 NTU's, above background level within 100' of the construction activity. Costs incurred by the Company for compliance to the restrictions outlined above shall be included in the cost of the items for which the turbidity control is required, unless a separate line item is included in the Bid Document for turbidity control. Silt barriers shall be used at all waterway crossings or at any time during construction that siltation or erosion may occur. The Company shall submit to the JEA Engineer, for written approval prior to construction, the method to be used to control the turbidity. The JEA Engineer's approval of the method to be used in no way relieves the Company of the liability in case of a citation against JEA.

2.14.6. SILT FENCE ASSEMBLY

The Company shall furnish and install silt fence assembly (including fabric, stakes, etc.) in accordance with the details shown on the Erosion Control Drawings and as required by the Storm Water Pollution Prevention Plan (SWPPP). Company will be responsible for all costs associated with silt fence assembly. There will not be a separate line item for silt fence assembly on the Bid Form.

2.14.7. EARTHWORK

SUITABLE MATERIAL

The Company shall stockpile all material encountered during regular excavation that the JEA Engineer determines is suitable for use as backfill material. Excess suitable material shall not be stored/stockpiled along the right-of-way. JEA will not make separate payment for the use of backfill material obtained on the Work from regular excavation. Excess material shall become the property of the Company and shall be disposed of appropriately outside the right-of-way.

UNSUITABLE MATERIAL

All material encountered during regular excavation that the Geotechnical Engineer determines is unsuitable for use as backfill shall become the property of the Company and the Company shall remove and dispose of it properly. Unsuitable material shall not be stored/stockpiled along the right-of-way. Where unsuitable material is to be replaced, suitable material obtained elsewhere on the Work area shall be used as backfill at no additional cost. In the event there are not sufficient quantities of stockpile suitable material available, Class A-3 sand shall be used as specified below for A-3 Soil Backfill. Except as specified below for A-3 Soil Backfill, JEA will not make separate payment for replacement material used to construct the stabilized sub-base.

OVEREXCAVATION

If the Company encounters material below the bearing elevation of the proposed utility pipe or structure that the Geotechnical Engineer determines to be unsuitable, the Company shall remove this material, after notifying JEA or the City of Jacksonville, and properly dispose of the material. JEA shall pay the Company at the Contract Unit Price for Special Bedding (Contingency) and such payment shall be full compensation including, but not limited to, excavation,

material disposal, dewatering, sheeting and shoring and A-3 Soil backfill replacement. Method of measurement for removal and replacement for overexcavation material shall be per cubic yard of unsuitable material removed and replaced below the bearing elevation and disposed based on actual trench section dimensions in accordance with the JEA Water and Sewer Standards, Details and Materials Manual as amended from time to time, unless otherwise specified in the Contract Documents.

A-3 SOIL BACKFILL

If there is not enough suitable material obtained from regular excavation to use as backfill, then the Company shall import A-3 soil to the Work area to meet the need for fill and backfill as directed by JEA or the City of Jacksonville. The Company shall provide JEA test results for both stockpiled material and imported material to indicate that the materials meet the minimum standards established by the Geotechnical Engineer for this project. JEA will pay the Company at the Contract Unit Price for A-3 soil for the importation and placement of the soil and sand. JEA will not pay the Company for A-3 soil backfill when suitable material from regular excavation will become available, but at the time required, is not available, due to the Company's sequence of work. Measurement of A-3 soil backfill shall be based on actual trench section dimensions and in accordance with Section 801, Item 4.5 of the JEA August 2008 edition of JEA Water and Sewer Standards, Details and Materials Manual, as amended, unless otherwise specified in the Contract Documents. A-3 replacement soil shall not be stored/stockpiled along the right-of-way.

2.14.8. METERS

The Company shall pay all fees and charges required for connections to utilities, concurrency management, parking meter rental/removal and any other assessments imposed on the Work or initial occupancy of the Contract, except those specifically listed herein as provided by JEA.

2.14.9. SUBSURFACE INVESTIGATION

A geotechnical exploration of existing conditions including soft digs where necessary in the general area of the proposed Work has been performed and a report of the findings and recommendations are attached

2.14.10. SURVEYING

Unless specifically stated in the Contract Documents as being provided by JEA, the Company shall be responsible for all surveying necessary to commence and perform this Work. The Company shall employ a land surveyor registered in the State of Florida to reference and restore all property corners and/or monuments that may have been disturbed and to ensure accurate horizontal and vertical control during the construction of this project and for staking locations for new structures. Height and spacing of stakes to be as specified elsewhere herein or as directed by JEA Engineer.

All Work shall be done to the lines, grades and elevations shown on the drawings. Any Work improperly located may be ordered removed and replaced at the Company's expense. The Company shall be responsible for making its own determination of water table variations and shall not assume that any water levels shown by the aforesaid boring data will necessarily be maintained at the level indicated. The Company shall investigate the conditions above or below the surface of the ground as it may deem necessary for the proper and timely performance of its Work including, but not limited to, the making of borings.

2.15. VENDOR PERFORMANCE EVALUATION

2.15.1. VENDOR PERFORMANCE EVALUATION

Use of Vendor Performance Evaluation Scorecards

JEA may evaluate the Company's performance using the evaluation criteria shown on the vendor scorecard available online at JEA.com.

Scores for all metrics shown on the evaluation range from a low of 1, meaning significantly deficient performance, to a high of 5, meaning exceptionally good performance. The Company's performance shall be classified as Top Performance, Acceptable Performance, or Unacceptable Performance, as defined herein. The evaluator will be a designated JEA employee. The evaluator's supervisor and the Chief Purchasing Officer will review deficient performance letters and Unacceptable Performance scorecards, as described below, prior to issuance. When evaluating the Company's performance, JEA will consider the performance of the Company's Subcontractors and suppliers, as part of the Company's performance.

Frequency of Evaluations

JEA may conduct performance evaluations and prepare scorecards in accordance with the procedures described herein at any time during performance of the Work or soon after the completion of the Work. JEA may conduct one or more evaluations determined solely at the discretion of JEA.

Unacceptable Performance

- If at any time, JEA determines, using the criteria described on the scorecard, that the performance of the Company is Unacceptable, the Contract Administrator and Chief Procurement Officer or his designated alternate will notify the Company of such in a letter. The Company shall have 10 days to respond to the Contract Administrator. Such response shall include, and preferably be delivered in-person by an officer of the Company, the specific actions that the Company will take to bring the Company's performance up to at least Acceptable Performance.
- Within 30 days from date of the first Unacceptable Performance letter, the Contract Administrator and Chief Purchasing Officer or his designated alternate will notify the Company by letter as to whether its performance, as determined solely by JEA, is meeting expectations, or is continuing to be Unacceptable. If the Company's performance is described in the letter as meeting expectations, no further remedial action is required by the Company, as long as Company's performance continues to be Acceptable.
- If the Company's performance as described in the letter continues to be Unacceptable, or is inconsistently Acceptable, then the Company shall have 15 days from date of second letter to demonstrate solely through its performance of the Work, that it has achieved Acceptable Performance. At the end of the 15-day period, JEA will prepare a scorecard documenting the Company's performance from the start of Work, or date of most recent scorecard, whichever is latest, and giving due consideration to improvements the Company has made in its performance, or has failed to make. If the scorecard shows Company's performance is Acceptable, then no further remedial action is required by Company as long as Company's performance remains Acceptable. If the scorecard shows the Company's performance is Unacceptable, JEA will take such actions as it deems appropriate including, but not limited to, terminating the Contract for breach, suspending the Company from bidding on any JEA related solicitations, and other remedies available in the JEA Purchasing Code and in law. Such action does not relieve the Company of its obligations under the Contract, nor does it preclude an earlier termination.
- In the event that the Contract Term or the remaining Term of the Contract does not allow for the completion of the deficient performance notification cycles described above for those in danger of receiving an Unacceptable Performance scorecard, JEA may choose to accelerate these cycles at its sole discretion.
- If the Company receives five or more letters of deficiency within any 12 month period, then JEA will prepare a scorecard describing the deficiencies and the Company's performance will be scored as Unacceptable.

Acceptable Performance

JEA expects the Company's performance to be at a minimum Acceptable.

Disputes

In the event that the Company wants to dispute the results of its scorecard performance evaluation, the Company must submit a letter to the Chief Procurement Officer supplying supplemental information that it believes JEA failed to take into account when preparing the scorecard. Such letter, along with supplemental information, must be submitted no later than 10 days following the Company's receipt of the scorecard. If the Chief Procurement Officer decides to change the scorecard, the Company will be notified and a revised scorecard will be prepared, with a copy issued to the Company. If the Chief Procurement Officer decides that no change is warranted, the decision of the Chief Procurement Officer is final. If the Company is to be suspended from consideration for future Award of any contracts, the Company may appeal to the Procurement Appeals Board as per JEA Procurement Code.

Public Records

There can be no expectation of confidentiality of performance-related data in that all performance-related data is subject to disclosure pursuant to Florida Public Records Laws. All scorecards are the property of JEA.

2.16. JEA RESPONSIBILITIES

2.16.1. ACCESS TO THE WORK LOCATIONS

JEA will provide, as indicated in the Contract Documents, and no later than the date when needed by the Company, access to the Work Location, including rights-of-way or access thereto, and such other lands that are designated for the Company's use. JEA will secure easements for permanent structures or permanent changes in existing facilities, unless otherwise specified in the Contract Documents.

2.17. CHANGES IN THE WORK, CONTRACT TIME OR PRICE

2.17.1. AMENDMENTS

This Contract may not be altered or amended except in writing, signed by JEA Chief Procurement Officer, or designee, and the Company Representative, or each of their duly authorized representatives.

2.17.2. FORCE MAJEURE

No party shall be liable for any default or delay in the performance of its obligations under this Contract due to an act of God or other event to the extent that: (a) the non-performing party is without fault in causing such default or delay; (b) such default or delay could not have been prevented by reasonable precautions; and (c) such default or delay could not have been reasonably circumvented by the non-performing party through the use of alternate sources, work-around plans or other means. Such causes include, but are not limited to: act of civil or military authority (including but not limited to courts or administrative agencies); acts of God; war; terrorist attacks; riot; insurrection; inability of JEA to secure approval, validation or sale of bonds; inability of JEA or the Company to obtain any required permits, licenses or zoning; blockades; embargoes; sabotage; epidemics; fires; hurricanes, tornados, floods; or strikes.

In the event of any delay resulting from such causes, the time for performance of each of the parties hereunder (including the payment of monies if such event actually prevents payment) shall be extended for a period of time reasonably necessary to overcome the effect of such delay, except as provided for elsewhere in the Contract Documents.

In the event of any delay or nonperformance resulting from such causes, the party affected shall promptly notify the other in writing of the nature, cause, date of commencement and the anticipated impact of such delay or nonperformance. Such written notice, including Change Orders, shall indicate the extent, if any, to which it is anticipated that any delivery or completion dates will be thereby affected within seven (7) calendar days.

2.17.3. NO DAMAGE FOR DELAY

Damage, loss, expense or delay incurred or experienced by the Company in the prosecution of the Work by reason of unforeseen circumstances, unanticipated difficulties and obstructions, bad weather, or other mischances that are generally considered to be a part of the usual hazards associated with Work, shall be borne entirely by the Company and shall not be the subject of any claim for additional compensation or change in Approved Schedule.

The Company agrees that its sole remedy for any claims, damages or losses related to any delay, disruption or hindrance alleged to be caused by JEA or any of JEA's agents or other contractors, shall be an extension of the Contract completion date.

Any demand for equitable time adjustment must be served in writing to JEA within five days of the event giving rise to the delay, disruption or hindrance. Any request for an equitable time adjustment shall be accompanied by a logical time impact analysis, demonstrating the nature and magnitude of the event to the critical path.

Failure to strictly comply with these requirements shall be deemed a waiver of any right to seek equitable time adjustment.

In the event the "no damage for delay" clause is inapplicable, there shall be no recovery for home office overhead and any damages claimed shall be proven by discreet accounting of direct project costs and no theoretical formula or industry estimating reference manuals shall be permissible.

2.17.4. CHANGE IN THE WORK

To request or claim any change in the Work including, but not limited to change in scope, quantities, pricing, or schedules, the Company shall submit a letter to the Contract Administrator stating such request or claim. JEA shall have the right to approve or disapprove any request or claim for change as it deems necessary and in its best interests consistent with the other Contract requirements. Whether requested by the Company, claimed by the Company, or contemplated by JEA, no change shall be authorized unless made on a JEA Change Order signed by the Contract Administrator or through a formal written amendment to this Contract.

In the event of an emergency endangering life or property where it is appropriate for the Company to take action, the Company shall undertake such actions to preserve life and property. JEA and the Company will determine after emergency is concluded, the extent of out-of-scope work performed by Company, and the Contract Administrator will issue a Change Order or amend the Contract for such work, if any and as necessary.

All requests for changes filed by the Company shall be in writing delivered to the Contract Administrator within 10 working days of when the event that prompted the claim was discovered or should have been discovered. Upon receipt of the Company's claim notification, Contract Administrator will provide written direction as to the procedures that will be used to address the request. The Company's request shall be sufficiently detailed including itemized costs, condition and work descriptions and other information necessary to evaluate the merits of the claim. The Contract Administrator may reject requests providing insufficient supporting information. Any change in the Contract resulting from the request will be incorporated into the Contract via a Change Order or Purchase Order. Where JEA and the Company are unable to reach a mutually acceptable resolution of request, JEA's determination will be final.

Where necessary, JEA will determine the value of work covered by a Change Order using one of the following methods:

- Where the work is covered by established Unit Prices contained in the Contract, the Unit Price will be applied to the quantity of work;
- By mutual acceptance of lump sum price;

- By actual cost and a mutually acceptable fixed amount for overhead and profit, or

Where Bid Price was based on estimates quantities, prior to making final payment, JEA will determine actual quantities using sampling, surveying and other industry recognized means and prepare a Change Order adjusting the price to reflect actual volumes.

The Company shall immediately notify the Contract Administrator in writing of any unauthorized change in the scope of the Work or significant change in the quantities of the Work that may increase the Contract Price, require an extension of Work schedule, or negatively impact permitting or other regulatory requirements.

The Work schedule may be changed only by a Change Order or Purchase Order. The Company's request or claim for a Work schedule adjustment shall be in writing delivered to the Contract Administrator within five working days following the discovery of the event that prompted the claim or when the event should have been discovered. Where accepted by JEA, changes to Work schedule will only adjust for critical path impacts. Failure to include the necessary critical path analysis with request shall be grounds for rejecting the claim. The path of critical events mentioned herein means the series of interdependent Work events that must be sequentially performed and that require a longer total time to perform than any other such series. Upon receipt of the Company's request for a change in the Work schedule, the Contract Administrator will provide any additional directions in writing detailing the procedures that will be used to resolve the request, including provision of time impact or manpower and equipment loading schedules. Where JEA and the Company are unable to reach a mutually acceptable resolution of request, JEA will make a commercially reasonable determination, made in accordance with JEA's Procurement Code, which shall be final.

All Work defined on Change Orders shall be subject to the conditions of the Contract, unless specifically noted on the Change Order.

2.17.5. ASSIGNING OF CONTRACT

Each party agrees that it shall not assign, delegate, or otherwise dispose of the Contract, the duties to be performed under the Contract, or the monies to become due under the Contract without the other party's prior written consent.

The assignment of the Contract will not relieve either of the parties of any of its obligations until such obligations have been assumed in writing by the assignee. If the Contract is assigned by either of the parties, it will be binding upon and will inure to the benefit of the permitted assignee. The Company shall be liable for all acts and omissions of its assignee or its Subcontractor.

2.17.6. CHANGE OF LUMP SUM BULK BID PRICE

All duties, responsibilities and obligations assigned to or undertaken by the Company in performing the Work described in the Contract shall be at the Company's expense without change to the Lump Sum for Complete Scope of Work as indicated on Exhibit A/Bid Form (hereinafter referred to as "Lump Sum Bulk Bid Price".).

If the Company is entitled by the Contract Documents to make a claim for an increase in the Lump Sum Bulk Bid Price, the Company shall make such claim in writing, delivered to JEA within 10 business days of the occurrence of the event giving rise to the claim.

In all claims for adjustments in the Lump Sum Bulk Bid Price, JEA's determination shall be final. Any change in the Lump Sum Bulk Bid Price resulting from such claim shall only be made by a JEA Change Order.

In the event that Unit Prices or labor, equipment and materials (L.E.M.) rates contained in the Contract Documents are applicable to the value of any Work associated with a claim for increase or decrease in the Lump Sum Bulk Bid Price,

the change shall be documented in a JEA Change Order and the change amount shall be determined in one of the following ways:

1. Unit Prices Established by JEA Third Party Contracts: Where the quantities of the claim are covered by established Unit Prices contained in third party JEA Unit Price Contracts, the Unit Prices and L.E.M. rates contained in these contracts will be applied to the quantities stated in Company's claim. The JEA Unit Prices Contracts to be used are as follows:

JEA Contract Number 147043, JEA Solicitation 022-15, Underground Electric Distribution Facilities and Manhole/Ductbank Unit Price Construction and Maintenance Contract; or

JEA Contract Numbers 114933, JEA Solicitation 062-11, Overhead Distribution-Transmission Facilities Up C and M and Pole Removal.

2. Unit Prices Not Established: In the event that Unit Prices or L.E.M. rates are not applicable to Company's claim, the Company shall submit an itemized breakdown of costs, in the form prescribed by JEA, for each of the subcontracts involved and for the Company's cost, the change shall be documented in a JEA Change Order, and the change amount shall be ultimately determined by JEA in one of the following ways:

by mutual acceptance of the lump sum amount; or

by actual cost and a mutually acceptable fixed amount for overhead and profit.

Estimated quantities will be adjusted to final quantities prior to Final Payment. JEA will compute the final quantities of JEA Change Order based upon measurements or surveys provided by JEA.

2.18. MISCELLANEOUS PROVISIONS

2.18.1. AMBIGUOUS CONTRACT PROVISIONS

The parties agree that this Contract has been the subject of meaningful analysis and/or discussions of the specifications, terms and conditions contained in this Contract. Therefore, doubtful or ambiguous provisions, if any, contained in this Contract will not be construed against the party who physically prepared this Contract.

2.18.2. APPLICABLE STATE LAW; VENUE; SEVERABILITY

The rights, obligations and remedies of the parties as specified under the Contract will be interpreted and governed in all respects exclusively by the laws of the State of Florida without giving effect to the principles of conflicts of laws thereof. Should any provision of the Contract be determined by the courts to be illegal or in conflict with any law of the State of Florida, the validity of the remaining provisions will not be impaired. Litigation involving this Contract or any provision thereof shall take place in the State or Federal Courts located exclusively in Jacksonville, Duval County, Florida.

2.18.3. CUMULATIVE REMEDIES

Except as otherwise expressly provided in this Contract, all remedies provided for in this Contract shall be cumulative and in addition to and not in lieu of any other remedies available to either party at law, in equity or otherwise.

2.18.4. ENTIRE AGREEMENT

This Contract constitutes the entire agreement between the parties. No statement, representation, writing, understanding, or agreement made by either party, or any representative of either party, which are not expressed herein

shall be binding. All changes to, additions to, modifications of, or amendment to this Contract, or any of the terms, provisions and conditions hereof, shall be binding only when in writing and signed by the authorized officer, agent or representative of each of the parties hereto.

2.18.5. EXPANDED DEFINITIONS

Unless otherwise specified, words importing the singular include the plural and vice versa and words importing gender include all genders. The term "including" means "including without limitation", and the terms "include", "includes" and "included" have similar meanings. Any reference in this Contract to any other agreement is deemed to include a reference to that other agreement, as amended, supplemented or restated from time to time. Any reference in the Contract to "all applicable laws, rules and regulations" means all federal, state and local laws, rules, regulations, ordinances, statutes, codes and practices.

2.18.6. HEADINGS

Headings appearing herein are inserted for convenience or reference only and shall in no way be construed to be interpretations of text.

2.18.7. INDEPENDENT CONTRACTOR

Company is performing this Contract as an independent contractor and nothing in this Contract will be deemed to constitute a partnership, joint venture, agency, or fiduciary relationship between JEA and Company. Neither Company nor JEA will be or become liable or bound by any representation, act, or omission of the other.

2.18.8. LANGUAGE AND MEASUREMENTS

All communication between the Company and JEA, including all documents, notes on drawings, and submissions required under the Contract, will be in the English language. Unless otherwise specified in the Contract, the US System of Measurements shall be used for quantity measurement. All instrumentation and equipment will be calibrated in US System of Measures.

2.18.9. MEETINGS AND PUBLIC HEARINGS

The Company will, upon request by JEA, attend all meetings and public hearings as required, in any capacity, as directed by JEA.

2.18.10. NEGOTIATED CONTRACT

Except as otherwise expressly provided, all provisions of this Contract shall be binding upon and shall inure to the benefit of the parties, their legal representatives, successors and assigns. The parties agree that they have had meaningful discussion and negotiation of the provisions, terms and conditions contained in this Contract. Therefore, doubtful or ambiguous provisions, if any, contained in the Contract shall not be construed against the party who physically prepared this Contract.

2.18.11. NONEXCLUSIVE

Notwithstanding anything contained herein that may appear to be the contrary, this Contract is "non-exclusive" and JEA reserves the right, in its sole discretion, to retain other companies to perform the Work, and/or JEA may self-perform the Work itself.

2.18.12. NONWAIVER

Failure by either party to insist upon strict performance of any of the provisions of the Contract will not release either party from any of its obligations under the Contract.

2.18.13. REFERENCES

Unless otherwise specified, each reference to a statute, ordinance, law, policy, procedure, process, document, drawing, or other informational material is deemed to be a reference to that item, as amended or supplemented from time to time. All referenced items shall have the enforcement ability as if they are fully incorporated herein.

2.18.14. SEVERABILITY

In the event that any provision of this Contract is found to be unenforceable under applicable law, the parties agree to replace such provision with a substitute provision that most nearly reflects the original intentions of the parties and is enforceable under applicable law, and the remainder of this Contract shall continue in full force and effect.
With regard to any provision in this agreement pertaining to damages, equitable or otherwise, it is the intent of the Parties that under no circumstances shall there be recovery for home office overhead. Any damages claimed shall be proven by discreet accounting of direct project costs and no theoretical formula or industry estimating reference manuals shall be permissible.

2.18.15. SUBCONTRACTING OR ASSIGNING OF CONTRACT

Each party agrees that it shall not subcontract, assign, delegate, or otherwise dispose of the Contract, the duties to be performed under the Contract, or the monies to become due under the Contract without the other party's prior written consent.

The assignment of the Contract will not relieve either of the parties of any of its obligations until such obligations have been assumed in writing by the assignee. If the Contract is assigned by either of the parties, it will be binding upon and will inure to the benefit of the permitted assignee. The Company shall be liable for all acts and omissions of its assignee or its Subcontractor.

In the event the Company obtains JEA approval to use Subcontractors, the Company is obligated to provide Subcontractors possessing the skills, certifications, registrations, licenses, training, tools, demeanor, motivation and attitude to successfully perform the work for which they are subcontracted. The Company is obligated to remove Subcontractors from performing Work under this Contract when the Company recognizes that a Subcontractor is failing to work in a manner consistent with the requirements of this Contract, or when JEA notifies the Company that JEA has determined a Subcontractor is failing to work in a manner consistent with the requirements of this Contract.

2.18.16. SURVIVAL

The obligations of JEA and the Company under this Contract that are not, by the express terms of this Contract, to be performed fully during the Term, shall survive the termination of this Contract.

2.18.17. TIME AND DATE

Unless otherwise specified, references to time of day or date mean the local time or date in Jacksonville, FL. If under this Contract any payment or calculation is to be made, or any other action is to be taken, on or as of a day that is not a regular business day for JEA, that payment or calculation is to be made, and that other action is to be taken, as applicable, on or as of the next day that is a regular business day. Where reference is made to day or days, it means calendar days. Where reference is made to workday, workdays, business day, or business days, it means regular working days for JEA Procurement.

2.18.18. TIME OF ESSENCE

For every material requirement of this Contract, time is of the essence.

2.18.19. TITLE TO MATERIALS FOUND

JEA shall retain the title to water, mineral matter, timber and any other materials that the Company, or its Subcontractors, encounters during the excavation or other operations of the Work. The Company shall use or dispose of this material in accordance with the Contract or written instructions from the Contract Administrator. Any materials found in the excavation, or other operations of the Company, that are of archaeological or historical value shall be left in place. The Company shall immediately notify JEA of the find and shall take no further action until directed by JEA.

2.18.20. USE OF JEA CONTRACTS BY THE CITY OF JACKSONVILLE

Where the City of Jacksonville's or its other independent agencies' or political subdivisions' procurement codes all use of JEA contracts, the Company agrees to extend any pricing and other contractual terms to such entities.

2.18.21. WAIVER OF CLAIMS

A delay or omission by JEA to exercise any right or power under this Contract shall not be construed to be a waiver thereof. A waiver by JEA under this Contract shall not be effective unless it is in writing and signed by the party granting the waiver. A waiver by a party of a right under or breach of, this Contract shall not be construed to operate as a waiver of any other or successive rights under, or breaches of, this Contract.

The Company's obligations to perform and complete the Work in accordance with the Contract shall be absolute. None of the following will constitute a waiver of any of JEA's rights under the Contract: approval of payments, including final payment; Certificate of Contract Completion; any use of the Work by JEA; nor any correction of faulty or defective work by JEA.

2.18.22. JEA PROJECT SECURITY PROGRAM

The JEA Project Security Program establishes a coordinated security program and assigns specific security responsibilities for which the Company and/or its Subcontractors shall be responsible at while performing services at existing JEA facilities and upon the substantial completion of new facilities. The programs objectives are 1) to direct all project security activities toward a single goal--no breaches, thefts or vandalism, and 2) to ensure effective coordination and communication of all project security activities with JEA Security.

In general, the Company shall provide on-site JEA security personnel at any time a JEA facility's perimeter is unsecured, including but not limited to, alarms disabled, fences or gates down, traffic flows that require gates to be opened repeatedly and/or for more than one hour of the work day. The Company shall schedule security personnel through JEA Security. Where existing lighting is disabled or otherwise impacted by the Work, the Company shall provide temporary lighting equal to or exceeding that which exists.

Further, the Company shall be responsible for complying with all applicable provisions of Chapter 12 "Security Program" of the JEA Contractor Safety Management Process Safety Requirements, a copy of which may be obtained upon request.

3. TECHNICAL SPECIFICATIONS/DETAILED SCOPE OF WORK

3.1. TECHNICAL SPECIFICATIONS/DETAILED SCOPE OF WORK (APPENDIX A)

Technical Specifications and a Detailed Scope of Work are located in Appendix A of this document.

4. FORMS

4.1. ADDITIONAL FORMS

- Appendix B- Bid Form

- NP172 Northside Bay Completion Drawings (combined)
- SJ172 SJRPP Station Service Modifications Drawings (combined)

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Building Community

PROJECT DESIGN SEGMENT 20410
NORTHSIDE BAY COMPLETION
SAMPLE SCHEDULE OF VALUES

GENERAL NOTES:

1. THE CONTRACTOR SHALL CREATE AND SUBMIT A SCHEDULE OF VALUES TO THE PROJECT REPRESENTATIVE AT THE TIME OF PRE-CONSTRUCTION CONFERENCE. THE PROJECT REPRESENTATIVE SHALL REVIEW AND APPROVE THE SCHEDULE OF VALUES, BASED UPON THE REASONABLE APPORTIONMENT OF COSTS TO THE VARIOUS ELEMENTS OF THE WORK IN PLACE.

2. THE SCHEDULE OF VALUES SHALL BE THE JEA'S MEANS OF ADMINISTERING PAYMENT FOR WORK IN PLACE UNDER THIS CONTRACT. EACH INVOICE FROM THE CONTRACTOR SHALL CONTAIN THE INFORMATION SHOWN IN THE FORTHCOMING TABLE TO INDICATE WORK COMPLETED AND PAYBLE DURING EACH MONTHLY BILLING PERIOD, AS WELL AS INDICATING PAST AND REMAINING WORK. INVOICES SUBMITTED WITHOUT AN ACCEPTED, COMPLETED SCHEDULE OF VALUES SHALL BE RETURNED UNPAID.

3. THE ITEMS LISTED IN THIS SCHEDULE OF VALUES ARE SAMPLE ITEMS ONLY; THEY ARE NOT INTENDED TO BE COMPLETE AND ARE PROVIDED ONLY TO INDICATE THE LEVEL OF DETAIL REQUIRED. THE CONTRACTOR SHALL FORMULATE A DETAILED LIST OF ITEMS THAT ARE SPECIFIC TO THE WORK OF THIS CONTRACT.

4. AN ELECTRONIC COPY OF THIS DOCUMENT IS AVAILABLE VIA ELECTRONIC MAIL BY COPYING THE "FILE" ADDRESS LISTED BELOW INTO AN ELECTRONIC MAIL, AND SENDING THE ELECTRONIC MAIL REQUEST TO THE PROJECT ENGINEER. THE PROJECT ENGINEER'S ADDRESS IS LISTED IN SECTION VII OF THIS SPECIFICATION.

SAMPLE SCHEDULE OF VALUES
NORTHSIDE BAY COMPLETION

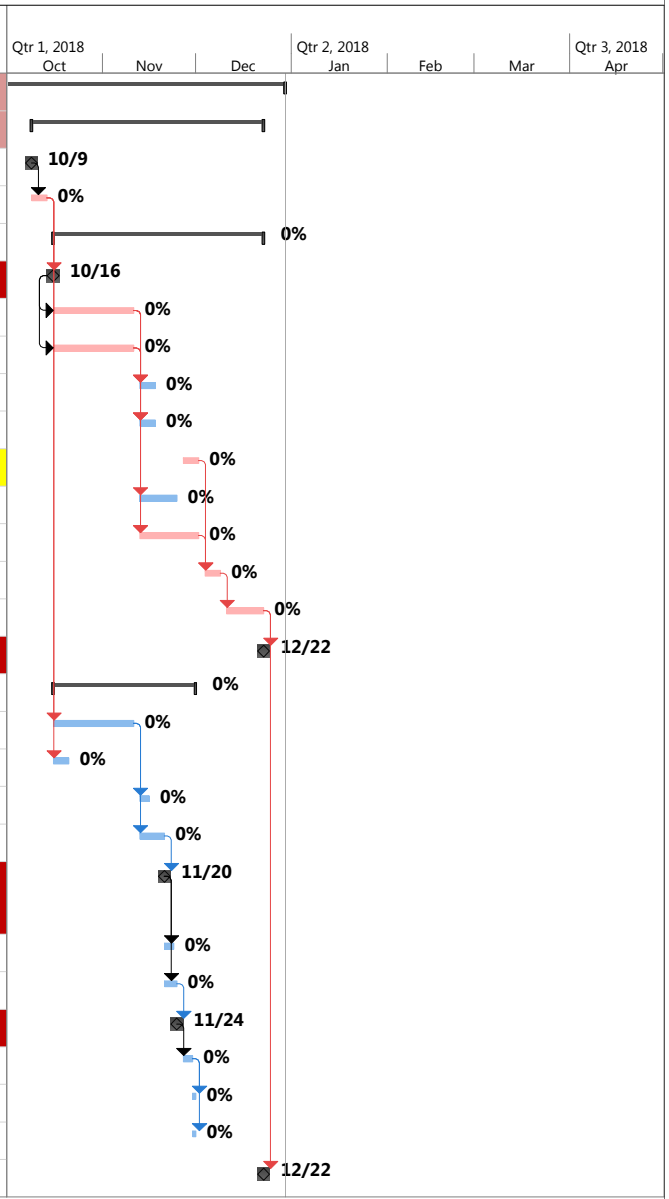
ITEM	SCHEDULE		PERCENT COMPLETE		AMOUNT EARNED TO DATE		
DESCRIPTION	LABOR	MATERIAL	LABOR	MATERIAL	LABOR	MATERIAL	TOTAL
1. MOBILIZATION / ADMINISTRATION							
1.1. PROJECT ADMINISTRATION							
1.2. SURVEY/ESTABLISH BASELINES							
1.3. AS-BUILTS							
2. CIVIL SITE WORK							
2.1. SOIL EROSION CONTROL							
2.2. GRADING & DRAINAGE							
2.2.1. GRADING							
2.2.2. YARD STABILIZATION/ GEOTEXTILES							
2.3. FOUNDATIONS							
2.3.1. DS1							
2.3.2. BR1							
2.4. TESTING							
2.4.1. SOILS							
2.4.2. CONCRETE							
2.5. HERBICIDE							
2.6. ROCKING							
3. CONTROL BUILDING							
3.1. MISCELLANEOUS							
4. RACEWAY							
4.1. CONDUIT							
4.1.1. 1 IN. CONDUIT							
4.1.2. 1.5 IN. CONDUIT							
4.1.3. 3 IN. CONDUIT							
5. GROUNDING							
5.1. 7#5 COPPERWELD STRUCTURE, EQUIPMENT TAPS							
5.2. CADWELD CONNECTIONS							
6. SUBSTATION							

SAMPLE SCHEDULE OF VALUES
NORTHSIDE BAY COMPLETION

ITEM	SCHEDULE		PERCENT COMPLETE		AMOUNT EARNED TO DATE		
DESCRIPTION	LABOR	MATERIAL	LABOR	MATERIAL	LABOR	MATERIAL	TOTAL
6.1. GENERAL							
6.1.1. RECEIVING / OFF-LOADING SUBSTATION PACKAGE							
6.1.2. TRANSPORTATION OF MISC. MATERIAL							
6.2. STRUCTURE ERECTION							
6.2.1. A-FRAME STRUCTURE ERECTION							
6.3. 230 KV EQUIPMENT INSTALLATION							
6.3.1. 230 KV INSULATORS, BUSWORK, CONNECTORS							
6.3.2. 230 KV LA'S							
6.3.3. 230 KV BREAKER							
6.3.4. 230 KV CABLE JUMPERS							
6.4. YARD LIGHTING							
6.4.1. A-FRAME LIGHTS							
6.4.2. CABLING							
6.5. POWER AND CONTROL CABLE							
6.5.1. 21#10 TYPE BS							
6.5.2. 8#10 TYPE BS							
6.5.3. 4#10 TYPE BS							
6.5.4. #2 TYPE C							
6.5.5. #6 TYPE C							
6.5.6. 3#10 TYPE C							
6.5.7. TERMINATE AC CABLE							
6.5.8. TERMINATE DC CABLE							
7. ELECTRICAL TESTING							
7.1. INFRARED TEMPERATURE SURVEY							
8. MISCELLANEOUS OTHER (SPECIFY)							

SCHEDULE - Northside Bay Addition Const.mpp

ID	WBS	Task Name	Duration	Start	Finish
1	**1**	**Northside 230kV Bay Addition**	**175 days**	**Mon 5/1/17**	**Fri 12/29/17**
2	**1.1**	**Construction**	**55 days**	**Mon 10/9/17**	**Fri 12/22/17**
3	1.1.1	Commence Construction & Pre-Construction Meeting	0 days	Mon 10/9/17	Mon 10/9/17
4	1.1.2	Construction Walkdown, Site Preparation, Mobilization, Survey	5 days	Mon 10/9/17	Fri 10/13/17
5	**1.1.3**	**Northside Construction**	**50 days**	**Mon 10/16/17**	**Fri 12/22/17**
6	1.1.3.1	BEGIN OUTAGE Open Breaker 950G2 and Switches 9323, 9322, 9321, & 9320	0 days	Mon 10/16/17	Mon 10/16/17
7	1.1.3.2	Drilled Caisson Installation Qty-4 (30 Day Cure)	20 days	Mon 10/16/17	Fri 11/10/17
8	1.1.3.3	Breaker Foundation Installation (30 Day Cure)	20 days	Mon 10/16/17	Fri 11/10/17
9	1.1.3.4	Ground Grid Installation	5 days	Mon 11/13/17	Fri 11/17/17
10	1.1.3.5	230kV Yard Conduit Installation	5 days	Mon 11/13/17	Fri 11/17/17
11	1.1.3.6	New Breaker Relay Panel Installation	5 days	Mon 11/27/17	Fri 12/1/17
12	1.1.3.7	230kV Yard Steel Installation	10 days	Mon 11/13/17	Fri 11/24/17
13	1.1.3.8	230kV Yard Buswork, Breakers, Jumpers	15 days	Mon 11/13/17	Fri 12/1/17
14	1.1.3.9	26kV Yard Low Voltage Electrical Installation & Cabling	5 days	Mon 12/4/17	Fri 12/8/17
15	1.1.3.10	26kV Yard P&C Checkout	10 days	Mon 12/11/17	Fri 12/22/17
16	1.1.3.11	END OUTAGE Energize Station	0 days	Fri 12/22/17	Fri 12/22/17
17	**1.1.4**	**SJRPP Construction**	**34 days**	**Mon 10/16/17**	**Thu 11/30/17**
18	1.1.4.1	PVT Foundation Installation (30 Day Cure)	20 days	Mon 10/16/17	Fri 11/10/17
19	1.1.4.2	Install Conduit System	5 days	Mon 10/16/17	Fri 10/20/17
20	1.1.4.3	Install PVT Grounding	3 days	Mon 11/13/17	Wed 11/15/17
21	1.1.4.4	Install PVT Structure	6 days	Mon 11/13/17	Mon 11/20/17
22	1.1.4.5	BEGIN OUTAGE Open Breakers 937E, 9SUTE, 938E, 9G1E and Switches 9017-9024	0 days	Mon 11/20/17	Mon 11/20/17
23	1.1.4.6	Install 3x NEMA on Bus (contractor to weld)	3 days	Tue 11/21/17	Thu 11/23/17
24	1.1.4.7	Install PVTs, Cable, and Conduit to PVT Junction Box	4 days	Tue 11/21/17	Fri 11/24/17
25	1.1.4.8	END OUTAGE Energize East Bus	0 days	Fri 11/24/17	Fri 11/24/17
26	1.1.4.9	Install Station Service Cables	3 days	Mon 11/27/17	Wed 11/29/17
27	1.1.4.10	De-energize Plant SS Feeds	1 day	Thu 11/30/17	Thu 11/30/17
28	1.1.4.11	Terminate and Energize New SS Feeds	1 day	Thu 11/30/17	Thu 11/30/17
29	1.1.5	Construction Substantially Complete Cleanup and Demob	0 days	Fri 12/22/17	Fri 12/22/17



Critical	Task Progress	Baseline	Summary	Inactive Task
Critical Split	Manual Task	Baseline Split	Manual Summary	Inactive Milestone
Critical Progress	Start-only	Baseline Milestone	Project Summary	Inactive Summary
Task	Finish-only	Milestone	External Tasks	Deadline
Split	Duration-only	Summary Progress	External Milestone	

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PROJECT DESIGN SEGMENT 20410
NORTHSIDE BAY COMPLETION
BILL OF NON-STOCK ELECTRICAL MATERIALS

GENERAL NOTES:

1. THE PURPOSE OF THE NON-STOCK MATERIAL LIST IS TO IDENTIFY LONG LEAD TIME OR OTHERWISE UNIQUE OR IMPORTANT MATERIAL THAT IS TYPICALLY A NON-STOCK ITEM FOR JEA, OR IS NOT USUALLY STOCKED IN SUFFICIENT QUANTITY. THE MATERIAL MAY BE PROVIDED BY JEA TO THE CONTRACTOR, OR MAY BE REQUIRED TO BE PROCURED BY THE CONTRACTOR. ALL MATERIAL SHALL BE PROVIDED BY THE CONTRACTOR UNLESS NOTED AS BEING PROCURED BY "OWNER".
2. THE CONTRACTOR SHALL DETERMINE THE SCOPE OF SUPPLY BASED ON ENGINEERING DRAWINGS AND THE CONTRACT DOCUMENTS. THE MATERIAL REPRESENTED IN THE DOCUMENTS IS PROVIDED AS AN ENGINEERING ESTIMATE TO ASSIST WITH BIDDING AND PRELIMINARY PROJECT PLANNING. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL QUANTITIES.
3. ALL MATERIALS PROCURED OR RECEIVED BY THE CONTRACTOR SHALL REMAIN IN THE CARE, CUSTODY, AND CONTROL OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE. CONTRACTOR WILL BE RESPONSIBLE FOR ANY LOSS OR DAMAGE TO SAID MATERIAL.
4. ALL OTHER MATERIAL REQUIRED FOR A COMPLETE INSTALLATION THAT MAY BE REASONABLY INFERRED FORM THESE DRAWINGS AND SPECIFICATIONS, BUT NOT SPECIFICALLY LISTED, SHALL BE SUPPLIED BY THE CONTRACTOR IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS, BEST INDUSTRY PRACTICES, AND PREVAILING CUSTOM. LITERAL ADHERENCE SHALL NOT RELIEVE THE CONTRACTOR OF THE ULTIMATE RESPONSIBILITY FOR ACCOMPLISHING THE INTENT OF THE PROJECT. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO ALL SOIL, REBAR, CONCRETE, AGGREGATE, GEOTEXTILES, PIPE, CONTAINMENT LINER, FENCING, LANDSCAPING, CONDUIT, CONDUIT FITTINGS AND HARDWARE, GROUNDING CONDUCTOR AND CONNECTORS, CLAMPS, UNISTRUT, FASTENERS, MISCELLANEOUS ELECTRICAL EQUIPMENT, WIREWAY, ELECTRICAL BOXES, RECEPTACLES, SWITCHES, TERMINAL BLOCKS, CONNECTORS, POWER CABLE, FITTINGS, ALL LABELING MATERIALS, ETC.

SUBSTATION MATERIAL PACKAGER NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR RECEIVING, UNLOADING, AND INSTALLING THE MATERIALS FROM THE OWNER'S SUBSTATION PACKAGER IN THE MANNER INDICATED IN THESE SPECIFICATIONS AND DRAWINGS.
2. THE CONTRACTOR SHALL REQUEST DELIVERY OF THESE ITEMS VIA THE PROJECT REPRESENTATIVE. THE AVAILABILITY OF THESE ITEMS IS CLOSELY LINKED TO THE PROJECT SCHEDULE AS LISTED IN THESE SPECIFICATIONS AND DRAWINGS.
3. THE COLUMN LISTED AS "ITEM ID #" CORRESPONDS TO THE ITEM CIRCLES SHOWN ON THE SUBSTATION PACKAGER DRAWINGS. WHERE DISCREPANCIES EXIST; THE CONTRACTOR SHOULD NOTIFY THE PROJECT ENGINEER IN WRITING FOR CLARIFICATION AND / OR CORRECTION.

BILL OF NON-STOCK ELECTRICAL MATERIAL
NORTHSIDE BAY COMPLETION

ITEM #	QTY	DESCRIPTION	MANUFACTURER	PART #	COMMENTS	PROCUREMENT BY
1.	LOT	CONDUIT & DUCTBANK MATERIALS	------	------	SEE CONDUIT SCHEDULE	CONTRACTOR
2.	LOT	LOW VOLTAGE AC BREAKERS	------	------	------	CONTRACTOR
3.	LOT	600V POWER CABLE	------	------	SEE CABLE SCHEDULE	CONTRACTOR
4.	LOT	MISC. MATERIALS TO COMPLETE PROJECT	------	------	SEE GENERAL NOTE 4	CONTRACTOR
5.	1	CADWELD MOLD, TYPE TA, 19#8 CW MAIN TO 7#5 CW TAP	CADWELD	TAC9G9E	------	CONTRACTOR
6.	LOT	CADWELD SYSTEM WELD METALS, IGNITION, CLAMPS, BRUSHES, RASPS AND OTHER MATERIAL AS REQUIRED	CADWELD	VARIOUS	------	CONTRACTOR

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PROJECT DESIGN SEGMENT 20410
NORTHSIDE BAY COMPLETION
MATERIALS FURNISHED BY OWNER

GENERAL NOTES:

1. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR TRANSPORTING HIGH-VOLTAGE CIRCUIT BREAKERS TO THE SUBSTATION SITE. THE CONTRACTOR'S RESPONSIBILITY IN REGARDS TO SITE ACCESS, FOUNDATIONS, AND ASSEMBLY OF THE LARGE EQUIPMENT IS OUTLINED IN SECTION IX OF THESE SPECIFICATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ORDERING THE JEA STOCK MATERIAL THROUGH THE JEA PROJECT REPRESENTATIVE AT LEAST TWO (2) WEEKS IN ADVANCE OF NEED, RECEIVING AND LOADING THE MATERIAL AT AN ARBITRARY JEA LOCATION WITHIN DUVAL COUNTY, FLORIDA, AS WELL AS TRANSPORTING THE MATERIAL TO THE SUBSTATION SITE, OFFLOADING, AND INSTALLING THE MATERIAL AT THE JOBSITE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSPORTING AND OFFLOADING THE 125VDC STATION BATTERIES, BATTERY CHARGERS, AND ACCESSORIES AT THE SUBSTATION SITE FROM AN ARBITRARY JEA LOCATION WITHIN DUVAL COUNTY, FLORIDA. THE CONTRACTOR SHALL MOVE THE BATTERY BANK CELLS, RACKS, AND EQUIPMENT TO THE BATTERY BANK ROOM, UPON COMPLETION OF THE BATTERY BANK ROOM, FOR INSTALLATION BY THE MANUFACTURER.
4. THE OWNER SHALL FURNISH, TRANSPORT, AND INSTALL THE COMMUNICATIONS AND SECURITY RACKS IN THE CONTROL HOUSE.
5. ALL MATERIALS PICKED UP OR RECEIVED BY THE CONTRACTOR SHALL REMAIN IN THE CARE, CUSTODY, AND CONTROL OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LOSS OR DAMAGE TO SAID MATERIALS.
6. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING MISCELLANEOUS ITEMS NOT LISTED IN THIS MATERIAL LIST, AS WELL AS ADDITIONAL MATERIALS LISTED ON THE DRAWINGS AND IN THE SPECIFICATIONS. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO CONDUIT, CONDUIT FITTINGS AND HARDWARE, GROUNDING CONDUCTOR AND CONNECTORS, CLAMPS, UNISTRUT, FASTENERS, MISCELLANEOUS ELECTRICAL EQUIPMENT, WIREWAY, ELECTRICAL BOXES, RECEPTACLES, SWITCHES, TERMINAL BLOCKS, CONNECTORS, POWER CABLE, FITTINGS, ALL LABELING MATERIALS, ETC.

MATERIALS FURNISHED BY OWNER
NORTHSIDE BAY COMPLETION

QTY	DESCRIPTION	MANUFACTURER	COMMENTS	DELIVERED TO / PICKUP FROM	RESPONSIBILITY FOR TRANSPORT / OFF-LOAD
1 LOT	LOT OF SUBSTATION ANCHOR BOLTS, BUSWORK, STRUCTURES, AND ASSOCIATED EQUIPMENT	FURNISHED BY SUBSTATION PACKAGER	SEE APPENDIX III	PROVIDED BY SUBSTATION PACKAGER - DELIVERED TO SUBSTATION SITE	TRANSPORTATION BY JEA OFF-LOAD BY CONTRACTOR
1	230KV POWER CIRCUIT BREAKERS	-------	-------	SEE NOTE 1	TRANSPORTATION BY JEA OFF-LOAD BY CONTRACTOR
TBD	FEET, SHIELDED CONTROL CABLE, #10, 4/C 5000 FT. SPOOL TYP.	STORE ROOM STOCK # CAICN016	-------	SEE NOTE 2	CONTRACTOR
TBD	FEET, SHIELDED CONTROL CABLE, #10, 8/C 2500 FT. SPOOL TYP.	STORE ROOM STOCK # CAICN017	-------	SEE NOTE 2	CONTRACTOR
TBD	FEET, SHIELDED CONTROL CABLE, #10, 21/C 2500 FT. SPOOL TYP.	STORE ROOM STOCK # CAICN018	-------	SEE NOTE 2	CONTRACTOR
4	LUMINAIRE, LED, 38W REPLACEMENT, COBRAHEAD, 120 VAC, *USE PHOTO-CONTROL STLPC010*	STORE ROOM STOCK # STLLE001	-------	SEE NOTE 2	CONTRACTOR
4	PHOTOCONTROL, LONG LIFE FOR LED FIXTURE, 1280 JOULE MOV, FAIL OFF, GREEN	STORE ROOM STOCK # STLPC010	-------	SEE NOTE 2	CONTRACTOR

Building Community

PROJECT DESIGN SEGMENT 20410
NORTHSIDE BAY COMPLETION
CONDUIT SCHEDULE

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY CONDUIT MATERIALS, INCLUDING FITTINGS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL CONDUIT LENGTHS. CONDUIT LENGTHS ARE APPROXIMATE.

CONDUIT LEGEND:

UV -	UV RESISTANT PVC CONDUIT, SCH 40; LFMC AS REQ.
EMT -	ELECTRICAL METALLIC TUBING
RMC -	RIGID METALLIC (GALVANIZED STEEL) CONDUIT
IMC -	INTERMEDIATE METALLIC CONDUIT
LFMC -	LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT
WW -	SQUARE WIREWAY
AL -	ALUMINUM CONDUIT

FILE: NP17 - APPENDIX V - CONDUIT SCHEDULE.DOCX

DATE: 7/3/2017

CONDUIT SCHEDULE
NORTHSIDE BAY COMPLETION

CONDUIT #	FROM	TO	SIZE IN.	TYPE	~LENGTH FT.	CABLES IN CONDUIT #	REMARKS
BREAKER 934S							
934SC1	BREAKER 934S	CABLE TRENCH	3	UV	130	934S/934PR	CONTROL
934SC2	BREAKER 934S	CABLE TRENCH	3	UV	130	934S/934SC	CONTROL
934SC3	BREAKER 934S	CABLE TRENCH	3	UV	130	934S/SB1, 934S/C1	PRIMARY PROTECTION
934SC4	BREAKER 934S	CABLE TRENCH	3	UV	130	934S/SB2, 934S/C2	SECONDARY PROTECTION
934SC5	BREAKER 934S	AC YARD PANEL '9YP-1P'	1.5	UV	210	934S/AC	208VAC POWER
BREAKER 934G2							
934G2C1	BREAKER 934G2	CABLE TRENCH	3	UV	200	934G2/934PR	CONTROL
934G2C2	BREAKER 934G2	CABLE TRENCH	3	UV	200	934G2/934SC	CONTROL
YARD LIGHTING							
YLB4C1	AC YARD PANEL '9YP-1P'	A-FRAME COLUMN (NW)	1.5	UV	135	YLB41/AC	------
YLB4C2	A-FRAME COLUMN (NW)	A-FRAME COLUMN (SW)	1	UV	30	YLB42/AC	------
YLB4C3	A-FRAME COLUMN (SW)	A-FRAME COLUMN (SE)	1	UV	65	YLB43/AC	------
YLB4C4	A-FRAME COLUMN (SE)	A-FRAME COLUMN (NE)	1	UV	30	YLB44/AC	------
END							

Building Community

PROJECT DESIGN SEGMENT 20410
ST. JOHNS RIVER POWER PARK (SJRPP) STATION SERVICE MODIFICATION
CONDUIT SCHEDULE

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY CONDUIT MATERIALS, INCLUDING FITTINGS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL CONDUIT LENGTHS. CONDUIT LENGTHS ARE APPROXIMATE.

CONDUIT LEGEND:

UV -	UV RESISTANT PVC CONDUIT, SCH 40; LFMC AS REQ.
EMT -	ELECTRICAL METALLIC TUBING
RMC -	RIGID METALLIC (GALVANIZED STEEL) CONDUIT
IMC -	INTERMEDIATE METALLIC CONDUIT
LFMC -	LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT
WW -	SQUARE WIREWAY
AL -	ALUMINUM CONDUIT

FILE: SJ17 - APPENDIX V - CONDUIT SCHEDULE.DOCX

DATE: 7/11/2017

CONDUIT SCHEDULE
SJRPP STATION SERVICE MODIFICATION

CONDUIT #	FROM	TO	SIZE IN.	TYPE	~LENGTH FT.	CABLES IN CONDUIT #	REMARKS
STATION SERVICE (PRIMARY)							
SSB1C1	230KV PVT "A" PHASE	PVT SECONDARY DISCONNECT 'PVTJB'	2	UV	50	SS1A/AC	230KV PVT "A" PHASE FEED
SSB1C2	230KV PVT "B" PHASE	PVT SECONDARY DISCONNECT 'PVTJB'	2	UV	10	SS1B/AC	230KV PVT "B" PHASE FEED
SSB1C3	230KV PVT "C" PHASE	PVT SECONDARY DISCONNECT 'PVTJB'	2	UV	50	SS1C/AC	230KV PVT "C" PHASE FEED
SSB1MC1	PVT SECONDARY DISCONNECT 'PVTJB'	WALL ENCLOSURE #1 ON CONTROL HOUSE (NORTH WALL) ***FIELD COORDINATE EXACT LOCATION***	4	UV	130	SS1M/AC	NORMAL FEED
SSB1MC2	PVT SECONDARY DISCONNECT 'PVTJB'	STUB UP AND CAP CONDUIT AT CONTROL HOUSE (NORTH WALL) ***FIELD COORDINATE EXACT LOCATION***	4	UV	130	------	SPARE
SSB1MC3	WALL ENCLOSURE #1	CABLE TRAY	4	RGS	20	SS1M/AC	NORMAL FEED
SSB1MC4	CABLE TRAY	ATS #1	4	RGS	15	SS1M/AC	NORMAL FEED
STATION SERVICE (SECONDARY)							
SSB2MC1	AC PULL BOX 'AC-1'	XFMR SECONDARY DISCONNECT 'SS2JB'	4	UV	420	SS2M1/AC	EMERGENCY FEED
SSB2MC2	AC PULL BOX 'AC-1'	XFMR SECONDARY DISCONNECT 'SS2JB'	4	UV	420	------	SPARE
SSB2MC3	AC PULL BOX 'AC-1'	***EXTEND TEN (10') FEET BEYOND FENCE LINE***	4	UV	20	SS2M1/AC	EMERGENCY FEED
SSB2MC4	AC PULL BOX 'AC-1'	***EXTEND TEN (10') FEET BEYOND FENCE LINE***	4	UV	20	------	SPARE
SSB2MC5	XFMR SECONDARY DISCONNECT 'SS2JB'	CABLE TRAY	4	RGS	20	SS2M2/AC	EMERGENCY FEED
SSB2MC6	CABLE TRAY	ATS #2	4	RGS	15	SS2M2/AC	EMERGENCY FEED
END							

SYSTEM PROTECTION & CONTROL PROJECTS 20413
CABLE SCHEDULE
NORTHSIDE SUBSTATION LINE 934 ADDITIONS

CABLE NOTES:

1. TYPE B, BS, F, AND FO CABLE SHALL BE FURNISHED BY THE OWNER, UNLESS OTHERWISE SPECIFIED.
2. THE CONTRACTOR SHALL FURNISH ALL OTHER CABLE, AS SPECIFIED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL CABLE LENGTHS. CABLE LENGTHS LISTED ARE APPROXIMATE.

CABLE LEGEND:

A - THHN INSULATED COPPER CONDUCTOR, RATED 600V
B - CONTROL CABLE
BS - SHIELDED CONTROL CABLE
C - RHW, THHW, OR THWN INSULATED COPPER CONDUCTOR, RATED 600V
F - INSTRUMENT CABLE
FO - FIBER OPTIC CABLE
S - SINGLE CONDUCTOR
M - MULTIPLE CONDUCTOR

FILE: NORTHSIDE SUBSTATION - SPCP 20413 CABLE SCHEDULE 20170628

DATE: 7/3/17
PAGE NO.: **1 OF 2**

CABLE SCHEDULE
NORTHSIDE SUBSTATION LINE 934 ADDITIONS

CABLE #	FROM	TO	VOLT	SIZE	#C	S/M	TYPE	LNGTH ckt ft	CONDUIT #	REMARKS
BKR 934S										
934S/934PR	BKR934S	230KV LINE 934 PNL			4			1300	934SC1, CT, TRAY	934 PRIMARY PROTECTION
934S/934SC	BKR934S	230KV LINE 934 PNL			4			1300	934SC2, CT, TRAY	934 SECONDARY PROTECTION
934S/SB1	BKR934S	230KV LINE 934 PNL			4			1300	934SC3, CT, TRAY	230KV SOUTH BUS PRIMARY PROTECTION
934S/SB2	BKR934S	230KV LINE 934 PNL			4			1300	934SC4, CT, TRAY	230KV SOUTH BUS SECONDARY PROTECTION
934S/C1	BKR934S	230KV LINE 934 PNL			21			1300	934SC3, CT, TRAY	BKR 934S CONTROL
934S/C2	BKR934S	230KV LINE 934 PNL			21			1300	934SC4, CT, TRAY	BKR 934S CONTROL
934S/AC	BKR934S	AC YARD PANEL '9YP-1P'						230	934SC5	AC POWER
BKR 934G2										
934G2/934PR	BKR934G2	230KV LINE 934 PNL			4			1300	934G2C1, CT, TRAY	934 PRIMARY PROTECTOIN
934G2/934SC	BKR934G2	230KV LINE 934 PNL			4			1300	934G2C2, CT, TRAY	934 SECONDARY PROTECTION
YARD LIGHTING										
YLB41/AC	AC YARD PANEL '9YP-1P'	A-FRAME COLUMN (NW)	600	10	3	S	C	175	YLB4C1	------
YLB42/AC	A-FRAME COLUMN (NW)	A-FRAME COLUMN (SW)	600	10	3	S	C	70	YLB4C2	------
YLB43/AC	A-FRAME COLUMN (SW)	A-FRAME COLUMN (SE)	600	10	3	S	C	105	YLB4C3	------
YLB44/AC	A-FRAME COLUMN (SE)	A-FRAME COLUMN (NE)	600	10	3	S	C	70	YLB4C4	------
END										

Building Community

PROJECT DESIGN SEGMENT 20410
ST. JOHNS RIVER POWER PARK (SJRPP) STATION SERVICE MODIFICATION
CABLE SCHEDULE

CABLE NOTES:

1. TYPE B, BS, F, FO AND MEDIUM VOLTAGE CABLE SHALL BE FURNISHED BY THE OWNER, UNLESS OTHERWISE SPECIFIED.
2. THE CONTRACTOR SHALL FURNISH ALL OTHER CABLE, AS SPECIFIED.
3. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL CABLE LENGTHS. CABLE LENGTHS LISTED ARE APPROXIMATE.

CABLE LEGEND:

A	THHN INSULATED COPPER CONDUCTOR, RATED 600V
B	CONTROL CABLE
BS	SHIELDED CONTROL CABLE
C	RHW, THHW, OR THWN INSULATED COPPER CONDUCTOR, RATED 600V
F	INSTRUMENT CABLE
FO	FIBER OPTIC CABLE
S	SINGLE CONDUCTOR
M	MULTIPLE CONDUCTOR

FILE: SJ17 - APPENDIX VI - CABLE SCHEDULE.DOCX

DATE: 7/11/2017

CABLE SCHEDULE
SJRPP STATION SERVICE MODIFICATION

CABLE #	FROM	TO	VOLT	SIZE	#C	S/M	TYPE	LNGTH ckt ft	CONDUIT #	REMARKS
STATION SERVICE (PRIMARY)										
SS1A/AC	230KV PVT "A" PHASE	PVT SECONDARY DISCONNECT 'PVTJB'	600	4/0	1	S	C	50	SSB1C1	230KV PVT "A" PHASE FEED
SS1B/AC	230KV PVT "B" PHASE	PVT SECONDARY DISCONNECT 'PVTJB'	600	4/0	1	S	C	20	SSB1C2	230KV PVT "B" PHASE FEED
SS1C/AC	230KV PVT "C" PHASE	PVT SECONDARY DISCONNECT 'PVTJB'	600	4/0	1	S	C	50	SSB1C3	230KV PVT "C" PHASE FEED
SS1M/AC	PVT SECONDARY DISCONNECT 'PVTJB'	ATS #1	600	4/0	3	S	C	240	SSB1MC1, WE-1, SSB1MC3, TRAY, SSB1MC4	NORMAL FEED
STATION SERVICE (SECONDARY)										
SS2M1/AC	JEA PADMOUNT XFMR ***OUTSIDE FENCE LINE***	XFMR SECONDARY DISCONNECT 'SS2JB'	600	4/0	3	S	C	600	SSB2MC3, AC-1, SSB2MC1	EMERGENCY FEED
SS2M2/AC	XFMR SECONDARY DISCONNECT 'SS2JB'	ATS #2	600	4/0	3	S	C	120	SSB2MC5, TRAY, SSB2MC6	EMERGENCY FEED
END										

APPENDIX VII – CIVIL REFERENCES

1.1. CIVIL REFERENCES

1.1.1. The latest edition and published addenda of the referenced publications herein effective on the date of Contract Award are a part of this Section and, where referred to by title or by basic designation only, are applicable to the extent indicated by the specific reference:

A. American Association of State Highway and Transportation Officials (AASHTO):

1. M 43 - Standard Specification for Sizes of Aggregate for Road and Bridge Construction
2. M 145 - Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
3. M 294 - Standard Specification for Corrugated Polyethylene Pipe 300 to 1500 mm (12 to 60-in) Diameter
4. T 26 - Standard Method of Test for Quality of Water to Be Used in Concrete
5. T 99 - Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
6. T 180 - Moisture-Density Relations of Soils Using a 10-lb Rammer and 18-inch Drop
7. T 191 - Standard Method of Test for Density of Soil In-Place by the Sand Cone Method

B. American Concrete Institute (ACI):

1. 117 - Specification for Tolerances for Concrete Construction and Materials
2. 229R - Report on Controlled Low-Strength Materials
3. 301 - Specifications for Structural Concrete
4. 304R - Guide for Measuring, Mixing, Transporting and Placing Concrete
5. 305R - Hot Weather Concreting
6. 306R - Cold Weather Concreting
7. 309R - Guide for Consolidation of Concrete
8. 318 - Building Code Requirements for Structural Concrete
9. 336.1 - Specification for the Construction of Drilled Piers
10. 347 - Guide to Formwork for Concrete
11. 530/530.1 - Building Code Requirements and Specification for Masonry Structures

C. American Institute of Steel Construction (AISC):

1. 303 - Code of Standard Practice for Steel Buildings and Bridges

D. American National Standards Institute (ANSI):

1. A 185/A185M - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete

E. American Petroleum Institute (API):

1. RP 13B-1 - Recommended Practice for Field Testing Water-based Drilling Fluids

F. Association of Drilled Shaft Contractors (ADSC) - The International Association of Foundation Drilling:

1. “Drilled Shaft Inspector’s Manual”, 2004.

G. ASTM International (ASTM):

1. A 36 - Standard Specification for Carbon Structural Steel
2. A 53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

3. A 123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
4. A 153 - Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
5. A 185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
6. A 325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
7. A 370 - Standard Test Methods and Definitions for Mechanical Testing of Steel Products
8. A 392 - Standard Specification for Zinc Coated Steel Chain-Link Fence Fabric
9. A 497 - Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete.
10. A 563 - Standard Specification for Carbons and Alloy Steel Nuts
11. A 615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement
12. A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
13. A 706 - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
14. A 780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
15. A 924/A 924M - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
16. A 992 - Standard Specification for Structural Steel Shapes
17. B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
18. B 695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
19. C 5 - Standard Specification for Quicklime for Structural Purposes
20. C 29 - Standard Test Method for Bulk Density (Unit Weight) and Voids in Aggregate
21. C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field
22. C 33 - Standard Specification for Concrete Aggregates
23. C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
24. C 40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete
25. C 42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
26. C 76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
27. C 88 - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
28. C 90 - Standard Specification for Loadbearing Concrete Masonry Units
29. C 91 - Standard Specification for Masonry Cement
30. C 94 / C94M - Standard Specification for Ready-Mixed Concrete
31. C 109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)
32. C 117 - Standard Test Method for Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing
33. C 123 - Standard Test Method for Lightweight Particles in Aggregate

34. C 127 - Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
35. C 128 - Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
36. C 131 - Standard Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
37. C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
38. C 138 - Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
39. C 142 - Standard Test Method for Clay Lumps and Friable Particles in Aggregates
40. C 143 - Standard Test Method for Slump of Hydraulic Cement Concrete
41. C 144 – Standard Specification for Aggregate for Masonry Mortar
42. C 150 - Standard Specification for Portland Cement
43. C 172 - Standard Practice for Sampling Freshly Mixed Concrete
44. C 173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
45. C 192 - Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
46. C 207 – Standard Specification for Hydrated Lime for Masonry Purposes
47. C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
48. C 260 - Standard Specification for Air-Entraining Admixtures for Concrete
49. C 270 - Standard Specification for Mortar for Unit Masonry
50. C 289 - Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates (Chemical Method)
51. C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
52. C 403 - Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance
53. C 404 - Standard Specification for Aggregates for Masonry Grout
54. C 443 - Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastometric Seals
55. C 451 - Standard Test Method for Early Stiffening of Hydraulic Cement (Paste Method)
56. C 470 - Standard Specification for Molds for Forming Concrete Test Cylinders Vertically
57. C 476 - Standard Specification for Grout for Masonry
58. C 494/C494M - Standard Specification for Chemical Admixtures for Concrete
59. C 535 - Standard Test Method for Resistance to Degradation of Large Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
60. C 566 - Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
61. C 617 - Standard Practice for Capping Cylindrical Concrete Specimens
62. C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
63. C 890 - Standard Practice for Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures
64. C 913 - Standard Specification for Precast Concrete Water and Wastewater Structures

65. C 920 - Standard Specification for Elastomeric Joint Sealants
66. C 937 - Standard Specification for Grout Fluidifier for Preplaced-Aggregate Concrete
67. C 1017 - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
68. C 1064 - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
69. C 1077 - Standard Practice for Laboratories Testing Concrete, and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
70. C 1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete
71. C 1602 - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
72. D 448 - Standard Classification for Sizes of Aggregate for Road and Bridge Construction
73. D 698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3))
74. D 854 - Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer
75. D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
76. D 1140 - Standard Test Methods for Determining the Amount of Material Finer Than 75 μm (No. 200 Sieve) in Soils by Washing
77. D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method
78. D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3))
79. D 1751 - Standard Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
80. D 1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction
81. D 2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
82. D 2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
83. D 2488 - Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
84. D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
85. D 2940 - Standard Specification Graded Aggregate Material for Bases or Subbases for Highways or Airports
86. D 3282 - Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
87. D 3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
88. D 4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
89. D 4355 - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus
90. D 4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles
91. D 4595 - Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
92. D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles

93. D 4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile
94. D 4832 - Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders
95. D 5199 - Standard Test Method for Measuring the Nominal Thickness of Geosynthetics
96. D 5261 - Standard Test Method for Measuring Mass per Unit Area of Geotextiles
97. D 6241 - Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe
98. D 6913 – Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
99. D 6938 – Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
100. D 7949 - Standard Test Methods for Thermal Integrity Profiling of Concrete Deep Foundations
101. E 4 - Standard Practices for Force Verification of Testing Machines
102. E 329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
103. F 436 - Standard Specification for Hardened Steel Washers
104. F 626 - Standard Specification for Fence Fittings
105. F 1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
106. F 1554 - Standard Specification for Anchor Rods, Steel, 36, 55, and 105-ksi Yield Strength

H. American Society of Civil Engineers (ASCE):
   1. 5-11/6-11- Building Code Requirements and Specifications for Masonry Structures.
   2. 7-10 - Minimum Design Loads for Building and Other Structures

I. American Welding Society (AWS):
   1. D1.1 - Structural Welding Code - Steel

J. Concrete Reinforcing Steel Institute (CRSI):
   1. MSP-2-01 - Manual of Standard Practice

K. National Ready Mixed Concrete Association:
   1. Certification of Ready-Mixed Concrete Production Facilities

L. The Society for Protective Coatings (SSPC):
   1. PA-1 - Shop, Field, and Maintenance Painting of Steel
   2. SP-6 - Commercial Blast Cleaning

M. U.S. Army Corps of Engineers:
   1. CRD-C572 - Specifications for Polyvinyl Chloride Waterstops

N. U.S. Department of Labor, Occupational Safety and Health Administration Standards (OSHA):
   1. 29 CFR, Part 1926, Safety and Health Regulations for Construction, Standard Number: 1926.652, Requirements for Protective Systems, Subpart P – Excavations
   2. 29 CFR, Part 1926, Safety and Health Regulations for Construction, Standard Number: 1926.652, Requirements for Protective Systems, Subpart T – Demolition

O. 2010 Florida Building Code

P. City of Jacksonville, Florida (COJ)

1. Land Development Procedures Manual
2. City Standard Details, Department of Public Works
3. City Standard Specifications, Department of Public Works

Q. Florida Department of Environmental Protection:

1. Florida Stormwater Erosion and Sedimentation Control Inspector's Manual
2. State of Florida, Erosion and Sediment Control, Designer and Reviewer Manual

R. Florida Department of Transportation:

1. FM 5-515 - Florida Method of Test for Limerock Bearing Ratio (LBR)
2. Standard Specifications for Road and Bridge Construction

S. Florida Administrative Code:

1. 62-621 – Generic Permits
2. 62-701 – Solid Waste Management Facilities
3. 62-710 – Used Oil Management
4. 62-711 – Waste Tire Rule
5. 62-730 – Hazardous Waste

T. Federal Specifications and Standards (General Service Administration)

1. SS-S-210A, Sealing Compound, Preformed Plastic, for Expansion Joints and Pipe Joints

U. Geotechnical Report (Appendix VII).

V. Survey and Subsurface Utility Information (Appendix VIII).

1.1.2. Where the codes and standards referenced herein contain recommendations in addition to requirements, consider the recommendations as requirements and follow unless stated otherwise by this Specification.

1.1.3. In the event of any conflict between codes, or this Specification and codes, the more stringent requirement applies.

NORTHSIDE BAY COMPLETION

SPECIFIC INSTRUCTIONS

REVISION: A

Date: July 3, 2017

WorleyParsons
13901 Sutton Park Drive South, Suite 210
Jacksonville, FL 32224
USA
Florida COA #8777
Telephone: +1 904 551 7301
www.worleyparsons.com

SECTION VII - SPECIFIC INSTRUCTIONS

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SECTION VII - SPECIFIC INSTRUCTIONS

1. INTRODUCTION

1.1. SCOPING STATEMENT

The overall project comprises of modifications to the existing Northside 230kV Switchyard to facilitate the required changes to the facility to allow for an additional transmission interconnection. The interconnection will consist of one (1) new 230kV transmission line entering the Northside Switchyard. The modifications at the Northside Switchyard will be performed to accommodate the changes to the transmission system to include a new 230kV power circuit breaker, A-frame deadend structure, relaying equipment and buswork. Below grade and above grade work will be required for the completion of the facility modifications.

In addition, new primary station service units and a secondary station service connection will be installed at the St. Johns River Power Park (SJRPP) 230kV Switchyard that will be comprised as part of this Work.

1.2. LOCATION OF PROJECT

The Northside Switchyard is located on real property owned by JEA at:

4377 Heckscher Drive
Jacksonville, Florida 32226

Geodetic Coordinates:
N: 30° 25' 03"
W: 81° 33' 03"

The SJRPP Switchyard is located on real property owned by JEA at:

11201 New Berlin Road
Jacksonville, Florida 32226

Geodetic Coordinates:
N: 30° 26' 03"
W: 81° 33' 13"

1.3. OWNER STAKEHOLDERS

1.3.1. Project Engineer

Jason Rinehart
(904) 665-7380
rineja@jea.com
21 W Church Street, Tower 9
Jacksonville, FL 32202

1.4. INFORMATION TO BE SUPPLIED WITH BID

1.4.1. Project Execution Plan (PEP) and Description of Activities

In addition to the execution plan and description of activities, the PEP shall include site safety plans, etc.

1.4.2. Construction Schedule: The Schedule shall be a detailed schedule with a three-level work-breakdown-structure that includes the functions of all involved parties, including but not limited to the Contractor, the Vendors, and the Owner's Staff, for the life of the project.

1.4.3. Construction Resource Loading

1.4.4. Staffing Qualifications (Resumes) of key personnel

1.4.5. Price Proposal with Completed Schedule of Values

1.5. INFORMATION PROVIDED BY THE OWNER

1.5.1. Construction Drawings

A. Neither the drawings nor the specifications provided by the Owner are intended to capture every detail, but are intended to describe the type, kind, and quantity of work to be performed, as well as the type, qualities, and quantities of materials and equipment that must be furnished as a part of this Contract.

B. The Owner will furnish the Contractor two (2) complete sets of drawings and documents for completion of the work, as well as compiled PDF digital forms. These sets will be provided at the Pre-Construction Meeting. One (1) set is intended for the Contractor's home office and one (1) set is intended for the Contractor's field office.

C. Furnishing any additional copies that may be required by the Contractor, subcontractor, construction personnel, including copies necessary for securing permits, is the responsibility of the Contractor. The Contractor shall be responsible for the accurate reproduction of the Drawings and Specifications for use by the Contractor, subcontractor, and construction personnel in the completion of this Work, including the securing of necessary permits to perform the work. The Contractor shall be responsible for all costs incurred in the reproduction of the Construction Drawings and Specifications.

1.5.2. Reference Specifications

A. Technical Specifications – Civil, Structural, Architectural (Section VIII)

B. Technical Specifications – Electrical (Section IX)

C. Technical Specifications Appendices (See Table of Contents following the Technical Specifications)

1.5.3. Soil Investigation

The Owner has obtained two (2) soil borings; the boring logs are included within the Appendices of these specifications. Investigations conducted by the Owner of subsurface conditions are for information only. The Owner does not assume any responsibility with respect to the sufficiency or accuracy of the borings, or of the interpretations made thereof. No warranty or guarantee exists, either expressed or implied, that the conditions indicated by such investigations are representative of those existing throughout the site, or any part thereof, or that unforeseen developments may not occur. After the contract has been awarded, the Contractor shall make an inspection of the site to determine the conditions under which the work is to be performed and may obtain additional core borings, if deemed necessary.

2. ADMINISTRATIVE SCOPE

2.1. PROJECT TRACKING AND REPORTING

2.1.1. Pre-Construction Meeting: The Contractor shall arrange through the Project Engineer, upon receipt of final Contract, an on-site Kickoff Meeting. The Contractor shall draft and submit an agenda for this meeting, a minimum of five (5) business days prior, to include the following items:

A. A listing of Key Staff Members

B. The Construction Schedule

C. Key Project Discussion Points to review in open discussion during the meeting (such as, but not limited to Project Requirements, Specifications, Drawings, and Documents, Milestones, etc.) to reinforce the project requirements, expectations, and schedule.

2.1.2. Construction Schedule:

A. A general Milestone Schedule is provided in this Specification outlining the major project milestones. The Contractor shall develop a Construction Schedule using MS Project and submit it to the Owner at the Project Kickoff.

B. The Schedule shall be a detailed schedule with a three-level work-breakdown-structure that includes the functions of all involved parties, including but not limited to the Contractor, the Vendors, and the Owner's Staff, for the life of the project.

C. The details in the Schedule shall be capable of being exported, so the information can easily be integrated with the Overall Project Schedule by the Project Engineer. The Schedule shall include the dependencies of all the functions of others into one chronological report, in Gantt chart format.

D. The Schedule shall include all of the following fields, as a minimum; the Item ID, Item Name, Item Start Date, Item End Date, Item Duration (business days), sequence of events, predecessors, and resource loading.

E. The Contractor shall update the Schedule as required (but at minimum, bi-weekly) and report to the Project Engineer of progress, and make recommendations regarding any changes that may become necessary to keep the Project on-track.

2.1.3. Schedule of Values: The Contractor shall populate the Schedule of Values that allocates Bid activities amongst the various tasks that the Contractor shall perform as a part of this Project. The Schedule of Values and the completion of its finite project activities will form the basis of reimbursement for the Contractor.

2.1.4. Construction Progress Meetings:

Weekly Construction Progress Meetings shall be held on-site with minimum attendance to include the Contract Administrator, and Contractor Superintendent. The Project Engineer and other Owner personnel will attend as necessary. The Contractor shall be prepared to report status of the Project, and provide necessary documentation to support the status including the Construction Schedule, As-Built mark-ups and listings, etc.

2.2. SUBMITTALS

2.2.1. The Contractor shall provide submittals to the Owner for acceptance of any Contractor furnished materials, equipment, or installation method. These may be submitted in the form of drawings, diagrams, illustrations, schedules, or any other form deemed best to convey or illustrate the material, equipment, or installation method to the Owner. The data submitted shall be with respect to dimensions, design criteria, materials of construction, etc. for the proper review and evaluation of the submittal without unnecessary delays.

2.2.2. The Contractor shall submit a compiled electronic copy in PDF format of all submittals. The Owner may request up to five (5) hard copies to be mailed to a specified location. Each submittal shall be accompanied by a transmittal letter. Submittal response may be an electronic return of the submittal in PDF format or hardcopy.

2.2.3. Work shall not commence until approved by Owner. Any work completed or material installed prior to approval, is subject to removal at the Contractor's expense.

2.2.4. Materials purchased by the Contractor without an accepted submittal shall be procured at the Contractor's risk. Regardless, acceptance of a submittal shall in no way relieve the Contractor of supplying and installing products to produce a fully functional system.

2.3. WORKING DRAWINGS

2.3.1. The Contractor will receive PDF drawings for use over the course of the Project. The Contractor shall utilize the digital format for all necessary reproduction, and is responsible for accurately reproducing, to full scale, as many copies as needed for use by craft personnel performing work at the site.

2.3.2. A complete, separate, clean, full size drawing set shall always be available for review by others (Owner, Contract Administrator, Contractor personnel, etc.) on-site. This set will be distinct from the As-Built drawing set described herein.

2.4. AS-BUILT DRAWINGS

2.4.1. The Contractor shall bear all costs associated with the accurate record keeping of As-Built drawings reflecting all the field changes.

2.4.2. When cable or conduit routing is not specified on the drawings, the Contractor shall route wiring the best way and provide wiring routing As-Built details in conduit and cable lists on the layout drawings. Additions, the naming modifications and removals or abandonments of the wiring system shall be noted on the Drawings.

2.4.3. The Contractor shall also track, using a list or spreadsheet, all As-Built markups, by date, drawing number, name of responsible person, and a clear description of the changes. The Contractor shall transmit the spreadsheet to

the Owner every other week for review. As-built drawing updates and their tracking form shall not fall into arrears with respect to field conditions by more than one (1) week.

2.4.4. During the course of construction, the Contractor shall maintain a complete As-Built drawing set that meticulously and thoroughly details any and all changes to the original design. It is imperative that this set remain complete in an orderly fashion to facilitate proper tracking of field modifications. The As-Built drawings shall be marked as follows:

- Red – Add
- Green – Delete
- Blue – Notes to the Engineer

3. CONSTRUCTION SCOPE

3.1. GENERAL

3.1.1. The Contractor shall have the expertise to perform the work as outlined in these specifications, drawings and documents (Documents). The work will be performed at an energized switchyard where safety, security, reliability, and professional workmanship must be considered of the highest regard at all times. Although portions of the station will be de-energized during construction, equipment, buswork and overhead lines elsewhere inside the station fence will remain energized during the construction of the various stages for the project. The Contractor shall make note of these energized facilities when performing construction activities.

3.1.2. At a minimum, the Contractor shall complete all work in accordance with these Documents. Any deviations must be submitted to the Owner in writing prior to commencement.

3.1.3. The Contractor shall coordinate all construction operations and unless specifically noted otherwise, shall furnish all labor, materials, and equipment that may reasonably be inferred from these Documents, or from prevailing custom or trade usage as being required to produce the intended result, whether or not specifically stated within them. Literal adherence to the Documents shall not relieve the Contractor of the ultimate responsibility for accomplishing the intent of this Contract, whose scope is adequately defined, and the Documents sufficiently detailed.

3.1.4. Engineering estimates for quantities of various materials have been provided within the drawings and specifications for assistance with developing Bids. The Contractor should not rely on these estimates as final needed quantities, or as a basis for change in terms and conditions of any Contract. The Contractor is responsible for furnishing all materials needed to complete the work as described within the Documents.

3.1.5. The Contractor is to verify material quantities on the Bill of Material. Miscellaneous conduits, brackets, unistrut, and other similar hardware may not be itemized on the BOM. Supply and installation detail will be the responsibility of the Contractor.

3.1.6. All cranes, scaffolding and miscellaneous lift equipment and services required for relocating, unloading, erecting, assembling, or testing electrical equipment, structures and equipment shall be supplied by the Contractor.

3.1.7. The Contractor shall provide competent construction management to direct, oversee, monitor, and coordinate and track construction activities among all sub-contractors on-site for all trades.

3.2. SCOPE NOT INCLUDED

3.2.1. Functional testing and checkout of high voltage equipment or protective relaying systems.

3.2.2. Installation and termination of control cabling.

3.3. DETAILED SCOPE OF WORK

The below scope of work is to provide the Contractor with a general scope of work and highlight specific items in an attempt to identify the overall project. This section is not intended to capture every detailed task and ultimately, it is the responsibility of the Contractor to schedule construction events how best to complete the project.

3.3.1. Pre-Construction Preparation

A. Prepare administrative documents and construction submittals.

B. Familiarization: Prior to all work of this project, the Contractor shall become thoroughly familiar with the site, the site conditions and all portions of the project work scope.

C. Procurement of construction laydown and construction materials.

D. Installation of Erosion Control measures.

E. The Contractor shall retain a 3rd party testing company to test concrete, soils, and compaction as required within Section VIII.

3.3.2. Construction Preparation

A. Perform site surveying and benchmarking, set monuments as necessary and establish construction baselines. All surveying shall be performed by a registered Professional Land Surveyor registered in the State of Florida.

B. Verify existing utilities above and below grade.

C. Coordinate construction laydown areas with Contract Administrator.

D. Site preparation and establish soil erosion control measures.

3.3.3. Site Demolition

The Contractor shall be responsible for removing existing facilities as illustrated in the project drawings. Any decommissioned equipment shall be returned to the Owner by coordinating with the Contract Administrator. Any decommissioned steel, concrete, etc. shall become property of the Contractor. Demolition of existing site facilities includes, but is not limited to:

A. Concrete foundations

B. Steel structures and buswork

3.3.4. Civil Site Work and Below Grade Electrical

A. Responsibility for all the Soil Erosion and Sediment Control Plan and materials associated with the Work.

B. Receive and offload all foundation anchor bolts from Owner's supplier.

C. Install foundations for all structures and equipment, including power and control conduit stub-outs as required.

D. Install cable raceway systems including below grade conduits including low voltage, security, fiber optic, and hand-holes and man-holes (as required).

E. Install conduits from the cable trench to equipment and structure foundations.

F. Install below grade ground grid, structure and equipment ground taps.

3.3.5. Structure Erection and Above Grade Electrical Equipment Installation

A. Receive, offload and securely store onsite all substation structures and materials.

B. Erect 230kV A-frame deadend structure, insulators and buswork; **NOTE:** No structure may be installed for more than twenty-four (24) hours unless grounded to the permanent ground grid.

C. Erect PVT structures; **NOTE:** No structure may be installed for more than twenty-four (24) hours unless grounded to the permanent ground grid.

D. Install ground cables to all 230kV structures.

E. Receive offload, and install 230kV SF_6 power circuit breaker.

F. Install lightning arrestors, equipment jumpers, etc.

G. Install PVTs, equipment jumpers, etc.

H. Extend conduits, pull cable and terminate at all yard equipment, Control House cabinets, and all other low voltage power and control for auxiliary items typical for this type of substation and as illustrated in the drawings.

3.3.6. Commissioning

A. Completion of equipment and relay commissioning testing by JEA Forces.

B. Re-energization of the 230kV substation.

C. Upon JEA commencing the serving of load but not more than 90 days beyond punch list completion, the Contractor shall inspect all 230kV electrical connections for hot spots.

D. Correction of all hot spot locations by Contractor.

3.3.7. Finishing

A. Complete backfilling, compaction and stabilization of the substation site and establish final grades.

B. Demolish temporary construction fencing (if applicable).

C. Install final surfacing including asphalt surfaces, yard aggregate, and vegetative surfaces. The Contractor shall repair any asphalt surfaces within the 230kV substation perimeter road.

D. Restore all areas used or impacted during Construction to conditions that existed prior to construction. The Contractor shall restore area to proper grade, properly amend soil and install surfacing that matches surrounding and/or pre-existing conditions.

E. Site clean-up and disposal of debris.

F. General inspection of the project by Owner.

G. Completion of all punch list items and final adjustments as necessary after Owner inspection.

3.3.8. Project Closeout

A. Prepare and submit any As-Built field marked prints, final project documents and instruction books.

B. Demobilize.

4. MILESTONE SCHEDULE

4.1. CONSTRUCTION MILESTONES

4.1.1. Reference detailed Project Schedule.

4.1.2. The Contractor should take note that the delivery dates of material items and equipment are synchronized with the construction sequence. The Contractor is responsible under this Contract to conform to and facilitate these delivery schedules.

4.2. SCHEDULE CONSTRAINTS

4.2.1. The JEA Electric System Operator has commitments which require that this Work be completed on time. Therefore, adherence to the Project Schedule is of high importance.

JEA requires, as a part of this Contract, that the Contractor assure and guarantee that the installation of the substation be substantially completed and operable by the Substantial Completion Date to allow JEA sufficient time for complete checkout of the substation prior to energization. The Contractor shall assure and further guarantee that the entire project, including substation rock, punch list, landscaping, etc. shall be complete no later than Project Completion Date. Reference Liquidated Damages, if these dates are not met. JEA intends to test, check out the substation, and place all equipment in-service and serve load by the Substation Energization Date.

5. SITE SPECIFIC INSTRUCTIONS

5.1. OPERATIONAL LIMITS

5.1.1. 24-hour access is required by the Owner to the existing facilities. Care must be taken not to impede or impact access with construction materials, vehicles, equipment, etc.

5.1.2. Contractor's activities at the Site shall be limited to the areas designated on the Contract Drawings.

5.1.3. Parking facilities will be provided for cars of Contractor's employees for use at their risk. Parking will be allowed only in areas designated by Owner. Owner reserves the right to restrict the number of Contractor vehicles allowed on Site.

5.1.4. Unprotected storage areas will be provided by Owner. The areas to be used by Contractor will be designated by Owner. Storage space is limited, and Contractor shall limit Site storage of materials and equipment to the space assigned. The locations, construction and appearance of structures erected by Contractor for the storage of materials and equipment shall be subject to prior approval of Owner.

5.1.5. Owner will assign location for Contractor's fabrication area (if required). No office space will be provided by Owner for Contractor's employees.

5.1.6. Contractor personnel shall enter and leave the Site through gates designated by Owner. All personnel and their vehicles entering or leaving the Site are subject to search. Firearms or weapons of any type are strictly prohibited.

5.1.7. Visitors to Contractor, including vendors and delivery personnel, will be required to wear visitor hard hats or hard hats clearly marked with the Contractor's name and safety glasses with hard side shields and appropriate work shoes.

5.2. SITE FAMILIARIZATION

5.2.1. The Contractor shall be responsible for locating existing facilities of every type either below, on, or above the ground which may be in the path of proposed construction. The Contractor shall cooperate with the Owner's of any facilities on, over, or under the proposed path of construction by scheduling and performing the Work in and around any facilities so as to facilitate their preservation, relocation, and/or reconstruction. The Contractor shall be responsible for the full restoration or replacement of any utilities damaged by Construction.

5.2.2. The Owner has attempted to indicate on the Drawings all Owner facilities. It will be the responsibility of the Contractor to verify the data furnished, to investigate and locate additional obstructions. Changes in location, grade, further excavation, or back-filling caused by any obstructions shall be at the Contractor's expense. The obstructions shall not serve as a basis for requests for additional compensation.

5.3. SITE ACCESS AND SECURITY

5.3.1. It will be the responsibility of the Contractor to maintain access to the construction site at all times. In addition, security for the Owner's equipment and materials must be provided at all times during Construction by the Contractor regardless of whether the equipment and materials are stored on-site or offsite during Construction. Questions about Site Access and Security should be referred to the Contract Administrator.

A. Material Security: It is recommended that expensive and/or long lead time materials be securely stored in locked Conex boxes.

B. Temporary Construction Fence: The Contractor may choose to establish a temporary construction fence that shall meet the following Specifications: 1) the fence shall establish a closed perimeter over the majority of the site and shall cover all areas where materials of any kind are stored, and 2) the fence shall be substantially similar to a permanent chain link fence, but excepting top rail, slats, decorative appurtenances, and signage. The temporary fence will allow for use of lockable (double) 8' leaf gates. As an additional level of security, it is recommended that expensive and/or long lead time materials be securely stored in locked Conex boxes.

C. Temporary Security Guard: The Contractor may choose to establish temporary, 24 hour, 365 day security via subcontracting with a Florida Licensed Security service that will supply on-site security personnel at all

times that the Contractor does not have activities on-site. Said personnel shall maintain plainly visible picture ID and copies of the ID shall be provided to the Contract Administrator prior to assignment. Also, persons who perform this security function shall be subject to attendance of JEA's Substation Safety training class prior to work and attendance at such class shall be at no additional cost to JEA.

5.4. SAFEGUARDS IN CONSTRUCTION

5.4.1. Known underground facilities exist within the work area. All underground conductors and ducts shall be considered "Live" (energized, pressurized, or otherwise) until confirmed otherwise.

5.4.2. The Contractor shall exercise caution when excavating, and contact the Owner immediately upon discovering unknown underground facilities before proceeding with further excavation. The Contractor shall temporarily support and protect existing utilities as required.

5.4.3. Care shall be used while operating equipment within areas of known underground facilities. Restrictions may be placed regarding the use of certain equipment. All equipment must be grounded by approved methods.

5.4.4. Contractor shall designate a Site Safety Representative to represent Contractor in matters of safety and health. The Representative shall attend any safety meetings conducted by the Owner.

5.4.5. Contractor shall hold one safety meeting with its craft personnel at least every ten working days. Contractor shall keep records of these safety meetings and provide two copies to the Owner.

5.4.6. Contractor shall furnish to the Owner copies of all safety and health reports sent to government authorities. In addition, Contractor shall furnish the following reports **(in duplicate)** to the Owner:

A. Monthly man hour/injury statistics as required by the Owner.

B. Notification, as soon as possible, to the Owner of all occupational injuries/illnesses which require medical attention other than first aid, followed by a written investigative report (Incident Report), completed before the end of the shift which the incident occurred.

C. Notification, as soon as possible, to the Owner of accidents/fires involving property damage followed by a written investigative report (Incident Report), completed before the end of the shift which the incident occurred.

5.4.7. Contractor shall bring Contractor-to-Contractor safety interface problems to the attention of the Owner immediately for resolution.

5.4.8. Proper PPE including eye protection, hard hats, and safety shoes shall be worn at all times in the work area.

5.4.9. If applicable to this Contract, Contractor shall provide qualified confined space attendants who have been adequately trained to meet the minimum the Owner (see Attachment) and OSHA (OSHA Standard 29 CFR 1910.146) requirements for confined space. Confined space attendants shall be trained prior to the commencement of the Work by the Contractor. **A copy of the Contractor's Confined Space Procedures shall be furnished with the Bid**. The Contractor shall provide the Owner Site Contact certifications of a Fit Test for each employee of the Contractor, or for each Subcontractor of the Contractor who will enter a confined workspace.

5.5. CONSTRUCTION LAYDOWN

5.5.1. The Contractor shall propose and JEA shall approve any area located within the property that shall function as a material laydown area. The laydown area shall be maintained and returned to the original condition by the Contractor immediately after use. If necessary, the Contractor shall install and maintain temporary fences and gates to secure the designated area. **NOTE:** A suitably constructed and maintained temporary construction fence, when such fence encompasses a closed perimeter, shall be sufficient for the purposes of this Paragraph.

A. The Contractor bears full responsibility for any issues (such as material interference with the offloading of the Major Equipment) that may arise due to the Contractor's choice to store material at the site, regardless of any allowance given by the Owner.

B. Any Owner property stored at an offsite location must first be approved by the Owner. If Owner property is stored at an offsite laydown location, the property will be in the care, custody, and control of the Contractor.

5.5.2. The Contractor shall permit, clear, supply, and install any cribbing, temporary culverts, and any other materials and devices as necessary, to obtain access to the laydown area. The Contractor shall remove the temporary materials and devices and restore the area to original condition after Construction is complete.

5.6. TEMPORARY POWER

JEA will allow the Contractor to use the 120VAC one-phase, existing electrical outlets and facilities at the site for construction. The Contractor shall bear all costs associated with all other construction power requirements and supply the necessary material and temporary infrastructure for this installation.

5.7. CONTRACTOR'S SANITARY FACILITIES

The Contractor shall provide and maintain portalets for personnel use during Construction. The Contractor employees shall not use any plant restroom facilities.

5.8. CONSTRUCTION COORDINATION

5.8.1. The Contractor shall have its craftsmen at the Site cooperate with craftsmen under the control of other contractors. When the Contractor is required to place, install or connect up material or equipment furnished by others, the Contractor shall notify the Owner in advance in writing when such equipment or material will be needed, and the Contractor shall cooperate with the Owner in scheduling such Work.

5.8.2. The Contractor shall obtain prior written authorization from the Owner for any demolishing, modifying, or repairing any work of other contractors.

5.8.3. Any work to be performed outside of the property limits and not within the City of Jacksonville right-of-way shall be coordinated with and approved by the adjoining property owners prior to construction commencing. Pre-construction conditions shall be restored upon completion of project work in these areas.

5.9. SMOKING

Smoking on Site will only be allowed in designated smoking areas. The Contractor shall meet with the Site contract coordinator to determine the location of the designated smoking area and the Contractor shall supply a canister for butts, signs designating the area and a fire extinguisher. Contractor will also be responsible for the housekeeping in the designated smoking area.

NORTHSIDE 934 LINE RELOCATION

TECHNICAL SPECIFICATION – SECTION VIII
CIVIL AND STRUCTURAL

REVISION: A

Date: July 2, 2017

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SECTION VIII – TECHNICAL SPECIFICATION – CIVIL, STRUCTURAL, ARCHITECTURAL

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SECTION VIII – TECHNICAL SPECIFICATION – CIVIL, STRUCTURAL, ARCHITECTURAL

1. GENERAL

1.1. SECTION INCLUDES

This is a general specification that covers the civil, structural, and architectural work requirements for substation construction. Any equipment, material or methods listed which does not apply to this particular project shall be disregarded. The Drawings shall be used to determine the type of work and associated specifications intended for use on this project.

1.2. RELATED SECTIONS

1.2.1. Specific Instructions (Section VII)

1.2.2. Technical Specifications (Section IX) – Electrical

1.3. REFERENCES

1.3.1. The latest edition and published addenda of the referenced publications within the attached Appendix effective on the date of Contract Award are a part of this Section and, where referred to by title or by basic designation only, are applicable to the extent indicated by the specific reference.

1.3.2. Where the codes and standards referenced herein contain recommendations in addition to requirements, consider the recommendations as requirements and follow unless stated otherwise by this Specification.

1.3.3. In the event of any conflict between codes, or this Specification and codes, the more stringent requirement applies.

2. SITE PREPARATION

2.1. INSPECTION AND PREPARATION

2.1.1. Locate and identify existing structures, fences, paving, vegetation, and other features that remain.

2.1.2. Notify utility companies to remove and relocate utilities as required. Locate, identify, stake and flag utilities that remain.

2.1.3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

2.1.4. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

2.1.5. Horizontal and vertical control monuments are shown on the existing site drawings. Contractor shall verify the accuracy of the existing monuments and locate the Work from these monuments. If existing site control monuments are not adequate to perform the Work, Contractor shall be responsible for establishing new ones as required to complete the Work. Assume responsibility for dimensions and elevations taken from the control monuments. Protect established reference control monuments, baselines and benchmarks. Replace any monument that is disturbed or removed.

2.2. SOIL EROSION AND SEDIMENT CONTROL

2.2.1. For all land-disturbing construction activities, Contractor shall furnish, install, inspect, and maintain erosion and sediment control measures conforming to current Land Development Procedures of the City of Jacksonville, Florida, the State of Florida "Erosion and Sediment Control Designer and Reviewer Manual," and the Florida DEP "Florida Stormwater Erosion and Sedimentation Control Inspector's Manual".

2.2.2. Furnish, install, provide, inspect, and maintain the following erosion and sediment control measures during construction as shown on the Drawings until the Contractor is relieved by the Owner or until permanent measures are completed and functioning in a satisfactory manner:

A. Silt fence and/or filter socks

B. Stabilized construction exit

C. Temporary and permanent seeding and mulch (see Landscaping section)

D. Sediment containment filter bag

2.2.3. Submittals:

A. Filter sock manufacturer and data sheet.

B. Aggregate data report including particle size analysis, aggregate color, type, and size.

C. Manufacturer and product data for geotextiles, including silt fence and sediment filter bag.

2.2.4. Construct or provide ditches, berms, basins, site grading, sumps, and pumping facilities to direct, collect, and remove water from working areas. Convey water to areas away from work in a manner to prevent erosion, damage to adjacent structures or utilities, and in accordance with the Soil Erosion and Sediment Control Plan.

2.2.5. Conduct visual inspections weekly and within 24 hours after each precipitation event during construction that yields 0.5" or more to ascertain that the erosion and sediment control measures are operational and effective in preventing sedimentation to drainage ways, properties and rights of ways beyond the site. Repair and/or replace facilities as required, replace any silt fence and/or filter socks that have been undermined or topped immediately. Remove sediment accumulations from all facilities as required, and dispose of the material removed at an approved disposal area.

2.2.6. Once the project area has been permanently stabilized, all temporary erosion and sediment control measures shall be removed from the site by the Contractor.

3. EARTHWORK

3.1. SUBMITTALS

3.1.1. Sample and sieve analysis for each Fill material

3.1.2. Proposed mix design, slump, and compressive strengths (3-day and 28-day) for Flowable Fill

3.1.3. Geotextile Data Sheets

3.1.4. Soil Test Reports

3.1.5. Soil Compaction Reports

3.1.6. Dewatering Plan

3.1.7. Sheeting and shoring plan if excavation bracing is required

3.2. GEOTEXTILES & GEOGRIDS

3.2.1. Silt Fence geotextile shall be Propex Geotex 2130 or engineer approved equal.

3.2.2. Geotextiles below foundations for stabilization of wet subgrades shall be Propex Geotex 4x4 or approved equal.

3.2.3. For geotextiles beneath aggregate surfaced and asphalt paved areas, refer to the Site Surfacing section.

3.2.4. For geotextiles and geogrids associated with the Gravel Access Drive, refer to the Cellular Confinement for Gravel Access Drive section.

3.2.5. Geotextiles below concrete pavement and sidewalks for subgrade stabilization shall be Propex Geotex 2x2HF or approved equal.

3.3. FILL MATERIAL

3.3.1. Site and Structural Fill:

A. All soil for fill (if required) shall be of a quality acceptable to the Engineer and shall be free from roots, rubbish or other extraneous material. The fill material shall be sand similar to materials classified in the A-3 group as

shown in AASHTO M145. The fill material below rocked areas (aggregate fill) shall be sand with less than 5% fines similar to materials classified in the A-3 group as shown in AASHTO M145.

B. The fill material in structural areas (Structural Fill) shall be sand with less than 5% fines similar to materials classified in the A-3 group as shown in AASHTO M145. This material shall also contain less than 4% organic material.

C. No fill material shall be placed until receipt of a Letter of Certification from an independent testing company stating that the fill materials meet the requirements presented herein

D. Borrow material, where necessary, shall be provided from sources off the site in areas provided by the Contractor. The borrow pit shall be available for inspection by the Engineer.

3.3.2. Aggregate Surfacing:

A. Refer to the Site Surfacing section for aggregate fill information.

3.3.3. Flowable Fill:

A. Flowable Fill shall consist of an approved mix that complies with the material requirements of ACI 229. Provide a mix with a slump between 8 and 12 inches, an air content of 15% (+/- 5%) and that is pumpable under the required pressure. Provide a mix with a 3-day compressive strength of at least 25 psi and a 28-day compressive strength between 50 and 100 psi unless otherwise shown on the Drawings. Maximum particle size is 0.5 inch.

3.3.4. Trench Backfill:

A. Use Site Fill for trench bedding and backfill Storage of excavated material shall be the responsibility of the Contractor. Material deemed unsatisfactory for use in backfilling shall be disposed of by the Contractor.

3.4. DISPOSAL OF MATERIALS

3.4.1. Disposal of materials resulting from clearing and grubbing shall consist of:

A. All trees, stumps, roots, root mat, branches, brush, shrubs, logs, vines, wood structures and other debris or obstructions that are the products of the clearing and grubbing work shall be completely removed from Owner's property.

B. No burning shall be permitted on the site.

3.4.2. Excavation: Any surplus excavated materials shall become the property of the Contractor and are to be disposed of by the Contractor to the satisfaction of the Owner and in compliance with the requirements for solid waste disposal for Duval County.

A. All rubbish such as tires, roofing materials, concrete, etc., resulting from clearing shall be considered to be property of the Contractor and shall be removed from the job site for proper disposal. All fees for disposal of rubbish and/or other items related to clearing shall be paid by the Contractor.

B. The Contractor shall dispose of the following solid wastes if found on the property: anti-freeze containers, aerosol lubricant and solvent cans, rusted 55 gallon drums, automobile gasoline tanks and batteries, domestic trash, oil filters and containers, appliances, demolition debris, tires, concrete, roofing materials, boards, metal, soil piles, etc.

C. All solid wastes shall be disposed in accordance with FAC 62-701 (Solid Waste/Construction and Demolition Debris), 62-710 (Used Oil and Used Oil Filters), 62-711 (Tires) and 62-730 (Hazardous Waste). Several of these materials (whole tires, appliances, batteries, oil filters, non-empty containers) are prohibited from disposal in permitted, non-hazardous solid waste landfills.

D. Any liquids discovered on-site must be properly screened (sampled and analyzed) before developing a disposal plan. Containers may be required to be crushed or cut open to demonstrate that they are empty.

E. If asbestos is determined to be present, proper precautions should be followed when removing and transporting the material (wet material, use Type C respirators, and transport in covered vehicle).

F. The Owner has approved the following facilities for disposal of non-hazardous solid waste:

- Trail Ridge (Waste Management), Baldwin, FL
- Pecan Row (GeoWaste), Valdosta, GA
- Okeechobee Farms (Chambers), Okeechobee, FL
- Springhill Regional (Waste Management) Graceville, FL
- Use of any other landfills is subject to approval by the Owner.

3.5. SITE EXCAVATION

3.5.1. Perform excavation of every type of material encountered within the limits of the Work to the lines, grades and elevations indicated on the Drawings, and/or as required for foundation or other subsurface construction.

3.5.2. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.1 foot, unless over-excavation is required. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.

3.5.3. Compact excavated area to 95% of maximum density per ASTM D 698 before filling operations are commenced.

3.5.4. Soil stockpiles should be located, constructed, and maintained to minimize unwanted changes in the natural moisture content of the excavated soils, i.e., protect soils near optimum moisture from becoming too wet to be readily reused for backfill, or prevent soils drier than optimum from further drying. Stockpiles can be protected from saturation by sloping and compacting the surface and side slopes to promote rainfall runoff. If additional protection is required, cover stockpile with plastic membranes. Failure to protect stockpiled soil shall not be accepted as a reason to replace the material with imported fill materials at the Owner's cost.

3.5.5. Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered, including rock, soil materials and obstructions. If excavated materials intended for fill and backfill include unsatisfactory materials and rock, replace with satisfactory soil materials as described herein.

3.5.6. Conduct excavation operations so that material outside the excavation limits is not disturbed or loosened. Restore material disturbed or loosened to its original condition.

3.5.7. Excavation Precautions

A. Excavation Safety: Contractor shall comply with all requirements of all applicable OSHA excavation safety standards and regulations. Contractor shall comply with all applicable trench safety standards. Contractor shall adhere to special shoring requirements, if any, of the state or other political subdivisions, which may be applicable to this project scope. For any project that contains a trench excavation deeper than four (4) feet, the Contractor shall submit with his bid the cost of compliance with the applicable trench safety standards.

B. Sheeting and Shoring: The stability of previously constructed structures and facilities shall not be impaired or endangered by excavation work. Previously constructed structures and facilities include both structures and facilities existing when the work under these specifications begins and structures and facilities already provided under these specifications.

Adequate sheeting and shoring in accordance with OSHA regulations 29 CFR Part 1926 shall be provided to protect and maintain the stability of previously constructed structures and facilities and the sides of excavations and trenches until they are backfilled. Sheeting, bracing, and shoring shall be designed and built to withstand all loads that might be caused by earth movement or pressure and shall maintain the shape of the excavation under all circumstances. Certified/stamped Drawings prepared by a registered professional engineer of all shoring details as required by OSHA shall be furnished to the Owner before any excavation begins. When "sloping" of the sides of the excavation or trench is used in lieu of sheeting or shoring the name of the "Competent Person" in charge for the Contractor shall be submitted in writing to the Owner before any excavation begins.

C. Depressions: Where depressions result from, or have resulted from, the removal of surface or subsurface obstructions, remove all debris and soft material as directed by the Owner.

D. Over-excavation: Backfill and compact all over-excavated areas as specified for fill below, and at no additional cost to the Owner.

E. Protection of In-Place Structures: Excavation likely to misalign, damage or impair the strength of structures already in place shall be made only after adequate protection has been provided. The Contractor shall repair any damage that occurs as a result of insufficient protection at no cost to the Owner. The Drawings identify approximate locations of known utilities in the work area. It is the responsibility of the Contractor to coordinate with the utility owners to adjust any utilities conflicting with the work under this contract at no additional cost to the Owner. It is the Contractor's responsibility to locate all underground utilities prior to digging.

F. Underground Utilities: The Contractor shall determine the location of underground piping, conduit and cable before proceeding with the Work. Should any utilities be encountered that were not expected, Work in the area shall be halted and the Engineer and Owner notified immediately.

G. Classification: All material shall be unclassified and considered as excavation regardless of the material encountered and no additional compensation shall be allowed because of difficulties met in removing such materials.

H. Muck and/or Organic Removal: Where muck or other soft material occurs, the Contractor shall remove such material by excavation to suitable foundation soil or to a depth designated by the Engineer and backfill in accordance with this Section.

I. Contaminated Soils: No hazardous materials or contaminated soil are expected to be encountered during excavation. However, in the event contaminants are found, the Contractor shall dispose of them in accordance with Chapters 62-770, 780, and 777 of the Florida Administrative Code (F.A.C.), and any other applicable federal, state, or local rules or regulations. The Contractor shall notify the Engineer and the Owner immediately upon contaminant discovery.

3.5.8. Excavation for Structures

A. General: All excavations shall be carried to foundation subgrade materials satisfactory to the Engineer, regardless of the elevations shown on the Drawings. In the event unsuitable soil is encountered at the required elevation, the Engineer shall determine the depth of removal of such soil.

B. Unless otherwise specified, the bottoms of all excavations shall be compacted to at least 100% of maximum density per ASTM D 698 or 95% of maximum density per ASTM D 1557. Prior to such compaction, the ground water shall be lowered to a depth of at least 2.0 feet below the bottom of the excavation.

C. Footings: To minimize differential settlement, it is essential that earth surfaces upon which footings will be placed be compacted to the approval of the Engineer and Owner and in accordance with the compaction requirements established in this section of these specifications. Excavate to the established lines and grades. Cut off bottoms of excavations level, and remove all loose soil. Where soft spots are encountered, remove all defective material and replace with lean concrete (flowable fill) or suitable backfill at no additional cost to the Owner.

D. Slabs: When undercutting of slabs is required in order to remove unsuitable material, the excavation shall be backfilled to the required elevation and compacted in accordance with this Specification.

E. Trenches:

1. The trench shall be of sufficient width and depth below the proposed final grade to ensure that all conduit/utility spacing is maintained per the details on the Drawings.

2. Trench excavation shall be accomplished so as to ensure the conduit/utility may be laid on a firm, undisturbed, native earth bed. In the event excavation below the required elevation is made, bedding material is to be placed and compacted so as to bring the excavation to grade.

3. Accurately shape trench bottoms so that the pipe or utilities are in continuous and uniform contact with either undisturbed soil or bedding material as shown on the Drawings. Do not backfill any trenches until all joints are made, required tests are performed, pipe encased as necessary, and Owner approval is granted to proceed.

F. Trench Excavation and Backfill

1. Do not damage any structures, pipes, or utilities.
2. Install sheeting, bracing, and shoring, as required, to safely maintain excavations and protect existing structures, utilities, and personnel as required by Federal, State, and local laws and ordinances, including 29 CFR 1926 Subpart P and Owner and site specific requirements.
3. Excavate trenches for pipes or utilities through natural ground or as required within fills. For pipes or utilities to be installed within fills, construct the fill first to a minimum height of 2 feet above the required elevation of the top of the pipe or utility. Excavate the trench into the fill, and the pipe or utility installed as required.
4. Maintain the minimum width of the trench as shown on the Drawings, but not greater than that necessary to permit the Work to proceed.
5. Remove soft or organic material encountered at the bottom of the trench for the full width of the trench to the depths required by the Owner and replace with bedding material required for the pipe or utility.
6. Accurately shape trench bottoms so that the pipe or utilities will be in continuous and uniform contact with either undisturbed soil or bedding material as shown on the Drawings.
7. Do not backfill any trenches until all joints are made, required tests performed, pipe encased as necessary, and Owner approval is granted to proceed.
8. Place bedding and backfill around pipe in accordance with the type and thickness indicated on Drawings and compacted to the minimum density as specified previously in this Section.
9. Place backfill around pipes and utilities so that the elevation of the fill is the same on both sides. Use rammer-type compactors with caution adjacent to pipes or utilities to avoid damage or movement.
10. After backfilling, fine-grade the disturbed areas to blend in with existing contours, left with puddle-free drainage, and seeded or otherwise protected as shown on the Drawings.

3.6. DRAINAGE AND DEWATERING

3.6.1. Prevent surface water and groundwater from entering excavations, from ponding on prepared subgrades, and from flooding construction site and surrounding areas. Provide for the collection and disposal of surface and subsurface water encountered during construction. Dispose of water as approved by the Owner.

3.6.2. Protect subgrades from softening, undermining, washout, and damage by surface or groundwater accumulation. Completely drain construction site during periods of construction to keep soil materials sufficiently dry. Provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein.

3.6.3. Dewatering

A. Should groundwater be encountered, the Contractor shall be responsible for utilizing a dewatering system(s) to remove water from the excavations. Prior to any dewatering, Contractor is responsible for applying for all applicable dewatering permits.

B. During Construction, provide and maintain at all times during construction, ample means and devices with which to remove promptly and dispose of all water from every source entering the excavations or other parts of the Work. The Contractor shall utilize quiet pumps and socks, with noise deflectors installed around the pumps, to comply with all allowable night time local noise ordinances. Dewater by means which will ensure dry excavations and the preservation of the final lines and grades of bottoms of excavations. If dewatering is performed by use of a sock system, Contractor shall completely grout fill the abandoned sock(s) upon completion of dewatering activities. Locations of all abandoned socks shall be indicated on Contractor submitted “as-built’ Drawings.

C. Control groundwater and surface runoff flowing toward or into excavations to prevent sloughing of excavation slopes and walls, boils, and excavation uplift and heave to eliminate all interference with orderly progress of

construction. Remove water by pumping or other suitable methods. Use filters on dewatering devices to avoid removal of fines from soil. Provide erosion protection at discharge locations to avoid erosion. Install dewatering system prior to the excavation reaching the groundwater in order to maintain the integrity of the in-situ material.

D. Verify the groundwater level prior to excavation. While the excavation is open, maintain the water level continuously, at least two (2) feet below the working level. Submit a dewatering work plan, as necessary.

E. Operate the dewatering system continuously until dewatering is no longer required and construction work is complete within two (2) feet of the water level.

F. Should the above requirements not be followed, the Contractor shall be held liable for any fines and/or violations incurred by the Owner.

3.7. HERBICIDE (GROUND STERILIZATION)

3.7.1. Prior to spreading aggregate in the substation area, the Contractor shall have the area treated with DuPont Krovar I DF for selective control of weeds.

3.7.2. Areas **outside** of the fence shall **not** be treated.

3.7.3. Application shall be by a licensed pesticide applicator in accordance with the manufacturer's instructions and precautionary statements. Personal protective equipment recommendations on the MSDS shall be strictly followed. Federal, State and local regulations regarding handling, transportation and spills shall be observed by the applicator.

3.8. FILL PLACEMENT AND COMPACTION

3.8.1. Fill shall be placed true to lines, grades and elevations shown on the Drawings. Elevations after final grading shall be within 0.1 foot above or below plan dimensions.

3.8.2. Rework fill or subgrade conditions that are dried out, excessively wet, or damaged by construction equipment. Scarify surface to minimum depth of 6 inches where additional fill or structures are to be placed. Bring fill to the specified moisture content and re-compact to the required density prior to the placement of additional fill or structure.

3.8.3. Rework fill not meeting moisture content requirements. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 3 percent of optimum moisture content.

A. Remove and replace, or scarify to minimum depth of 6 inches and air-dry, soil material that exceeds moisture content requirements and is too wet to compact to specified dry unit weight.

B. Add water, if required, by sprinkling, by only amount needed. Ponding or flooding is not permitted.

3.8.4. Cease placing fill in areas during inspection, sampling and testing.

3.8.5. Prior to backfilling around structures, verify that anchoring (for underground structures), sub-drainage, dampproofing, or waterproofing installations are complete.

3.8.6. Direct hauling equipment and operations to avoid rutting, if possible, and to provide uniform compaction over areas traversed. Remove rutting, if any, prior to placement of fill or concrete.

3.8.7. Use compaction equipment compatible with types of placed materials and of type and size required to produce the required compaction. Compaction by manual methods or small drop weights, by using an excavator bucket as a “ram”, or by other similar measures using “non-compaction” equipment, is not acceptable.

3.8.8. Use sheepsfoot or rubber-tired rollers to compact cohesive soils and smooth-wheel vibratory rollers to compact granular materials, unless approved otherwise.

3.8.9. Within 3 feet of structures or subsurface walls, place fill material in maximum 6-inch loose lifts and use compaction equipment weighing less than 200 pounds. The use of large equipment close to subsurface walls must be restricted a minimum distance equal to about two-thirds of the unbalanced height of fill at any time

(resulting in a line beginning at the toe of the wall back face sloping approximately 60 degrees upwards from horizontal).

3.8.10. Site Fill

A. Use under sidewalks, aggregate surfaced, grass surfaced, planted, and general areas unless otherwise shown on the Drawings.

B. Site fill shall be placed in successive layers of not more than twelve (12) inches in thickness, loose measure, compacted to 90% of maximum density as determined by Modified Proctor Test (ASTM D 1557) or 95 percent of the maximum dry density, as determined by Standard Proctor Test (ASTM D 698); maintain moisture content at time of compaction within + or - 3% from the optimum moisture content.

C. Place backfill around pipes and utilities so that the elevation of the fill is the same on both sides. Use rammer-type compactors with caution adjacent to pipes or utilities to avoid damage or movement.

3.8.11. Structural Fill

A. Use under pavements and structural slabs, footings, and foundations unless otherwise shown on the Drawings.

B. Structural backfill shall be deposited in layers not exceeding six (6) inches in thickness and shall be compacted to a density of not less than 95% of the maximum density as determined by Modified Proctor Test (ASTM D 1557) or 100 percent of the maximum dry density, as determined by Standard Proctor Test (ASTM D 698); maintain moisture content at time of compaction within + or - 2% from the optimum moisture content.

C. No backfill shall be placed against masonry or concrete walls and piers until the structure has been in place five (5) days or until permission has been given by the Engineer. When backfilling against masonry walls, each side shall be backfilled simultaneously to prevent excessive stress.

3.8.12. Aggregate Surfacing

A. Refer to the Site Surfacing section for aggregate surfacing information.

3.8.13. Aggregate Base Course

A. Refer to the Site Surfacing section for aggregate base course information.

3.8.14. Flowable Fill

A. Comply with ACI 229 and ACI 304 when mixing, transporting and placing flowable fill unless otherwise required herein.

B. Place flowable fill in lifts of no more than three (3) feet thick unless otherwise approved by the Owner. Remove excess bleed water from each lift prior to placing additional lifts. Do not place the additional lift within 24 hours of placement of the underlying lift unless otherwise approved by the Owner.

C. Protect pipes or utilities against displacement or flotation if flowable fill is used.

3.9. GEOTEXTILE PLACEMENT

3.9.1. Ensure the subgrade on which the geotextile is to sit is smooth, free of obstructions, depressions, debris, and soft or low density pockets of material.

3.9.2. Lay the geotextile smooth and free of tension, stress, folds, wrinkles, or creases.

3.9.3. With the exception of temporary sediment fence, overlap the adjacent sheets of geotextiles a minimum of 1-foot unless otherwise shown on Drawings.

3.9.4. Perform backfilling operations in a manner which prevents damage to the geotextile. Replace any geotextile damaged during backfilling operations.

3.10. SOIL TESTING AND INSPECTION

3.10.1. The Contractor shall engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports.

3.10.2. Submittals

A. Alternative test procedures

B. Test Reports

3.10.3. Inspection and Preparation

A. Test laboratory procedures and equipment:

1. Inspect at intervals of not more than 3 years by a qualified national authority.

2. Submit a copy of the certification. The AASHTO Material Reference Laboratory established by the National Institute of Standards and Technology is a qualified national authority.

3. Request copies of test equipment certification and calibration records as appropriate

B. Provide all necessary sampling, sample making, and inspection equipment in sufficient quantities to support the Work.

3.10.4. Personnel Requirements

A. Laboratory, testing, and inspection personnel:

1. Meet the minimum qualifications in ASTM D 3740.

2. Provide professional supervising geotechnical engineer registered in the State of Florida.

3.10.5. Testing Requirements

A. Provide sufficient number of personnel, per working shift, at the site to support the construction operations.

B. Conduct tests per the methods and frequencies indicated below, and submit per the requirements of this Section. The frequencies indicated are a minimum and are subject to change.

C. Include in the test reports at least the following information:

1. Project description and Job No

2. Sample or Test No.

3. Description of material

4. Location of sample or test [horizontal - within 5 feet, elevation - within 0.5 feet]

5. Tested by

6. Date of testing

7. Temperature and weather conditions

8. References to any other tests used in the analysis

9. Results of the test

10. Any deviations from specified testing procedure

11. Any difficulties in performing test

12. Whether material or test passes or fails, if applicable

D. Transport all samples to the offsite laboratory and store prior to testing per the applicable codes and standards.

E. Test results and inspections which meet project requirements shall be presented to the Owner within 2 days following completion of test.

F. Test results or inspections which do not meet project requirements shall be presented to the Owner immediately verbally followed by written report within 2 days.

G. Compaction tests shall be made no sooner than one day before the placing of a succeeding layer of fill or the pouring of a foundation, as the case may be. The intent of the time stipulation is to minimize the loss of compaction due to moisture loss after the compaction test has been made.

3.10.6. Required Tests and Inspections

A. Subgrade Inspection

1. Soil Description – ASTM D 2488 every time a test/inspection is performed on the subgrade
2. Verification of all subgrade preparation, including list of equipment utilized
    - Visual (A report or summary form shall be prepared on the observations made for the subgrade preparation).
3. Proctor Density Test and Specific Gravity Test – ASTM D 1557 or D 698 and ASTM D 854
    - One test for each type of material. At least five (5) dry density/moisture content points to adequately plot the curve, including the "zero air voids" line, which requires that the specific gravity of soil solids be determined.
4. Field Density and Moisture Content Tests – Sand-Cone Method ASTM D 1556, Balloon Method ASTM D 2167, or Nuclear Method ASTM D 6938
    - One test "pair" per lift of fill for each 5000 ft^2 of subgrade or at least one test "pair" at the bottom of each excavation, whichever is more frequent. If the nuclear method is employed, the device shall be calibrated by comparison with immediately-adjacent sand-cone tests at least once a month or as frequent as the Engineer deems appropriate.

B. Site and Structural Fill

1. Proctor Density Test - ASTM D 1557 or D 698
    - Test at beginning of project and each time the type or source of fill material is changed
2. Gradation - ASTM D 6913
    - Test at beginning of project, each time the type or source of fill material is changed, and whenever a problem appears to exist in the gradation of the material
    - Three (3) additional Particle Size and Permeability tests shall be performed on truck loads of fill material randomly selected by the the Owner. If any of the truck loads tested do not comply with the fill requirements, the material shall be rejected, and the Contractor shall perform six (6) additional sets of tests on material in place. Any material in place that does not comply with the fill requirements shall be removed and replaced with acceptable material at no additional cost to the Owner. The Contractor shall pay for all of the above testing.
3. Specific Gravity – ASTM C 127
    - Whenever necessary as part of ASTM D 1557.
4. Liquid and Plastic Limit – ASTM D 4318
    - Test at beginning of project and each time the type or source of fill material is changed.
5. Field Density and Moisture Content Tests – Sand-Cone Method ASTM D 1556, Balloon Method ASTM D 2167, or Nuclear Method ASTM D 6938
    - Five (5) tests per layer of site fill at locations determined by the Owner for site compaction. If the nuclear method is employed, the device shall be calibrated by comparison with immediately-adjacent sand-cone tests at least once a month or as frequent as the Engineer deems appropriate.

6. Lift Thickness – Visual/Manual; One test per lift

3.10.7. Coarse Aggregate

A. Gradation - ASTM D 6913

1. Whenever it appears that a problem exists in the gradation of the material

B. Lift Thickness – Visual/Manual; One test per lift

4. BELOW GRADE FACILITIES

4.1. MANHOLES

Not Used

4.2. DIRECT BURIED CONDUIT

4.2.1. Contractor shall furnish and install direct buried conduits according to JEA Standard UG-V-1 – Direct Buried Conduit, this specification, and the Construction Drawings.

4.2.2. The Contractor shall excavate trenches as indicated on the Drawings for installing conduit.

4.2.3. The Contractor shall furnish and install conduits in the locations shown on the Drawings. The conduits shall be electrical grade meeting the standards listed in the Electrical Specifications (Section IX).

4.2.4. All conduits shall be installed in a workmanlike manner and comply with industry standards for conduit installation. When installing PVC conduit, the proper grade of PVC cement shall be applied in accordance with the manufacturer's instruction.

4.2.5. The Contractor shall install conduit a minimum of three (3') feet from other utilities (e.g. water, phone, etc.) running parallel to the conduit.

4.2.6. The PVC conduit shall be sufficiently flexible to allow it to conform to minor changes in trench direction or elevation. PVC 5 degree bend couplings shall not be used. Any other bends shall be made using factory made PVC ells or sweeps.

4.2.7. The Contractor shall furnish a pull cord in each conduit. The pull cord shall be blown by compressed air into all runs of conduit and attached to the conduit at each end. Open ends of conduits shall be plugged with foam to prevent debris from entering the conduit.The Contractor shall backfill and compact the trench as prescribed by the Earthwork section.

4.2.8. Upon completion of installation, the Contractor shall pull a mandrel and swab train through each high-voltage and medium-voltage duct. The mandrel shall be sized to prove roundness of the pipe. The Contractor shall schedule each inspection with the Owner. Where evidence of the lack of smoothness or roundness is discovered, all measures necessary shall be taken to eliminate the irregularities. Under no circumstances shall any roughness be permitted to remain within the installed pipe.

4.2.9. After installation of the conduit, the Contractor shall place Owner supplied red underground electrical warning tape throughout the trench during the back-filling operation. Warning tapes shall be installed twelve (12") inches below final grade in earth and eighteen (18") inches above conduit in pavement.

4.2.10. The Contractor shall back-fill and compact the trench as prescribed by the Earthwork Section.

4.3. CABLE TRENCH

4.3.1. Excavate trenches to a minimum width consistent with the stability of the sides. Excavate completely to the bottom of the framing members and correct any points of over-excavation by returning to grade with mechanically compacted backfill to form a smooth trench bottom. Remove all excess excavated material as required for proper alignment and elevation of work.

4.3.2. Install the concrete trench system in earth trenches with covers extending above the surrounding crushed rock surfacing as shown on the drawings.

4.3.3. Component members shall be set only on firm, compacted, backfill. Prior to setting the trench section, place geotextile fabric the full length of the trench excavation, overlapping a minimum of two (2') feet at each joint of the fabric. The width of the fabric shall be sufficient to cover the bottom and both sides of the cable trench to finish grade. Geotextile fabric shall be Mirafi 140N, a non-woven water permeable fabric.

4.3.4. After setting the component trench sections, back fill along sides with the geotextile fabric flush against the sides. Hand tamp the backfill along the outside walls of the trench.

4.3.5. The Contractor shall protect the trench against entrance of construction debris, rock, and earth during the construction. The trench shall be cleaned out of any such foreign material prior to placing of covers.

5. CONCRETE

5.1. SUBMITTALS

5.1.1. Pre-molded Expansion Joints data sheets

5.1.2. Joint Sealant data sheets

5.1.3. Concrete Mix Design - Proportions of concrete ingredients

5.1.4. Strength Test results

5.1.5. Batch tickets for each concrete delivery truck

5.2. MATERIALS

5.2.1. Cement: Cement shall be Portland cement conforming to ASTM C 150, Type I.

5.2.2. Fine Aggregate: Sand for concrete shall conform to ASTM C 33.

5.2.3. Coarse Aggregate: Coarse aggregate shall be natural gravel, crushed stone or slag conforming to ASTM C 33.

5.2.4. Water: Mixing water for concrete shall be potable water, clean and free from injurious amounts of oils, acids, alkalis, organic materials or other deleterious substances.

5.3. CONCRETE PROPORTIONING

The concrete mix design for the class of concrete specified for use under this contract shall be prepared and submitted to the Engineer for approval. No concrete shall be placed without prior approval of the mix design.

5.3.1. Composition: The concrete shall be composed of Portland cement, fine aggregate, coarse aggregate and water. The ingredients shall be proportioned to produce a dense, workable concrete, free from voids. The concrete shall be designed in accordance with applicable ACI standards to attain the properties of strength, slump and rate of hardening required by these specifications.

5.3.2. Maximum Size of Coarse Aggregate: Maximum size of coarse aggregate shall not be larger than 3/4 the minimum clear spacing between the reinforcing bars.

5.3.3. Strength and Slump: The following are the minimum compressive strengths and slump ranges for the various types of concrete construction. All slump tests shall be in accordance with ASTM C143 and shall be performed by the Contractor as directed by the Owner.

Type of Construction	Compressive Strength 28 Day (PSI)	Slump (in)
Footings, Slabs, Bond Beam, Lintel	4,500	3+/-1
Headwalls, Drop Inlets, Duct Banks, Pavement, Sidewalk	3,000	5+/-1
Curb and Gutter, Fence Footing	2,500	3+/-1
Drilled Shafts	5,000	8+/-1

5.3.4. Air Content: The air content in the concrete shall be maintained in accordance with the following requirements:

Course Aggregate Maximum Size (in)	Air Content By Percent Volume
1 1/2	3 +/- 1
3/4 to 1	4 +/- 1
3/8 to 1/2	5 +/- 1

5.3.5. Admixtures: Air entrainment shall be produced by the addition of an air-entraining admixture meeting the requirements of ASTM C 260. Air entraining cement shall not be permitted. If required, an approved water reducing retarder may be used in the proportions recommended by the manufacturer conforming to ASTM C 494.

5.3.6. Proportioning of Ingredients: Proportions, including water-cement ratio, shall be established on the basis of either laboratory trial batches or of field experience with the materials to be employed. The mix design together with supporting data shall be submitted to the Engineer for approval. The Engineer may, at his discretion, require only a letter from the concrete supplier indicating compliance with the specifications in lieu of submission of a mix design.

5.4. REINFORCING STEEL

5.4.1. Reinforcing Bars: Reinforcing bars shall conform to ASTM A 615, Grade 60.

5.4.2. Welded Wire Fabric: Welded wire fabric shall conform to ASTM A 185.

5.4.3. Shop Drawings: Shop drawings for fabrication and placing of the reinforcing steel and accessories shall be submitted to the Engineer for approval.

5.4.4. Cleaning and Bending: Metal reinforcement at the time concrete is placed shall be free from loose, flaky rust, loose scale, mud, oil or other coatings that will destroy or reduce the bond. All bars shall be bent cold. Details of hooks and bends for reinforcement shall be in accordance with ACI 318.

5.4.5. Placing Reinforcement: Metal reinforcement shall be accurately placed and adequately secured in position by concrete or metal chairs and spacers. After being placed, the reinforcing bars shall be maintained in a clean condition until they are completely embedded in the concrete. Reinforcing steel shall be handled and placed in accordance with ACI 318. No metal reinforcement shall be placed within COJ Right-of-Way.

5.5. EMBEDDED ITEMS

All sleeves, inserts, anchors, ground rods and other embedded items shall be placed prior to concreting. Anchor bolts shall be set to the exact horizontal dimensions shown. The Contractor shall provide adequate protection for all threaded sections of the anchor bolts above the surface of the concrete. Any threaded section of the anchor bolts above the surface of the concrete which becomes damaged or encrusted with concrete during and/or after pouring shall be returned to their original threaded condition at no cost to the Owner. Apply cold galvanizing after re-threading and again after setting structures in their final position.

5.6. MIXING AND DELIVERY OF CONCRETE

5.6.1. Mixer: Unless otherwise authorized, the mixing of concrete shall be done in a batch mixer of approved AGC type or in ready-mix equipment conforming to ASTM C 94. The volume of the mixed material for each batch shall not exceed the manufacturer's rated capacity of the mixer.

5.6.2. Mixing Time: The concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged. For job-mixed concrete, the mixer shall be rotated at the speed recommended by the manufacturer and mixing shall be continued for at least one and one-half (1-1/2) minutes after all materials are in the mixer. For mixers larger than one cubic yard capacity, the minimum mixing time shall be increased 15 seconds for each additional 1/2 cubic yard of concrete or fraction thereof.

5.6.3. Delivery: Each batch of concrete shall be delivered to the site of the work and discharged completely within 90 minutes after addition of the cement to the aggregates. Exceptions to this 90 minute time limit will be permitted only upon special permission from the Engineer. A ticket or time slip shall accompany each batch, showing the

time of the batching of the cement. The production and delivery of ready-mixed concrete shall be such that not more than 20 minutes shall elapse between the depositing of successive batches of concrete in any monolithic unit of concrete.

5.6.4. Cold Weather Batching: When the temperature is below 40°F or is likely to fall below 40°F during the 24-hour period after placing, adequate equipment shall be provided for heating the concrete materials. No frozen material or materials containing ice shall be used. Temperatures of the separate materials, including the mixing water, when placed in the mixer, shall not exceed 140°F. When placed in forms, the concrete shall have a temperature of between 50°F and 90°F.

5.6.5. Addition of Water: Indiscriminate addition of water to increase slump is prohibited. When concrete arrives at the site with slump below that suitable for placing, water may be added only if neither the maximum water-cement ratio nor the maximum slump is exceeded. The concrete supplier must submit, at the time of delivery of each batch of concrete, a signed letter stating the maximum amount of water that may be added to the **entire** load of concrete in the truck. This shall be a **one time** addition of water. The letter must also state that addition of the specified amount of water shall not affect the design requirements of the approved concrete mix design. Acceptance of this by the Owner does not relieve the Contractor from meeting the design specifications required herein. If addition of water results in a failure of any test of any kind of the concrete placed, the Contractor shall remove and replace the concrete at no cost to the Owner.

5.7. FORMS

5.7.1. Installation: Forms shall conform to the shape, lines and dimensions of the members as called for on the Drawings, shall be substantially free from surface defects and sufficiently tight to prevent leakage of mortar. They shall be properly braced or tied together to maintain position and shape.

5.7.2. Removal: Forms shall be removed in such a manner and at such a time as to insure the complete safety of the structure. In no case shall the supporting forms or shoring be removed until the members have acquired sufficient strength to safely support their own weight and the load thereon.

5.7.3. Footings: Earth cuts may be utilized for forms provided the sides are stable at time of placing.

5.7.4. Chamfers: Exposed corners of columns, beams and piers shall be chamfered 3/4" unless otherwise noted on the Drawings.

5.8. PLACING OF CONCRETE

5.8.1. Vapor Barrier: All floor slabs on grade or fill shall be waterproofed with one ply of polyvinyl chloride (PVC) 15 mils thick. The PVC sheet shall be laid on the subgrade after it has been dressed and compacted. Joints shall be lapped six (6) inches and sealed continuously with a pressure-sensitive tape, especially made for this purpose, or with an approved water-resistant adhesive. PVC sheets shall be turned up four (4) inches at walls, columns, and all other items projecting above the slab. Before concrete is placed, the sheets shall be carefully inspected and all punctures shall be patched with the pressure-sensitive tape or additional plies of strips of PVC sheeting laid down on approved adhesive.

5.8.2. Preparation of Equipment and Place of Deposit: Before placing concrete, all equipment for mixing and transporting the concrete shall be cleaned; all debris and ice shall be removed from the spaces to be occupied by the concrete and all reinforcement shall be thoroughly cleaned of ice or other coatings. Water shall be removed from the place of deposit before concrete is placed unless otherwise permitted by the Engineer.

5.8.3. All reinforcement, forms, fillers and ground with which the concrete is to come in contact shall be free from frost. Concrete shall not be deposited during rain unless adequately protected and, in any case, preparations shall be on hand to protect newly placed concrete from rain until it has hardened sufficiently so that it will not be damaged.

5.8.4. Conveying: Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of the materials. Equipment for chuting, pumping and pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery end and without separation of the materials.

5.8.5. Placing: No concrete shall be placed until the Engineer or his authorized representative has inspected forms, reinforcing and conditions incidental to the pour. Concrete shall be deposited as nearly as practicable in its final position to avoid separation due to re-handling or flowing.

5.8.6. All concrete shall be thoroughly consolidated by suitable means during placement and shall be thoroughly worked around the reinforcement and embedded items and into the corners of forms.

5.9. FINISHING

5.9.1. Patching: Immediately after stripping forms, all defective areas shall be patched with mortar similar to the concrete mix. Proprietary compounds for patching may be used provided they are used in accordance with the manufacturer's recommendations.

A. Major defective areas, including those resulting from leakage of forms, excessive honeycomb, large bulges and large offsets at form joints shall be chipped away to expose sound material and the surfaces that are to be patched shall be coated with an epoxy-polysulfide adhesive. The patching mortar shall be pressed in for a complete bond and finished to match adjacent areas.

B. Minor defective areas, including honeycomb, air bubbles, holes resulting from removal of ties and those resulting from leakage of forms shall be patched with grout without resorting to chipping.

5.9.2. Finishing: After patching, finish exposed-to-view surfaces as follows:

A. Standard Finish: Trim remaining bulges and offsets to remove fins and form blemishes, and dress rough edges. Rub with carborundum and water as necessary to achieve this finish. The result shall be a solid concrete surface in a true and accurate plane.

B. Rubbed Finish: In addition to the work required for a "standard finish," rub all the surfaces with carborundum and water to provide the hereinafter specified results. Wood grain pattern from wood forms need not be removed but shall be rubbed to provide uniformity of surface. Smooth surfaces resulting from overlaid plywood and metal shall be rubbed to remove the glaze. The result should be a solid concrete surface in a true and accurate plane, having a uniformly rubbed finish and free of glazed areas.

C. Areas to be finished as described above:

- Rubbed Finish: Control building bond beam surfaces.
- Standard Finish: All other exposed-to-view surfaces.

5.10. FINISHING OF UNFORMED SURFACES

5.10.1. General: Grade and screed the surfaces to the exact elevation or slope shown or required. After screeding, tamp the mixture thoroughly to drive the coarse aggregate down from the surfaces and apply the finish below.

5.10.2. Float Finish: Finish the surface with a wood or machine float to a true and uniform plane with no coarse aggregate visible. Dusting to absorb surface water shall not be permitted.

5.10.3. Broom Finish: Finish the surface with a wood or machine float to a true and uniform plane with no coarse aggregate visible. In addition, lightly broom the surface to make skid resistant. Dusting to absorb water shall not be permitted.

5.10.4. Finish Schedule: Apply indicated finish as scheduled below:

	Trowel	Broom	Float
Control Building	X		
Transformer Foundation		X	
Circuit Breaker Foundation		X	
All Other Foundations			X

5.11. JOINTS

5.11.1. Construction Joints: Construction joints shall not be permitted except in the locations shown on the drawings. All reinforcing steel and welded wire fabric shall be continued across joints. Bond shall be obtained by either the use of an approved adhesive or by roughening the surface of the concrete in an approved manner.

5.11.2. Isolation Joints: Isolation joints shall be provided to separate concrete slabs from columns, footings or walls. There shall be no connection across the joint by reinforcement, keyways or bond. Joints shall be filled with preformed joint filler material conforming to ASTM D 994 and sealed with a material compatible to the joint filler.

5.11.3. Control Joints: Control joints made of premolded joint material shall be installed in floor slabs to allow for contraction caused by drying/shrinkage. Joints shall be spaced at a maximum of 20 feet with the joint spacing chosen so that the panels are approximately square. Depths of control joints shall be one-fifth the slab depth.

5.12. CURING AND PROTECTION

Freshly deposited concrete shall be protected from premature drying and excessively hot or cold temperatures, and shall be maintained with minimal moisture loss at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete. The approved practices of cold weather and hot weather concreting are those outlined in ACI 306 and ACI 305, respectively.

5.12.1. The Owner requires, as a part of this Contract, that the Contractor assure and guarantee that the installation of the foundations be complete and cured a minimum of two (2) weeks on or before expected delivery of the abovementioned equipment. The Owner expects to incur significant demurrage/handling charges if the foundations are not ready in time. In the event that the foundations are not ready, cured, and available to set the transformer equipment directly on the foundation at the time of delivery, the Contractor shall be responsible for all costs of providing temporary storage, cribbing, offloading the equipment onto temporary cribbing, then relocating the equipment onto the foundation once the foundations have cured for two (2) weeks and/or meets the minimum concrete strength requirements. The Contractor shall also pay any demurrage, handling, or manufacturer field service charges incurred by the Owner as a result of failure to have the foundation or site ready to accept the equipment.

5.13. TESTING

5.13.1. Testing Laboratory: The Contractor shall, at his expense, employ an approved independent laboratory to prepare cylinders and perform all concrete testing. Two (2) copies of all test reports shall be submitted to the Engineer.

5.13.2. Tests: Each truckload or partial truckload of concrete shall be tested for air content, slump and compressive strength.

A. Air Content: Tests for air content shall be made in accordance with ASTM C 173 or ASTM C 231.

B. Slump: Tests for slump shall be made in accordance with ASTM C 143.

C. Compressive Strength: For each compressive test, one set of four (4) cylinders shall be made. Test cylinders shall be prepared in accordance with ASTM C 31 and ASTM C 172. One cylinder shall be tested at 7 days, two at 28 days and the fourth held in reserve. The 28-day strength shall be the average of the two cylinders tested. The strength level of the concrete shall be considered satisfactory if the average equals or exceeds the required f'c. Compressive strength tests shall be made in accordance with ASTM C 39.

5.13.3. Core Test: If compressive tests do not conform to the requirements of these specifications, approval may be given by the Engineer for the Contractor to have alternate strength tests made, provided that the concrete satisfies all other requirements of these specifications. Alternate strength tests shall be made on specimens secured from the structure in accordance with ASTM C 42 (Core Test). These alternate tests shall be made at the Contractor's expense. If the concrete does not meet the required specifications, the concrete so represented or the entire structure, if concrete not meeting these specifications is a part thereof, shall be removed and replaced by the Contractor at his expense. In structure elements for which the strength of the concrete is not critical and the structural integrity is not affected, the Engineer may, at his discretion, allow the concrete to remain in place.

5.14. GROUT FOR STRUCTURE FOUNDATIONS

It is the intent of the foundation detail Drawings that all structure foundations be poured true and level to the proper elevation without the use of grout; also, that all structure columns be set plumb without the use of leveling nuts or shims. However, if this cannot be accomplished, the Contractor may use shims and a maximum of 1-1/2" of non-metallic, non-shrinking, premixed, inorganic grout. The grout shall be Masterflow 713 (Master Builders) or F-100 (Sauereisen) or an approved equal. The Contractor shall install the grout in strict accordance with the manufacturer's specifications and/or instructions.

6. DRILLED SHAFTS

6.1. SCOPE

6.1.1. This section presents the general technical provisions and requirements for installation of drilled shaft foundations. For purposes of these specifications, a drilled shaft shall be defined as a foundation element constructed by excavating a circular shaft in the soil which subsequently is filled with concrete, reinforcing steel and anchor bolt cage as required.

6.1.2. It is not the intent of these specifications to unnecessarily restrict the contractor in his construction methods, techniques or equipment. However, methods, techniques or equipment herein specified are considered necessary to provide adequate pier installation. Deviations from these techniques or equipment may be made only if approved by the Owner and Engineer in advance. All work shall be done and completed in an acceptable manner in accordance with best modern practices for construction of drilled pier foundations, notwithstanding any omissions from the specifications or Drawings.

6.2. PERSONNEL REQUIREMENTS

6.2.1. Qualifications of the Contractor

A. The Contractor shall be experienced in the construction and load testing of drilled shafts.

B. On-site supervisors shall have a minimum of four (4) years experience in supervising construction of drilled shaft foundations of similar size (diameter and depth) and difficulty to those shown on the Drawings. The work experience shall be direct supervisory responsibility for the on-site drilled shaft construction operations. Project management level positions indirectly supervising on -site drilled shaft construction operations are not acceptable for this experience requirement.

C. Drill rig operators shall have a minimum of two years experience in construction of drilled shaft foundations and drilling in similar subsurface conditions.

6.3. SUBMITTALS

6.3.1. Pre-Construction Submittals

A. Personnel list identifying the Contractor's project manager, drill rig operator, and job site supervisor to be assigned to the project. The personnel list shall contain a summary of each individual's experience and be sufficiently complete for the Engineer to evaluate the qualifications of the individuals.

B. Drilled Shaft Installation Plan

1. Description of overall construction operation sequence and the sequence of drilled shaft construction when in groups or lines.

2. A list, description, and capabilities of proposed equipment, including cranes, drills, augers, casing, bailing buckets, final cleaning equipment, and drilling units. The narrative shall describe why the equipment was selected and its' suitability to the anticipated site and subsurface conditions.

3. Details and procedures for protecting existing structures and utilities during drilled shaft installation.

4. Details of drilled shaft excavation methods, including proposed drilling methods, methods for cleanout of the bottom of the excavation, and a disposal plan for excavated material and slurry (if applicable).

5. Details of the method(s) to be used to ensure drilled shaft hole stability (i.e. prevention of caving, bottom heave, etc., using temporary casing, slurry, or other means) during excavation and concrete placement. The details shall include a review of method suitability to the anticipated site and subsurface geotechnical conditions.

6. Detailed procedures for mixing, using, maintaining, and disposing of slurry, if used. A detailed mix design (including all additives and their specific purpose in the mix design), and a discussion of its suitability to the anticipated subsurface geotechnical conditions, shall also be provided for the proposed

slurry. The submittal shall include a slurry quality control plan, including tests to be performed, test methods to be used, and the minimum and/or maximum property methods which must be met to ensure that the slurry functions as intended, considering the anticipated subsurface conditions and shaft construction methods, in accordance with the slurry manufacturer's recommendations. As a minimum, the slurry quality control plan shall include the following tests: Density, Viscosity, pH, Sand Content.

7. Details of reinforcement placement including the type and location of all splices, reinforcement cage supports and centralization methods, type and location of all instrumentation, and procedures for lifting and setting the reinforcement cage.

8. When casings are proposed or required, casing dimensions and detailed procedures for permanent casing installation, temporary casing installation and removal, and methods of advancing the casing, along with means to be utilized for excavating the drilled shaft hole shall be provided.

9. Details of concrete placement, including proposed equipment and procedures for delivering concrete to the drilled shaft, placement of the concrete into the shaft, including initial placement and the raising of the tremie or pump line during placement, size of tremie and pump lines, and operational procedures for pumping.

10. Concrete mix designs (Note: Provide revised mix design when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments).

11. Methods and materials to be used to fill or eliminate all voids below the top of the shaft between the plan shaft diameter and the excavated shaft diameter, or between the shaft casing and surrounding soil, if permanent casing is specified.

C. Sample drilled shaft inspection logs.

6.3.2. Construction Submittals

A. Mix design and strength-test data certification from concrete supplier.

B. Drilled shaft installation records within one week after completion. Include as-built drilled shaft locations and top elevations.

C. Concrete compression test results within 24 hours of each test.

6.4. PERFORMANCE REQUIREMENTS

6.4.1. Perform all work in compliance with OSHA Standards and other State and local codes and standards and the Owner's site safety requirements.

6.4.2. Perform all work within the schedule established by the Owner.

6.4.3. The contractor shall supply a drilling rig capable of providing sufficient down pressure and torque to drill down to the required length through the site subsurface conditions. The drill rig shall have the capability of drilling at least 20% deeper than the longest shaft length indicated on the Drawings.

6.4.4. Allowable Tolerances

A. The centerline of all drilled shafts shall not be more than three (3") inches from the indicated plan position.

B. Drilled shafts in soil shall not be out of plumb more than 1.0 percent of the shaft length.

C. The minimum diameter of the drilled shaft shall not be less than that specified for its entire length.

D. Top elevation of the concrete shall be within minus 3.0 inches to plus 1.0 inches of that shown on the Drawings.

E. The reinforcing cage shall be concentric with the drilled shaft excavation within a tolerance of 1-1/2 inches.

F. The reinforcing bars shall be no higher than 6.0 inches above or 3.0 inches below the plan elevation.

If these tolerances are exceeded, proper additional construction (including costs of engineering and redesign) as required by the Engineer shall be provided without additional cost to the Owner.

6.5. MATERIALS

6.5.1. Reinforcing Materials

A. Reinforcing materials shall conform to the Concrete section of this specification.

6.5.2. Concrete Materials

A. Concrete materials shall conform to the Concrete section of this specification.

6.5.3. Steel Casing

A. All casing shall be watertight and clean prior to placement in the excavation.

B. Temporary steel casing shall be in accordance with ACI 336.1. Casing shall be of ample strength to resist damage and deformation from transportation and handling, installation stresses, and all pressures and forces acting on the casing. The casing shall be capable of being removed without deforming and causing damage to the completed shaft, and without disturbing the surrounding soil. The outside diameter shall not be less than the specified diameter of the shaft.

C. Permanent casing shall be of steel conforming to ASTM A 36 or ASTM A 252 Grade 2 unless otherwise approved by the Engineer. All permanent casing shall be of ample strength to resist damage and deformation from transportation and handling, installation stresses, and all pressures and forces acting on the casing.

6.5.4. Slurry

A. Slurry shall consist of polymers with a history of successful use in drilled shaft construction, mixed with potable water to form a stable colloidal suspension; complying with ACI 336.1 for density, viscosity, and pH. Mineral slurry consisting of pulverized sodium bentonite or pulverized attapulgite shall only be used upon Engineer's approval.

6.5.5. Thermal Wire

A. Embedded thermal sensors for Thermal Integrity Profiling shall meet the requirements of Section 6.3.5 of ASTM D 7949.

6.6. INSTALLATION PREPARATION

6.6.1. Drilled shafts shall be installed at locations that are precisely established at the site and with the diameters and to the depths shown on the Drawings.

6.6.2. Drilled shaft excavations shall not be left open overnight unless cased full depth or otherwise protected against sidewall instability. The use of slurry to protect a drilled shaft during a drilling stoppage or overnight shall be approved by the Engineer.

6.6.3. The Contractor bears full responsibility for selection and execution of the method(s) of stabilizing and maintaining the drilled shaft excavation. The walls and bottom of the drilled shaft excavation shall be protected so that side wall caving and bottom heave are prevented from occurring, and so that the soil adjacent to the drilled shaft is not disturbed. The Contractor may excavate the drilled shaft without excavation protection provided the Contractor can demonstrate that the soil is stable and above the water table and zones of seepage. Acceptable protection methods include the use of casing, drilling slurry, or both.

6.6.4. Remove known obstructions encountered during drilling using approved method(s) only. Stop drilling immediately when an unknown obstruction is encountered and obtain further direction from the Engineer.

6.6.5. No drilled shaft excavation or casing installation shall be performed within a clear distance of three diameters of a completed drilled shaft until at least 24 hours after concrete placement, and only when the concrete has reached a minimum compressive strength of 1800 psi.

6.6.6. Cover adequately drilled shaft holes remaining open overnight for protection against accidental fall of personnel or objects into the hole.

6.6.7. The Contractor shall provide cooperative assistance, suitable access to the site and drilled shafts to be tested, and labor as required to assist the TIP Consultant in performing the required tests. Prior to testing, provide the drilled shaft lengths and construction notes to the Engineer and coordinate with the TIP Consultant to install the necessary TIP instrumentation prior to testing the shaft.

6.7. TEMPORARY CASINGS

6.7.1. The Contractor shall select the size and wall thickness of temporary steel casing, if used.

6.7.2. Temporary casings will be required at locations where the soil will not stand without support, or where, because of ground water conditions, sloughing of the sides of the piers may seriously delay or endanger the satisfactory completion of excavation and placement of concrete. The Contractor shall have immediately available for use on the job an ample supply of casings for each size which may be required and shall provide additional amounts, if required, to ensure orderly progress of the work. The casings shall be of such strength and rigidity as to maintain the required excavation lines and to resist crushing due to hydrostatic and/or earth pressure. All temporary casings shall be removed as concrete is placed or immediately thereafter, and in such a manner as to prevent sloughing material from dropping to the bottoms of the piers or falling on top of freshly placed concrete.

6.8. PERMANENT CASINGS

6.8.1. When piers penetrate very soft strata, the contractor may use corrugated metal pipe as forms to maintain the shape of the pier through these layers. The inside diameter of the casing shall be at least the nominal shaft diameter. Insertion into the excavated hole shall not unduly disturb side walls. When such casings are utilized, they shall not be removed, but shall remain in place.

6.9. DRILLED SHAFT EXCAVATION

6.9.1. The Contractor shall use an appropriate means such as a cleanout bucket, air lift, or hydraulic pump to clean the bottom of all drilled shafts.

6.9.2. The excavated drilled shaft shall be inspected and approved prior to proceeding with construction.

6.9.3. The bottom of the excavated drilled shaft shall be sounded with an airlift pipe, a weighted tape, a borehole camera with visual sediment depth measuring gauge, or other means acceptable to the Engineer, to determine if the bottom of the shaft is acceptable.

6.9.4. In soil shafts, the base of the drilled shaft shall be covered by no more than three inches of sediment or loose or disturbed material, just prior to placing concrete.

6.9.5. Excavated materials shall be disposed of in an area designated by the Owner.

6.9.6. At the end of drilling, clean bottom of drilled shaft excavation of all loose or soft material and in such a manner that bottom is horizontal.

6.10. SLURRY INSTALLATION, SAMPLING, AND TESTING

6.10.1. When slurry is used to maintain a stable excavation, the slurry level in the excavation shall be maintained to obtain hydrostatic equilibrium throughout the construction operation at a height required to provide and maintain a stable hole, but not less than 5 feet above the water table. The Contractor shall clean, re-circulate, de-sand, or replace the slurry, as needed, in order to maintain the required slurry properties.

6.10.2. Mineral or polymer slurry shall be mixed and thoroughly hydrated.

6.10.3. The Contractor shall draw sample sets from the slurry and test the samples for conformance with the appropriate specified material properties before beginning slurry placement in the drilled hole.

A. A sample set shall be composed of samples taken at mid-height and within two feet of the bottom of the storage area.

B. Sample sets shall be taken and tested a minimum of every four hours during each shift and immediately prior to placing concrete.

6.10.4. The Contractor shall sample and test all slurry in the presence of the Owner, unless otherwise approved.

A. The date, time, names of persons sampling and testing the slurry, and the results of the tests shall be recorded.

B. A copy of the recorded slurry test results shall be submitted to the Engineer at the completion of each drilled shaft.

6.11. STEEL REINFORCEMENT

6.11.1. Prior to and during fabrication of the steel reinforcing cage, the reinforcing bars shall be supported off the ground surface, and shall be protected from contamination with mud and other deleterious materials.

6.11.2. Install Thermal Wires as directed by TIP Consultant and verify that the wires are working correctly prior to placing concrete.

A. Install a minimum of 4 thermal wires on each cage to allow the review of diametrically opposite wires during analysis.

B. Thermal wires shall be aligned with the longitudinal reinforcement of the shaft and stretched to minimize the wire slack. The wires shall be tied at a maximum spacing of every 3 feet to the reinforcement at a location on the reinforcement that is 90 degrees to a line connecting the reinforcement with the center of the shaft.

6.11.3. Do not place reinforcement in a drilled shaft until the excavation is inspected.

6.11.4. The reinforcement cage shall be completely assembled prior to drilling and be ready for adjustment in length as required by the conditions encountered.

6.11.5. The cage shall be lifted using multiple point sling straps or other approved methods to avoid cage distortion or over-stress.

6.11.6. The steel reinforcement cages shall be centered within the drilled shaft and secured to prevent lateral and vertical movement during concrete placement. The Contractor shall attach suitable cage centralizers and attach reinforcement boots to ensure proper cage alignment and clearance for the entire shaft. Centralizers and reinforcement boots shall be placed in accordance with manufacturer's recommendations.

6.12. CONCRETE PLACEMENT

6.12.1. Place concrete in the drilled shaft hole as soon as possible after completion of drilling, preferably on same working day.

6.12.2. The elapsed time for concrete placement shall not exceed the time limit defined in the Concrete section of this specification.

6.12.3. Temporary steel casings, if used, shall be withdrawn as the concrete is placed. A minimum five-foot head of concrete above the bottom of the casing shall be maintained during the casing withdrawal to prevent necking of the drilled shaft and to ensure that no extraneous material enters the drilled shaft concrete.

6.12.4. Concrete shall be placed through a tremie pipe that extends to the bottom of the drilled shaft. The pipe shall have a minimum inside diameter of ten inches and shall be initially plugged with a traveling or bottom plug that will prevent water from mixing with concrete within the tremie pipe. The pipe shall be watertight and shall not be constructed of aluminum. The tip of the pipe shall be maintained at least five feet in the concrete during placement.

6.12.5. The concrete shall be required to overflow the top of the drilled shaft until concrete of the proper consistency is observed. The excess concrete shall be removed to within the allowable tolerances for top of drilled shaft elevation.

6.12.6. When mineral drilling slurries are used, the following additional requirements shall apply:

A. When holes cannot be kept free of groundwater, concrete shall be placed by the use of a tremie pipe. The diameter of the tremie pipe should be as large as possible, but not greater than 1/3 the diameter of the shaft being poured. Drilled shafts less than thirty (30) feet deep may be poured with either a bottom sealed or

traveling plug tremie. The traveling plug must be sufficiently tight so as to prevent the mixing of the drill fluid and concrete. The reinforcing steel cage shall be in place before any concrete is placed in the tremie. With the tremie on the bottom of the shaft, the tube shall be filled to the top extending above the ground. The filled tremie shall be picked up approximately one (1) foot off the bottom of the shaft to allow the weight of the concrete to displace the seal at the bottom of the tremie.

B. During this initial pouring operation, the tremie is not to be pulled to such a height so as to clear the surface of the concrete already placed in the shaft. All concrete shall be poured through the now open tremie, with care taken to maintain a sufficient head of concrete to completely displace all drilling mud and suspended cuttings of material and to provide sufficient pressure so as to prevent reduction in pier diameter by earth pressure on the fresh concrete. The concrete in each pier shall be overpoured sufficiently to assure that clean, uncontaminated concrete is present at the top of the shaft.

C. During concrete pouring operations through the tremie, should the surface of the concrete in the pier be breached by the tremie, the tremie tube shall immediately be withdrawn from the hole, resealed and inserted below the surface of the concrete and pouring operations resumed. It may be necessary during large pours to replace the original long tremie with a shorter one. The replacement tremie should be sealed and inserted at least one hole diameter. Should the Engineer deem it necessary, when a breach occurs (and contamination is suspected), the Contractor shall retrieve the reinforcing steel cage, re-drill the shaft to reopen the hole, and begin the concreting operations from the bottom of the pier shaft.

D. Temporary casings shall be withdrawn as the concrete is deposited. A sufficient head of concrete shall be maintained to insure that no extraneous material enters the concrete and that necking has not occurred. An initial jerk of 2 to 4 inches will be permitted to start the lift; thereafter, while being removed from the pier hole, the casing must be kept plumb and must be pulled with a smooth vertical motion, without jerks.

E. The concrete along the full length of the anchor bolts shall be vibrated if the Engineer so directs.

F. Under certain circumstances, construction joints in pier shafts may be permitted. Prior approval must be obtained from the Engineer. Any such construction must be accomplished under dewatered conditions using approved ACI procedures, and must be properly recorded in the drilled pier report.

G. Concrete shall be placed within 30 hours of the start of drilling and within 12 hours of the last 5 feet of drilling. If greater time elapses, then the mud cake buildup on the sides of the shaft shall be removed by using an approved sidewall cleaning tool as required.

H. Drilling slurry that has been contaminated by concrete during the tremie operation shall be disposed of as directed by the Owner.

I. Drilling slurries displaced by the concrete shall be pumped into onsite storage tanks and disposed of off-site, unless otherwise directed by the Owner, when no longer needed.

6.12.7. Perform concrete testing in accordance with the Concrete Testing section.

6.13. CHECKING COMPLETED PIERS

6.13.1. If the engineer has reason to suspect that the concrete was breached by the tremie, or that the pier, for any other reason, may contain extraneous material or otherwise fail the specifications, he may order the pier cored for inspection and/or testing. If the core recovery and/or test results indicate non-compliance with the specifications, the Contractor shall bear the expense of the investigation and/or testing and shall also, at no cost to the Owner, install proper additional construction as required by the Owner. Should the investigation and/or testing indicate compliance with the specifications, the Owner shall bear the cost of such investigation and/or testing.

6.14. REPORTS

6.14.1. A record of each drilled shaft installed shall be made by the Contractor as the activities are being performed and will be the official log for the Contract and shall contain, at a minimum, the following:

A. Location and number of drilled shaft.

B. Driller/Contractor names.

C. Drilling method/equipment used.

D. Elevations of the following:

1. Ground surface.

2. Top and bottom of casing.

3. Water or drilling slurry in casing prior to concrete placement.

E. Concrete placement method.

F. Date and time drilled.

G. Date and time inspected and approved.

H. Date and time concrete placed.

I. Date and time final survey data attained.

J. Hole diameter.

K. Diameter and wall thickness of casing.

L. Size, length, and position of reinforcing steel.

M. Plumbness of shaft.

N. Total volume of concrete and volume of concrete placed compared to theoretical concrete volume versus depth.

O. Concrete slump and strength.

P. Groundwater level and soils encountered during drilling.

Q. Sequential installation log including description of any problems or delays.

R. Top and bottom elevations of obstructions encountered.

S. Drilling slurry test results, if applicable.

T. Other relevant information.

6.15. ACCEPTANCE

6.15.1. The Engineer will determine final acceptance of each drilled shaft based on the test results and analysis for the tested shafts and a review of the visual inspection reports for the subject drilled shaft, and will provide a response to the Contractor within three working days after receiving the test results and analysis submitted.

6.15.2. If the Engineer determines that the concrete for a given drilled shaft is structurally inadequate, the drilled shaft will be rejected, and placement of concrete shall be suspended until the Contractor submits to the Engineer written changes to the methods of drilled shaft construction needed to prevent future structurally inadequate drilled shafts, and receives the Engineer's written approval of the submittal.

6.15.3. If the Engineer determines that additional investigation is necessary, or if the Contractor requests, the Engineer may direct additional testing be performed.

A. At the Engineer's request, the Contractor shall drill a core hole in any drilled shaft of questionable quality.

B. The number, locations, diameter, and depth of the core holes and the lengths of the core runs shall be determined by the Engineer.

C. Coring procedures shall minimize abrasion and erosion of the core samples, and avoid damage to the steel reinforcement.

D. Descriptions of inclusions and voids in cored holes shall be logged and a copy of the log shall be submitted to the Engineer.

E. Recovered core shall be preserved in suitably labeled wood core boxes, identified as to location and depth, and made available to the Engineer for review.

F. The Engineer may direct water pressure testing in the core holes, and/or unconfined compression testing or other laboratory testing on selected samples from the concrete core.

7. STEEL AND EQUIPMENT ERECTION

7.1. HANDLING, STORAGE, AND PROTECTION

7.1.1. Store all materials on platforms, skids, or other supports for protection against water, mud, or other deleterious materials on ground.

7.1.2. Clean surfaces of structural steel shapes and plates contaminated with earth, mud, or other foreign elements during storage prior to erection.

7.1.3. Handle in a manner to minimize damage of primer or steel shapes.

7.2. QUALITY CONTROL

7.2.1. The erector is solely responsible for the quality control of all the erector-supplied materials, installations, and workmanship.

7.2.2. Provide a written Quality Control Program and Inspection Procedures document indicating how compliance with the requirements of this Practice and the shop and erection drawings will be achieved. Maintain a complete up-to-date set of erection drawings at the jobsite.

7.2.3. Provide all inspection tools and inspection access facilities such as platforms, ladders, and scaffolds (per ANSI/ASSE A10.8) as requested by the Owner's inspector.

7.2.4. Maintain and make available inspection tools and tool calibration records for examination by the Owner's inspector.

7.2.5. Inspector Responsibilities

A. Inspect all materials, installations, and workmanship of the erector to ensure conformance with all requirements of this Practice and the contract documents.

B. The inspector may inspect all materials, installations, and workmanship supplied by the erector and has unrestricted right of access to the erector's work areas.

C. Reject any improper, inferior, defective, or unsuitable materials, installations, and workmanship of the erector. Repair or replace any rejected materials, installations, and workmanship by the erector in accordance with the Owner's instructions at no cost to the Owner.

7.3. PERFORMANCE REQUIREMENTS

7.3.1. Safety Program

A. Address the safety measures that the erector will use during steel erection work. Comply with the requirements of the contract documents; AISC Steel Construction Manual; AISC Code of Standard Practice for Steel Buildings and Bridges; applicable portions of OSHA 29 CFR Part 1910 and Part 1926; and any other applicable federal, state, or local requirements.

B. Provide a detailed description of how the erector will prevent injury to all personnel affected by the erector's operations. Include an effective system for initial orientation and education in safety and accident prevention, as well as appropriate records to document compliance.

C. Minimum Requirements

1. Fall prevention

2. Ground-level preassembly to minimize elevated erection

3. Hole covers and opening barriers
4. Access control to incomplete areas of erection
5. Lifting plans and hoisting procedures

7.3.2. Assembly Lift Plan

A. The erector is responsible for assuring that all pre-assemblies that are not specifically shown or noted on the design drawings to be pre-assembled before lifting will maintain structural integrity during lifting.

B. Prepare a written assembly lift plan for assemblies larger than 50 feet in one direction, larger than 2,000 square feet in the plan area, greater than 50 tons, or when required by the contract documents. Demonstrate that the proposed lift will be performed safely and that the assemblies being lifted will remain free from distortion or undue bending, and will maintain structural integrity during the lift.

C. The lift plan shall contain:

1. Detailed data on the extent and weight of the lifted assembly
2. Structural calculations that prove structural stability of the assembled components during lifting operations
3. Verification of the capacity capabilities for any cranes utilized in the lift
4. Location and positioning of the cranes and a description of the rigging to be utilized

D. All assembly lift plans shall be stamped by a qualified Professional Engineer licensed to practice at the project location.

E. Review of the assembly lift plan by the Engineer does not relieve the erector of responsibility required for the safe erection and/or lifting of any component, structural assembly, or any other item under the control of the erector.

7.4. ERECTION

7.4.1. Comply with requirements of OSHA 29 CFR Part 1926.

7.4.2. Erection includes correction of minor misfits and a reasonable amount of reaming and cutting. Report immediately and obtain approval for any method of correction prior to correcting error in shop work which prevents proper assembly and fit-up of parts by moderate use of drift pins, reaming, or cutting.

7.4.3. Before commencing work, the erector must check foundations and other connection points to confirm their location, orientation, elevation, and condition.

7.4.4. Report any circumstances that affect progression, performance, or completion of the erector's work activities such as discrepancies between the erection/shop drawings and the delivered steel members, incorrectly fabricated steel members, or incomplete or unacceptable work of other contractors affecting the erector's work to the Owner in writing.

7.4.5. Report any damage caused during erection to the Owner. Complete corrective measures as directed by the Owner at no cost to the Owner.

7.4.6. Provide holes by punching or drilling.

7.4.7. Determine and provide safe temporary shoring and bracing to support construction loads on work, including construction equipment and operation of such equipment.

7.4.8. Exercise precautions to protect and to avoid overload of finished concrete surfaces and/or adjacent work from damage. Store steel members on pads of timber or other cushioning material.

7.4.9. Unless specified otherwise herein or on Drawings, comply with tolerances of AISC Code of Standard Practice, except use Section 5.23 of AWS D1.1 for welded steel members.

A. Column Base Plates: Set and level at specified elevations within tolerance of 1/16 inch.

B. Column Splices: Gap between column milled surfaces of 1/32 inch or less. Pack gaps between 1/32 and 1/4 inch with non-tapered mild steel shims.

7.4.10. Keep loose timbers, metal sheeting, bolt buckets, tools, debris, and temporary scaffolding restrained or removed from work areas. Secure all equipment and materials within the erector's care, custody, and control during the erection operation.

7.4.11. Maintain the job site in a clean and safe condition at all times and properly dispose of, off the premises, all crating, waste materials, and other refuse that has accumulated as a result of the erector's activities under this Practice.

7.4.12. Lift painted structural members with a nonabrasive choker.

7.4.13. Keep a daily record, by piece number, of all material erected.

7.4.14. Plumb, level, and brace the structure before any final bolted connections are made.

7.4.15. Setting Base Plates

A. Clean the top of bearing surfaces and the bottom of base plates. Set and shim column base plates to correct positions, elevations, and locations as shown on the erection drawings. Provide shims or wedges if required. If setting nuts are used, loosen before grouting.

B. Grout of base plates in accordance with the Concrete Section of this specification – Grout for Structure Foundations and other contract documents if this work is included in the erector's contract.

7.4.16. Setting of Direct Embed Structures

A. Contractor shall install the poles by use of an auger having a drill with a minimum diameter of 18 inches larger than the butt diameter of the pole.

B. 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.

C. 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.

D. The auguered hole shall be backfilled with FDOT #57 crushed stone backfill. The fill material shall be continuously compacted from the bottom of the hole to the ground line using multiple Long Stemmed Vibrators

7.4.17. Correction of Errors

A. Avoid the use of fit-up bolts and drift pins to bring improperly fabricated members and parts into place (springing). Limit driving of drift pins with such a force as to injure adjacent metal areas.

B. When approved by the Engineer, the erector may enlarge standard holes by 1/16 inch when necessary to make connections resulting from minor misfit. Correct holes in connections that misfit by more than 1/16 inch as directed by the Engineer.

C. Enlarge holes by reaming or drilling only. Flame cutting, burning, gouging, chipping, or drift punching is not permitted.

D. Packing, shimming, filling, or wedging to correct faulty work is not permitted unless approved by the engineer of record.

E. One filler plate up to 1/8-inch thickness may be used as required in spaces between members to be bolted. The Engineer's approval is required for filler plate requirements greater than 1/8 inch.

8. CONCRETE PAVEMENT, CURBS, AND SIDEWALKS

8.1. SUBMITTALS

8.1.1. Mix design for each strength and type of concrete prior to concrete placement. Furnish a complete list of materials including type, brand, source, and amount of cement, fly ash, pozzolan, admixtures, and applicable reference specifications.

8.1.2. Documentation in the form of manufacturer's catalog data describing joint filler, admixtures, curing compounds, fiber reinforcement, and aggregate.

8.2. MATERIALS

8.2.1. Concrete: Concrete shall conform to Subsection 'Concrete' within this Section.

8.2.2. Geotextiles: Geotextiles shall conform to Subsection 'Earthwork' within this Section.

8.3. PLACEMENT

8.3.1. Base Course

A. Provide line and grade stakes for control. Place grade stakes in lanes parallel to centerline of areas to be paved and space for string lining or other control methods.

B. Clean underlying surface of foreign substances and ensure proper compaction and smoothness before placement of course.

C. Recondition, reshape, and recompact areas damaged by freezing, rainfall, or other weather conditions.

D. Mix and place materials to obtain a uniform course.

E. Construct course in one or more layers between 3 and 8 inches in compacted thickness.

F. Compact placed aggregate materials to achieve 98 percent of the maximum density per AASHTO T 180.

G. Compact material inaccessible to rolling equipment by mechanical tamping.

H. Finish surface of the layer by blading and rolling.

I. Blade, roll, and tamp until surface is smooth and free from waves and irregularities.

J. Aerate material excessively moistened by rain during construction.

K. Aerate using blade graders, harrows, or other equipment until the moisture content is that needed to obtain specified density.

L. Place and compact earth at edges of course for at least one foot of the shoulder.

M. Construct course when atmospheric temperature is above 35 degrees F and when weather conditions do not detrimentally affect quality of finished course.

N. When temperature falls below 35 degrees F, protect areas of completed course against freezing.

8.3.2. Preparation

A. Moisten base to minimize absorption of water from fresh concrete

B. Coat surface of catch basins with non-staining mineral oil to prevent bond with concrete.

C. Maintain drainage ditches, gutters, and side drains to drain the subbase during construction.

D. Install Geotextiles as shown on Drawings.

8.3.3. Forms

A. Place and secure forms to correct location, dimension, and profile.

B. Variations:

1. Top face of form: 1/8 inch in 10 feet
2. Lateral: less than 1/4 inch in 10 feet

C. Use forms sufficiently strong to resist pressure of concrete and loads resulting from finishing operations without springing, settling, or losing their shape.

D. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

E. Before placing the concrete, coat the contact surfaces of forms with a non-staining mineral oil, non-staining form coating compound, or two coats of nitro-cellulose lacquer.

F. Check and correct grade elevations and alignment of the forms immediately before placing the concrete.

G. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

H. Clean forms before reuse.

8.3.4. Reinforcement

A. Reinforcement, when placed in concrete, is to be free of mud, oil, scale, or other foreign materials.

B. Reinforcement placing: ACI 301.

C. Interrupt reinforcement at expansion joints.

D. Remove all burrs or projections from the dowel bars.

E. Place dowels or reinforcement to achieve pavement and curb alignment as detailed.

8.3.5. Concrete

A. Concrete installation shall conform to Subsection 'Concrete' within this Specification.

8.3.6. Joints:

A. Place expansion joints as required. Align curb, gutter, and sidewalk joints.

B. Place joint filler between pavement components and building or other appurtenances. Recess top of filler 1/4 inch for sealant placement.

C. Seal joints.

D. Provide sawn joints at 5 foot intervals between curbs and pavement. Saw cut joints 3/16 inch wide 1/3 depth of slab.

8.3.7. Finishing:

A. After surface irregularities have been removed, give the concrete surface a uniformly roughened finish by use of a wire comb or other approved texturing device similar to a wire comb.

B. For median barriers use light broom for finishing. Trowel joint edges.

C. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

8.3.8. Edging:

A. At the time the concrete has attained a degree of hardness suitable for edging, carefully finish slab edges, including edges at formed joints, with an edge having a maximum radius of 1/8 inch.

9. SITE SURFACING

9.1. SYSTEM DESCRIPTION

9.1.1. Refer to the Drawings for the substation surfacing. This section covers asphalt paving and aggregate surfacing. Refer to the Cellular Confinement for Gravel Access Drive section for the gravel access drive description. Refer to the Concrete Pavement, curbs, and sidewalks section for the concrete pavement, curb, and sidewalk description. Refer to the Landscaping section for the permanent and temporary seeding and plant mulch description.

9.2. SUBMITTALS

9.2.1. Provide job-mix formula for all mix types proposed for use on the project. Indicate physical properties of the mix in formulas as shown by tests made by a commercial laboratory approved by the Owner, using materials identical to those to be provided on this project. Furnish a complete list of materials including type, brand, source, quantities of asphalt and aggregate and applicable reference specifications. No changes in the job-mix formula shall be permitted until modified in writing by the Contractor and approved by the Owner. Provide a new job-mix formula for each source change. Job-mix formulas shall include the following:

A. Source and proportions, percent by weight, of each ingredient of the mixture.

B. Correct gradation, the percentages passing each size sieve listed in the specifications for the mixture to be used, for the aggregate and mineral filler from each separate source and from each different size to be used in the mixture and for the composite mixture.

C. Amount of material passing the No. 200 sieve determined by dry sieving.

D. Number of blows of hammer compaction per side of molded specimen.

E. Temperature – viscosity relationship of the asphalt cement.

F. Stability, flow, percent voids in mineral aggregate, percent air voids, unit weight.

G. Asphalt absorption by the aggregate.

H. Effective asphalt content as percent by weight of total mix.

I. Temperature of the mixture immediately upon completion of mixing.

J. Asphalt viscosity grade and/or penetration range.

K. Curves for the wearing courses.

9.2.2. Certificates signed by manufacturers certifying, that paving materials and incidental construction items comply with specification requirements.

9.2.3. Provide aggregate data report including particle size analysis, aggregate color, type, and size.

9.2.4. Manufacturer and product data for geotextiles.

9.2.5. Manufacturer and product data for geogrid.

9.3. MATERIALS

9.3.1. Asphalt Paving:

A. All workmanship, materials, equipment and plant shall be in accordance with the applicable sections of the Florida DOT Standard Specifications for Road and Bridge Construction, Latest Edition, and referred to hereinafter as Standard Specifications.

B. Asphaltic concrete surface shall be SP12.5 asphalt in accordance with Section 334 of the Standard Specifications and as indicated on the Drawings.

1. The asphalt supplier shall be a member of the Asphalt Institute.

C. Prime coat shall be in accordance with the FDOT Standard Specifications for Road and Bridge Construction.

D. Tack coat shall be in accordance with the FDOT Standard Specifications for Road and Bridge Construction.

E. Base course shall consist of an 8-inch thick layer of compacted limerock in accordance with the Standard Specifications and as indicated on the Drawings.

1. Consist of hard, tough, durable, uncoated particles, free of organic matter, clay, or weak, flat, elongated, or decomposed material.

2. Aggregates produced from acid-forming or toxic-forming rock or slag are not acceptable.

F. Geotextile shall be Propex Geotex 2x2HF geotextile (or Engineer approved equal), as indicated on the Drawings.

9.3.2. Aggregate Surfacing:

A. Aggregate surfacing shall be No. 5 blue/gray limestone (natural), as noted on the Drawings, and in accordance with AASHTO M 43 or ASTM D 448 **(Note: Size #57 is not acceptable)**.

1. Aggregate shall be durable and sound gravel or crushed stone, free of lumps or balls of clay or other objectionable matter; and uniform color.

2. Prevent segregation and contamination of aggregate materials during delivery to site and during construction activities.

3. Store sufficient aggregate at the site at all times to permit continuous, uninterrupted aggregate placement.

4. Obtain aggregate from the same source throughout the project.

A representative list of suppliers:

Company	Location	Telephone
Conrad Yelvington	Daytona Beach, FL	(904) 767-5500
Conrad Yelvington	Jacksonville, FL	(904) 358-6740
Vulcan Materials	Birmingham, AL	(205) 877-3086

B. Geogrid shall be Tensar BX-1100 (or Engineer approved equal), as indicated on the Drawings.

C. Geotextile shall be Mirafi 140N (or Engineer approved equal), as indicated on the Drawings.

D. Subbase shall consist of a 4-inch thick compacted layer of A-3 sand in accordance with AASHTO M-145 with less than 5% fines stabilized to LBR 40, and as indicated on the Drawings.

9.4. INSTALLATION

9.4.1. Asphalt Paving:

A. Muck Removal: Muck or other unsuitable material shall be removed and the excavated area backfilled in accordance with the applicable requirements included in the Earthwork section of this Specification.

B. Stabilization: The top 12 inches of the subgrade shall be stabilized (Type B) to a Limerock Bearing Ratio (LBR) of 40 in accordance with Section 160 of the Standard Specifications. The stabilized area shall be compacted to 98% of the maximum density as determined by AASHTO T 180.

C. Base Course: Limerock base course shall be constructed in accordance with Section 200 of the FDOT Standard Specifications for Road and Bridge Construction, stabilized to a minimum LBR of 100, and compacted to 100% of the maximum density as determined by AASHTO T 180. Note that, as an alternative to the typical limerock base used.

1. Provide line and grade stakes for control. Place grade stakes in lanes parallel to centerline of areas to be paved and space for string lining or other control methods.

2. Recondition, reshape, and recompact areas damaged by freezing, rainfall, or other weather conditions. Place materials to obtain uniform course.

3. Compact material inaccessible to rolling equipment by mechanical tamping.

4. Finish surface of the layer by blading and rolling.
5. Place and compact earth at edges of course for at least one foot outside of shoulder.
6. Where average base course thickness is deficient by more than ½ inch, make corrections by scarifying, adding mixture of proper gradation, reblading and recompacting.

D. Prime Coat: Materials and method of application for the prime coat shall conform to Section 300 of the FDOT Standard Specifications for Road and Bridge Construction.

1. Apply the prime coat uniformly over the surface of prepared and compacted subgrade or base, and allow it to cure at least 24 hours before laying new asphalt paving.
2. Apply the prime coat with suitable hand sprayers or truck-mounted spray bars. The application rate is typically 0.15 gallon to 0.40 gallon per square yard of surface.
3. If the asphalt is not entirely absorbed into the material by the base course within 24 hours, blot excess asphalt with sand.
4. Repair damaged prime coat immediately.

E. Tack Coat: Materials and method of application for the tack coat shall conform to Section 300 of the FDOT Standard Specifications for Road and Bridge Construction.

1. Apply the tack coat sufficiently in advance of the placement of the hot-mix asphalt mixture to permit volatiles to evaporate from the asphalt cement, but not so far in advance that the tack coat becomes covered with dust or other foreign substances.
2. Apply the tack coat with suitable hand sprayers or truck-mounted spray bars. The application rate is typically 0.02 gallon to 0.08 gallon per square yard of surface.

F. Asphaltic Concrete Surface: The surface course shall be Type SP12.5 asphaltic concrete in accordance with the Section 334 of the FDOT Standard Specifications for Road and Bridge Construction.

1. Remove any deleterious debris from the prime coat or tack coat before hot-mix asphalt is applied.
2. Allow the prime coat to cure at least 24 hours before placing new asphalt paving.
3. Place asphalt paving to appropriate compacted thickness as indicated on the Drawings.
4. Compact paving by rolling. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
5. Place hot-mixed asphalt on an approved roadbed and spread with a self-propelled paving machine that is capable of spreading and finishing the mixture to the required width and thickness; true to line, grade, and cross section. Use paving machine capable of providing a smoothly struck finish with uniform density and texture, without the need for an undue amount of back dressing to correct irregularities.
6. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes, unless otherwise indicated.
7. Place paving in strips for the full width of the lane, except where infill edge strips of a lesser width are required.
8. Regulate speed of mechanical spreader to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
9. Place a sufficient amount of material to achieve thickness after compacting.
10. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete asphalt base course for a section before placing asphalt surface course.
11. Promptly correct surface irregularities in paving course behind mechanical spreader. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

12. Place asphalt paving layer as continuously as possible to keep the number of joints between old and new pavements, between successive day's work, and when the mixture has become cold (less than minimum allowable temperature per Standard Specifications) to a minimum. Construct joints in such a manner as to create a continuous bond between the old and new pavement construction courses. If the placing of material is discontinued or if material in place becomes cold, construct a joint running perpendicular to the direction traveled by the paving machine. Before placement continues, trim the edge of the previously placed pavement to a straight line perpendicular to the direction traveled by the paving machine and cut back to expose an even vertical surface for the full thickness of the course. When placement continues, position the paving machine on the transverse joint so that sufficient hot mixture will be spread to create a joint after rolling that conforms to the required smoothness. Coat joints that are not completed before the previously laid mixture has cooled to a temperature less than the minimum allowable per Standard Specifications, with liquid asphalt just before paving is continued.
13. After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
14. Testing of asphalt concrete materials and compaction shall be in accordance with the FDOT Standard Specifications for Road and Bridge Construction.

G. Propex Geotex 2x2HF geotextile shall be installed without wrinkles, per the manufacturer's recommendations, and as indicated on the Drawings.

H. Plant, Methods and Equipment: The plant and methods of operations for preparing all plant-mixed hot bituminous mixtures for surface courses and bases, and the requirements for the equipment to be used in the construction of the pavements and bases shall be in accordance with Section 320 of the FDOT Standard Specifications for Road and Bridge Construction.

I. General Construction Requirements: The general construction requirements for all plant-mixed hot bituminous pavements and bases shall be in accordance with Section 330 of the FDOT Standard Specifications for Road and Bridge Construction.

J. The stabilized subgrade shall be tested for density and LBR, and the base course tested for density at approximately 200 foot intervals. Density tests may be performed using AASHTO T 191 or ASTM D 2922. The Contractor shall employ, at his expense, an independent testing laboratory to do all the testing for pavement.

9.4.2. Aggregate Surfacing:

A. Place aggregate surfacing in maximum 8-inch loose lifts and determine compaction on basis of non-movement of material after at least three passes with vibratory plate compactor weighing at least 250 pounds and in accordance with ASTM D 6913 and ASTM D 448.

B. Compacted subbase A-3 sand layer shall be stabilized to LBR 40 and compacted to 98% maximum density per AASHTO T 180.

C. Verify subgrade has been inspected, grades and elevations are correct, and surface is not wet or muddy.

D. Provide line and grade stakes for control.

E. Clean underlying surface of foreign substances and ensure proper compaction and smoothness before aggregate placement.

F. Place materials to obtain a uniform course.

G. Finish surface of the layer by blading and/or rolling to provide a uniform surface within +/- 0.05 feet of design grades as indicated on the Drawings.

H. Construct aggregate when weather conditions are such that are not to detrimentally affect the quality of finished course.

I. Verify that materials have been placed as specified to the lines and grades shown on the Drawings.

J. Tensar BX-1100 geogrid shall be installed per manufacturer's recommendations and as indicated on the Drawings.

K. Mirafi 140N geotextile shall be installed without wrinkles, per the manufacturer's recommendations, and as indicated on the Drawings.

10. LANDSCAPING

10.1. MATERIALS

10.1.1. Permanent Seeding

A. Permanent seeding shall be a mixture of 20 parts of hulled Bermuda seed and 80 parts Argentina Bahia seed thoroughly dry mixed immediately before sowing.

B. During the period of October 15 to February 15 rye grass seed shall be added and thoroughly dry mixed with the regular mixture at a rate of 20 pounds of rye per 100 pounds of regular seed mixture.

C. Fertilizer shall be 8-8-8, fifty (50) percent organic.

10.1.2. Temporary Seeding

A. Temporary seeding mixtures shall be per the City of Jacksonville Standard Drawings Plates D-915, "Temporary Seeding Plant Materials" and D-916, "Seeding Mixtures, Rates and Dates." Seed mixture shall be based on the recommended planting dates.

10.1.3. Plants

A. All plant material shall be "Florida No. 1" as described in the latest edition of "Grades and Standards for Nursery Plants", Parts I and II, by the Florida Department of Agriculture and Consumer Services. Any material not meeting specifications shall be removed and replaced at Contractor's expense.

10.1.4. Plant Mulch

A. Plant Beds: Wood cellulose fiber: Specially prepared, biodegradable, air-dried wood fibers manufactured from 100% wood chips or bark from lumber mill processing operations tinted with nontoxic dye and containing an organic tackifier approved for use with wood fibers meeting the following requirements:

- Moisture content: 15% Maximum
- Organic matter (Oven-dried basis): 95% Minimum
- Water holding capacity, 1,000 Minimum (Grams of water per 100 grams of fiber):
- Tackifier content: (By weight): 2.5% to 3.5%

10.2. INSTALLATION

10.2.1. Permanent Seeding

A. Install permanent seeding in accordance with the City of Jacksonville's City Standard Specifications for the City of Jacksonville, Florida Department of Public Works and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual.

B. Install permanent seeding upon completion of all below grade construction and grading activities. Disturbed areas that are to be stabilized with permanent vegetation must be seeded or planted within 15 days after final grade is reach, unless temporary stabilization is applied.

C. The Contractor shall be responsible for ensuring that the seed bed has the proper nutrients to support the vegetation.

D. The maximum seeding depth shall be ¼ inch.

E. The rate of spreading shall be five (5) pounds per 1,000 square feet.

F. Fertilizer shall be applied at the rate of 20 pounds per 1,000 square feet.

G. Immediately after seeding, Dry Mulch shall be uniformly applied over the seeded area in accordance with the City of Jacksonville's City Standard Specifications for the City of Jacksonville, Florida Department of Public Works and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual.

H. A stand of vegetation is not considered established until it has been maintained for one full year.

10.2.2. Temporary Seeding

A. Install temporary seeding in accordance with the City of Jacksonville's City Standard Specifications for the City of Jacksonville, Florida Department of Public Works and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual.

B. The Contractor shall be responsible for ensuring that the seed bed has the proper nutrients to support the vegetation.

C. Install temporary seeding in areas that will not be under active construction for longer than 7 days.

D. Temporary seeding rates shall be per the mixture selected from the City of Jacksonville Standard Drawings Plates D-915, "Temporary Seeding Plant Materials" and D-916, "Seeding Mixtures, Rates and Dates."

E. Immediately after seeding, Dry Mulch may be uniformly applied over the seeded area. Mulching temporary seeding is dependent upon the time of seeding, favorability of soil and site conditions, and protection requirements. The Contractor is responsible for determining whether mulching is appropriate. Mulching shall be applied in accordance with the City of Jacksonville's City Standard Specifications for the City of Jacksonville, Florida Department of Public Works and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual.

10.2.3. Grading of Plant Beds

A. The Landscape Contractor shall be responsible for holding fine grading of planting areas to insure at least 3% positive drainage away from buildings and into turf areas, ponds, streets, or other drainage ways. Turf and planting beds shall meet sidewalks and flatwork at two (2") inches below the flatwork.

10.2.4. Bed Preparation and Planting

A. Loosen soil to a minimum depth of four (4") inches and remove all debris. Regrade the bed to its pre-planting subgrade. Spread approved fabric-type weed barrier over all shrub beds, if required. Dig planting pits at 2 times the diameter of the pot. Fill plant pit and compact so that the top of the root ball will settle 1/8 depth of root ball above finish grade. Set plant and fill remainder of hole with planting mix.

B. Fertilize each plant and water in thoroughly.

10.2.5. Plant Mulching

A. Mulch shall be provided a minimum of three (3") inches in depth within plant beds.

B. Mulch is to be uniformly spread by hand or by approved mechanical spreaders or blowers so to provide an acceptable application.

10.3. MAINTENANCE

10.3.1. The Contractor shall, at his expense, maintain the vegetated areas in a satisfactory condition until final acceptance of the project. The Contractor shall achieve "final stabilization" which occurs when all soil disturbing activities at the site have been completed, and that a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% for all unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been employed.

10.3.2. Work Included:

A. Watering, weeding, cultivating, spraying and mowing necessary to keep the grassed areas in a healthy growing condition and to keep these areas neat and attractive throughout the maintenance period.

B. Provide equipment and means for proper application of water to those areas not equipped with an irrigation system.

C. Filling, leveling and repairing of any washed or eroded areas, as may be necessary.

10.3.3. Replacements:

A. At the end of the maintenance period, all landscaped areas shall be in a healthy growing condition.

B. During the maintenance period, should the appearance of any grass or plants indicate weakness and probability of dying, immediately replace that area of grass or plant without additional cost to the Owner.

C. Replacements required because of vandalism or other causes beyond control of the Contractor shall be paid for by the Owner.

10.4. RESTORATION

The contractor shall, at his expense, restore any vegetative areas damaged during construction to conditions that existed prior to the project. The contractor shall 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.

NORTHSIDE BAY COMPLETION

TECHNICAL SPECIFICATION – ELECTRICAL

REVISION: A

Date: July 03, 2017

PROFESSIONAL ENGINEER	
P.E.	Robert McAlister
LICENSE NO.	72481
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SECTION IX – TECHNICAL SPECIFICATION - ELECTRICAL

1. SWITCHYARD ELECTRICAL EQUIPMENT

1.1. GENERAL

This is a general specification and covers the equipment required for substation construction. Any equipment listed which does not apply to this particular project shall be disregarded. The Drawings shall be used to determine the exact quantity and type of equipment intended for use on this project.

1.2. SCOPE

This Section covers labor, equipment, and material requirements for the installation of the switchyard electrical equipment. The Contractor shall erect in place, test, and leave ready for service, the facilities shown on the Drawings and herein specified. The Contractor shall also have responsibilities for receiving, off-loading, and transporting certain structures, equipment, and miscellaneous materials as called for in this Specification. The Contractor shall furnish and install materials and equipment only as specified or approved by the Project Engineer.

1.3. STANDARDS

The installation covered by these Specifications shall conform to the practices set forth in the latest edition of the National Electrical Code (NEC) and the National Electrical Safety Code (NESC), unless otherwise specified in these Plans and Specifications.

1.4. MATERIALS

1.4.1. All Contractor furnished materials, unless otherwise indicated, shall be new, of the first quality and of the proper type for use intended. When applicable, all material will be in accordance with the latest published NEMA Standards and/or carry the approval of the Underwriter's Laboratories.

1.4.2. The use of a manufacturer's trade name and catalog number is intended to indicate preference. Products of reputable manufacture, equal quality, and functional type may be used only after stamped approval by the Project Engineer.

1.4.3. Owner furnished items, with a general description of the items and their storage location, are listed in the Attachments at the end of this Specification. The Contractor shall coordinate the receiving of the items with the JEA Contract Administrator. It is the Contractor's responsibility, unless otherwise specified, to furnish labor and equipment for loading, for transporting, and for off-loading the items at the job site.

1.4.4. All material and equipment stored on the substation site or other areas including Owner furnished material and equipment, shall be in the care, custody, and control of the Contractor. The Contractor shall be responsible for any necessary repairs or replacement of materials and equipment damaged, lost, or stolen while in the care and custody of the Contractor.

1.5. OUTDOOR SWITCHYARD STRUCTURES

The Contractor shall install all substation structures as indicated on the Drawings. Assembly of the structures shall be in accordance with the Manufacturer’s assembly drawings, unless otherwise specified.

1.5.1. The Owner’s Supplier shall furnish the substation structures as a part of the “Structures and Materials” package. It is the Contractor's responsibility, unless otherwise specified in the Appendix, to furnish labor and equipment for receiving, off-loading, and storing these structures at the job site.

1.5.2. It shall be the Contractor's responsibility to notify the Owner of any damage to the structures and errors in the structure fabrication before and during the installation, so that the Owner may coordinate with the Manufacturer and make good any such damage to the equipment.

1.5.3. Detailed structural assembly drawings may be inspected at the JEA office in Jacksonville, Florida, by contacting the Project Engineer.

1.5.4. The steel structures, as shown on the Drawings, will be furnished by the Owner and are fabricated for bolted field assembly. Mounting holes for equipment have been included in the fabrication of the structures.

1.5.5. The Contractor shall include in the bid and be responsible for the correction of minor errors and minor modifications in the structures in order to provide for a complete installation as indicated on the Drawings.

Corrections shall include but not be limited to the following: reaming misaligned holes, punching new holes, and clipping or punching support angles as required. Approximately 100 punched holes shall be considered minor modifications. All modifications shall be cold galvanized to resist corrosion.

1.5.6. Any equipment mounted on the structures by the Contractor (e.g. AC panels, outlet boxes, etc.) shall be mounted utilizing galvanized or stainless steel materials and hardware. Whenever practical, the Contractor shall mount miscellaneous equipment to the structures using non-penetrating methods such as back-to-back unistrut. All holes drilled to mount such equipment shall be cold galvanized to resist corrosion.

1.5.7. The Contractor shall provide and install a bit-u-mastic coating for the bases of all aluminum structures which come into direct contact with concrete foundations.

1.5.8. The Contractor shall install lighting fixtures mounted on the lightning probe poles and on the takeoff structures complete with conduit, wiring, light fixtures, and switches, in locations as shown on the Drawings. Light fixtures will be furnished by the Owner, as indicated in the Attachments at the end of these Specifications. Conduit, switches, and wiring as specified on the Drawings shall be furnished by the Contractor.

1.5.9. Erection of the lightning probe poles shall be in accordance with the Manufacturer's assembly drawings.

1.5.10. The Contractor shall install perimeter lighting poles complete with anchor bases, arms, conduit, wiring, light fixtures, and photocells in locations as shown on the Drawings. Lighting poles, anchor bases, arms, light fixtures, and photocells will be furnished by the Owner, as indicated in the Attachments at the end of these Specifications.

1.5.11. All substation structures and equipment are stored at the Substation Packager's facility. The Contractor shall plan and make provisions for receiving, unloading, and storing on site all related structures and equipment.

1.5.12. The Contractor shall provide dry storage containers, as required, for all items (including but not limited to cardboard boxes, fragile items, etc.) requiring inside storage until assembly and installation by the Contractor. Tarps and/or covers placed on top of the material and stored outdoors do not qualify as dry storage in this Contract.

1.6. CIRCUIT BREAKERS

The Contractor shall be responsible for either transporting the circuit breakers to the substation site from their storage location at an arbitrary location within Duval County, Florida, or receiving all circuit breakers directly from the Manufacturer at the job site at the discretion of JEA.

1.6.1. The following tasks must be performed if the breakers are being shipped directly to the job site:

A. The Contractor may assume that the Owner's Manufacturer shall have the breakers available for shipping in time to meet the scheduled circuit breaker shipping dates which are shown in the Project Schedule in the Attachments of these Specifications.

B. As the project progresses, the Contractor shall notify the Project Engineer in writing (or by electronic mail) at least two (2) weeks in advance of the date of the Contractor's readiness for the breakers. This should be at the time of foundation pouring, to assure sufficient time for curing, and should conform to the breaker delivery dates listed in the Project Schedule in the Attachments of these Specifications.

C. The Owner's Manufacturer will then ship the breakers directly to the job site and deliver it on the date specified by the Contractor, +/- five (5) business days.

D. The Contractor shall then have employees and equipment on-site during business hours, throughout this five day window, to off-load the breakers within one (1) hour of the shipper's arrival. The Contractor shall then take responsibility of the breakers, and may choose whether to set the breakers directly onto the pad or to set the breakers in an approved storage area. Approved storage areas shall mean any storage location approved by the JEA Contract Administrator for this specific purpose.

E. The Contractor shall be responsible to ground the circuit breakers (including each high-voltage bushing) immediately upon arrival at the job site. This may be done by means of a temporary attachment to the ground grid, when approved by the JEA Contract Administrator. The Contractor shall also run temporary AC power to the heater in the control panel of each breaker.

1.6.2. The Contractor shall be responsible for some minor assembly of the breakers at the job site. This assembly, which shall be supervised by JEA personnel, shall include assembly of supports, attachments of control panel doors, etc. The Owner shall supply the Contractor with one (1) copy of the Manufacturer's assembly instructions. The Contractor shall closely follow these instructions.

1.6.3. The Owner, the Equipment Manufacturer's Contractor, or representative acting as an agent for the Owner, will furnish and operate the filtering equipment, vacuum drying equipment or SF-6 gas handling equipment, and provide the insulating oil or SF-6 gas. The Owner will be responsible for filling and final adjustment of the circuit breakers.

1.6.4. The Contractor shall be responsible for the placement of the circuit breakers on the foundations. The Contractor shall install the circuit breakers such that the lowest point of any energized parts is not less than the appropriate above grade clearance for personnel safety (NESC) above the foundation elevation.

1.6.5. Connections to the circuit breakers, by means of bus or conductor, will be the responsibility of the Contractor.

1.6.6. The foundation, conduit, control and power cabling, grounding, and associated work will be the responsibility of the Contractor.

1.6.7. All associated primary wiring, secondary wiring, and control wiring, and grounding connections shall be installed by the Contractor in accordance with the Manufacturer's assembly instructions, unless directed otherwise on the construction drawings.

1.7. INSULATORS, BUSWORK, & CONNECTORS

1.7.1. The station type insulators, bus, conductor, and connectors shall be furnished by the Owner's Supplier as listed in the Bill of Materials as a part of the "Structures and Materials" package and installed by the Contractor in accordance with the Manufacturer's assembly instructions. The Contractor shall receive, off-load, and store this equipment in the same manner as described for the "Structures and Materials" package, unless otherwise directed. That includes providing dry storage for the material, boxes, crates, cartons, etc. not suited for outdoor storage.

1.7.2. The Contractor shall install station type insulators, bus, conductor, and connectors as indicated on the Drawings.

1.7.3. Any chipped or damaged insulators shall be brought to the Owner's attention prior to installation. The Contractor shall repair minor insulator damage after review of the damage and approval of the Contractor's proposed repair process is made by the Project Engineer.

1.7.4. The minimum clearance between bus and overhead conductors of different phases and from conductors to ground shall be as indicated on the Drawings. Where not specifically indicated, the minimum clearances shall be as per ANSI and IEEE requirements.

1.7.5. The Contractor shall install all bus, conductors, and connectors as indicated on the Drawings. All items on the substation structures, including hardware, will be furnished by the Owner's Supplier unless noted otherwise on the Bill of Materials or on the Drawings.

1.7.6. The welding of aluminum bus shall adhere to the following requirements:

A. The welding process and all welding operators shall be qualified in accordance with the Aluminum Association Aluminum Construction Manual, "Specifications for Aluminum Structures", Section 7/2/4 (Qualification of Welding Procedure and Welding Operators).

B. All joints to be welded shall be free of moisture and hydrocarbons. Degreasing shall be done with a non-toxic solvent. Sufficient time must be allowed for the evaporation of the solvent prior to welding. Wire brushing with a stainless steel wire brush should be employed after solvent cleaning to remove all oxide films, water stains, etc.

C. All aluminum welds shall be by the gas metal-arc (MIG) or the gas tungsten-arc (TIG) welding process.

D. The working area should be substantially draft-free and protected from atmospheric contamination.

E. All welds shall be made with clean metal and the completed weld shall have a smooth finish and shall indicate good fusion with the parent metal.

F. All connections shall be checked for the proper edge penetration and alignment before, during, and after the weld is made. The cross sectional area of the weld should not be less than that of the smallest member being joined.

G. To repair a defective weld, the defective portion must be entirely removed. The area to be repaired should be re-cleaned as described herein and the weld made in a manner similar to the original.

H. Tackwelding should be used to prevent misalignment of the members being joined during the welding process.

1.7.7. Tinned connectors shall be installed when a copper to aluminum connection is made. The tinned connectors shall be furnished by the Owner.

1.8. INSTRUMENT TRANSFORMERS & LIGHTNING ARRESTERS

1.8.1. The instrument transformers and lightning arresters will be furnished by the Owner's Supplier as a part of the "Structures and Materials" package. The Contractor shall receive, off-load, and store these materials in the same manner as described for the "Structures and Materials" package, unless otherwise directed.

1.8.2. The Contractor shall install outdoor instrument transformers as indicated on the Drawings. All wiring shall be as listed in the Cable Schedule and Conduit Schedule.

1.8.3. The Owner will furnish, operate, and supervise the filtering equipment and oil for the instrument transformers as required.

1.8.4. The Contractor shall install lightning arresters as indicated on the Drawings.

1.8.5. All associated primary wiring, secondary wiring, instrument and control wiring, and grounding connections shall be installed by the Contractor in accordance with the Manufacturer's instructions, unless stated otherwise in the Drawings.

1.8.6. Tinned connectors shall be installed when a copper to aluminum connection is made. The tinned connectors shall be furnished by the Owner.

1.9. STATION SERVICE, AUTOMATIC TRANSFER SWITCH, & ELECTRICAL PANELS

1.9.1. The Contractor shall be responsible for transporting and installing the Owner furnished distribution type transformers in the locations as shown on the Drawings. The transformers are located at the JEA Commonwealth Service Center and will be taken out of stock. JEA will furnish and the Contractor shall install the medium voltage station service transformers.

1.9.2. Less than 600V low voltage class transformers are not normally stocked by JEA. These transformers shall be furnished and installed by the Contractor as shown on the Drawings.

1.9.3. The Contractor shall be responsible for transporting and installing the automatic transfer switch if specified on the Station Service Drawing. The transfer switch shall be ASCO Type 7000 and be furnished by the Owner complete with a NEMA 3R enclosure. The Contractor shall furnish and install galvanized unistrut channels and stainless steel mounting hardware as required to mount the transfer switch to the structure mounting brackets.

1.9.4. The Contractor shall furnish and install all new AC electrical panels on the load side of the automatic transfer switch as shown on the Drawings, unless directed otherwise. The Contractor shall also furnish and install the internal circuit breakers, ground bus, and associated hardware (as required) to complete the wiring shown on the panel drawing. The Contractor shall also furnish and install the galvanized unistrut channel and stainless steel mounting hardware as required to mount the panel to the structure mounting brackets.

1.9.5. The Contractor shall be responsible for furnishing the necessary terminals, connectors, etc., to terminate cables at the ATS and splices (as required).

1.9.6. The Contractor shall be responsible for furnishing and installing the switchyard electrical panels, cabinets, and junction boxes. The exact quantity, locations and sizes of the panels, cabinets, and junction boxes shall be as shown on the Drawings. All switchyard AC panels shall be enclosed in stainless steel enclosures.

1.9.7. The AC power panelboards shall be Square D Co. Type NQOD. All panelboards shall be enclosed in a NEMA 3R enclosure and shall also include housings with a lockable cover and/or door.

1.9.8. The Contractor shall be responsible for furnishing and installing the main and branch circuit breakers in all yard panels. The main breakers and branch circuit breakers shall be conventional bolt-on type circuit breakers rated in accordance with the Drawings. The wiring and labeling of each panel breaker shall be as shown on the Drawings and in accordance with other applicable Sections of these Specifications.

1.9.9. The Contractor shall be responsible for securely mounting switchyard electrical panels to the substation structures. Mounting brackets may have been incorporated into the structure design. The Contractor shall furnish and install galvanized unistrut channels and stainless steel mounting hardware as required to mount the electrical panels, cabinets, and junction boxes to the structure mounting brackets. Should any alteration or modification be necessary for the mounting of electrical panels, the Contractor shall submit details of the proposed alteration to the Project Engineer in writing for approval prior to installation.

1.10. SWITCHYARD RELAY BOXES

1.10.1. The Contractor shall be responsible for furnishing and installing the bus differential boxes, potential transformer fuse boxes, terminal blocks, fuse blocks, test switches, and heaters (as specified). The exact quantities, locations, sizes, and types of boxes, blocks, switches, and heaters shall be as shown on the Drawings. The bus differential and PT fuse boxes shall be stainless steel.

1.10.2. The Contractor shall be responsible for securely mounting the switchyard relay boxes to the substation structures. Mounting brackets may have been incorporated into the structure design for most of these boxes. The Contractor shall furnish and install galvanized unistrut channels and stainless steel mounting hardware as required to mount the relay boxes to the structure mounting brackets. Details for mounting and wiring the switchyard relay boxes (if applicable) are included in the Drawings. Should any alteration or modification be necessary for mounting the relay boxes, the Contractor shall submit details of the proposed alteration to the Project Engineer for approval prior to installation.

1.10.3. All above grade conduit to the relay boxes shall be either rigid galvanized steel or UV resistant PVC, Schedule 40. Installation and termination of control and instrument wiring shall be in accordance with the Specifications and Drawings.

2. GROUND GRID & BONDING SYSTEM

2.1. GENERAL

2.1.1. This is a general specification and covers the requirements and procedures for the installation of, or addition to, the station ground grid system. Any material or equipment listed which does not apply to this particular project shall be disregarded. The Drawings shall be referenced for specific requirements concerning the quantity, type, and installation of the material to complete the station ground grid system.

2.1.2. The Contractor shall be responsible for providing the Owner with an accurate "As Built" drawing of the station ground grid (as specified in Section VII).

2.2. SCOPE

This Section covers the labor, equipment, and material requirements for the installation of, or addition to, the station ground grid system. The Contractor shall install the ground gridas shown on the Drawings and herein specified. The Contractor shall also be responsible for the connection of all switchyard electrical equipment, control building electrical equipment, substation structures, fences and gates to the station ground grid system as shown on the Drawings and herein specified.

2.3. MATERIALS

2.3.1. The Contractor shall refer to the Drawings for material requirements to complete the station ground grid system. The Contractor shall furnish materials and equipment only as specified or approved by the Project Engineer.

A. All Contractor furnished materials, unless otherwise specified, shall be new, of first quality and of the proper type for the use intended.

B. The Owner shall furnish above grade structure and equipment grounding connectors, unless otherwise indicated. The above grade structure and equipment grounding connectors will be furnished by the Owner's Supplier as a part of the "Structures and Materials" package. The Contractor shall receive, off-load, and store these items in the same manner as described for the "Structures and Materials" package. The Contractor shall furnish the below and above grade ground grid conductor; below grade connectors; the equipment, structures, manhole, and fence grounding conductor; and all fence grounding connectors.

2.4. GROUND GRID

2.4.1. The Contractor shall furnish the required amount of 19#8 and 7#5 Copperweld conductor and the 500MCM copper conductor for the ground grid, unless otherwise specified. The Contractor shall purchase the grounding material which meets or exceeds JEA material requirements. The 19#8 conductor (JEA #COBCW015) shall be Copperweld, 19-strand #8, 0.643" diameter, 40% conductivity as per ASTM B-227 and B-228, high strength - rated 27,548 lbs. The 7#5 conductor (JEA #COBCW016) shall be Copperweld, 7-strand #5, 0.546" diameter, 40% conductivity as per ASTM B-227 and B-228, high strength - rated 17,949 lbs.

2.4.2. The Contractor shall install the ground conductor in the locations indicated on the Drawings and at the depth specified. The Contractor shall install the conductor in an open trench to facilitate proper installation and inspection of the ground grid connections.

2.4.3. The Contractor shall notify the Owner of any damaged ground grid conductor before, during, and after installation so the conductor may be replaced.

2.4.4. The Contractor shall furnish material (as required) and install all ground rods, ground wells, and grounding connections to complete the ground grid system, as specified.

2.5. EXISTING GRID INTERFERENCE

2.5.1. The Contractor shall relocate any existing ground grid facilities which are discovered during excavation for this work. It is expected that the Contractor may discover up to five (5) runs of ground grid conductor that must be relocated, to accommodate the foundations and other work that is a part of most station improvement Contracts. Because the existing ground grid components are a part of an existing, energized substation, care must be taken in the relocation of such grounding facilities, which relocation shall be performed as follows:

A. The Contractor shall first identify to the JEA Contract Administrator each of the ground grid components that cross any of the excavation areas. This shall be done by means of either a total hand dig or a circumferential hand dig that exposes all facilities that cross through the excavation areas.

B. After determining the crossings of the ground grid, the Contractor shall propose a sketch to the JEA Contract Administrator showing how the grid will be rerouted AROUND the periphery of each of the excavation areas. The sketch shall list the existing materials discovered, the materials to be used, and the initial and final configuration of the grid work.

C. The JEA Contract Administrator shall transmit the sketch to the Project Engineer for review and approval, and such review shall be provided within five (5) business days. If JEA fails to return approval/comments/corrections on the sketch by the sixth (6^{th}) business day, the sketch shall be approved and the Contractor shall commence work.

2.5.2. This electrical power substation will remain energized during this work, and significant ground grid currents may be flowing in any component of the grid at any time. **UNDER NO CIRCUMSTANCE SHALL THE CONTRACTOR CUT ANY EXISTING GROUND GRID FACILITIES** prior to a replacement facility being placed into service. These new facilities must be inspected by the JEA Contract Administrator PRIOR to cutting of and removing the interfering facilities.

2.5.3. In the event that more than five (5) ground grid crossings are found in the excavation area, the Contractor shall be entitled to additional compensation, over and above the bid for this Work. This compensation shall be determined by the Contractor (in a formulary way) based solely on labor/material increments for the additional work, and

based on the full costs of the most expensive three (3) of such crossings being contained entirely within the original scope of work.

2.6. GROUND GRID CONNECTIONS

2.6.1. Ground grid connections (including connections to ground rods and ground wells) shall be made by an approved exothermic process utilizing Cadweld Plus molds and materials manufactured by Cadweld. The Contractor shall use the Cadweld Plus System with the corresponding molds and electronic control unit for weld metal ignition. Molds for each type of connection are to be replaced after a maximum use of fifty (50) welds. Ground grid connections may be made by AMP, or other approved mechanical connectors (only if specified), where the number of connections required is limited.

2.6.2. Ground grid connections shall be of the type that avoids cutting and/or splicing of the main grid conductor.

2.6.3. A Manufacturer's representative is required to demonstrate the proper installation procedures of the exothermic system being used prior to installation of any ground grid connection. The Contractor shall be responsible for arranging the demonstration. Any Contractor representative that may install the ground grid connections and the JEA Contract Administrator shall be present at the demonstration.

2.6.4. The Contractor shall strictly follow the Manufacturer's installation procedures.

2.6.5. All surfaces to be joined by the weld shall be thoroughly cleaned and dried prior to final placement of the mold. Worn, damaged, or incorrectly sized molds which in the opinion of the JEA Contract Administrator do not make satisfactory welds shall be removed from the job site.

2.6.6. All welded connections made by the exothermic process shall encompass 100% of the end of the material being welded. Welds which do not meet this requirement shall be remade at the Contractor's expense.

2.6.7. All welded connections made by the exothermic process shall be visually inspected by the JEA Contract Administrator and may be subjected to testing. Testing shall be in the form of moderate hammer blows, from which a properly formed connection will easily resist any visible damage. Any connection which fails such a test or which, upon visual inspection, indicates a porous or deformed weld shall be remade at the Contractor's expense. Should different molds or materials be required to facilitate the corrected connection of a failed weld, such material shall be furnished at the Contractor's expense. The use of molds and materials other than specified must be approved for use by the Project Engineer.

2.8. EQUIPMENT GROUNDING

2.8.1. The Contractor shall be responsible for connecting electrical equipment such as circuit breakers, station service transformers, potential transformers, instrument transformers, lightning arrestors, etc., directly to the station ground grid as shown on the Drawings.

2.8.2. Electrical equipment shall be furnished by the Owner, unless otherwise specified. The Contractor shall be responsible for installing the equipment ground conductor on the side of the structure designed to accommodate the ground conductor.

2.8.3. The Owner shall furnish all above grade ground connectors necessary to connect the equipment to the station ground grid, unless otherwise specified. The Contractor shall furnish the 7#5 Copperweld grounding conductor and all other material, equipment, and labor necessary to complete the connection of the electrical equipment to the station ground grid.

2.8.4. The Contractor shall install the equipment ground conductor such that the continuity of the conductor from the equipment to the station ground grid is maintained as much as practical.

2.8.5. The ground conductor installed on the equipment structures shall be sufficient in meeting the requirements of structure grounding.

2.8.6. Free standing electrical equipment, such as circuit breakers, shall be connected directly to the station ground grid. The Contractor shall install ground conductors as shown on the Drawings. More than one (1) ground conductor installation may be required in the grounding of free standing electrical equipment.

2.9. STRUCTURE GROUNDING

2.9.1. The Contractor shall be responsible for connecting all steel structures directly to the station ground grid as shown on the Drawings.

2.9.2. The structures are furnished by the Owner and are designed to accept the ground connectors provided. The Contractor shall be responsible for installing the structure ground conductor on the proper side of the structure to facilitate the connection of the structure to the station ground grid.

2.9.3. The Owner shall furnish all above grade ground connectors necessary to connect the structures to the station ground grid, unless otherwise specified. The Contractor shall furnish the 7#5 Copperweld grounding conductor and all other material, equipment, and labor necessary to complete the connection of the steel structures to the station ground grid.

2.9.4. The Contractor shall install all structure ground conductors such that they conform to the structure and foundation. Ground conductors on structures with grounded equipment shall conform to the requirements of this Specification.

2.9.5. Structures must be grounded to the station grid within the same working day the structure is erected.

3. RACEWAY

3.1. GENERAL

3.1.1. This is a general specification and covers the requirements and procedures for the installation of conduits, wireways, manholes, cable trenches, and cable trays used to distribute power and control cables to the equipment in the switchyard and control building. Any material or equipment listed which does not apply to this particular project shall be disregarded. The Drawings shall be referenced for specific requirements concerning the quantity, type, and installation of material to complete this work.

3.1.2. The Contractor shall be responsible for providing the Owner with accurate "As Built" drawings of the conduit, cable trench, and cable tray systems installed (as specified in Section VII).

3.2. SCOPE

This Section covers the labor, equipment, and material requirements for the installation of conduits, wireways, manholes, cable trenches, and cable trays in the switchyard and control building. The Contractor shall furnish all materials necessary and install the conduits, wireways, manholes, cable trenches, and cable trays as shown on the Drawings and specified herein.

3.3. MATERIALS

The Contractor shall refer to the Drawings for material requirements to complete the installation of the conduits, wireways, manholes, cable trenches, and cable trays as required for the substation raceway system. The Contractor shall furnish materials and equipment only as specified or approved by the Project Engineer.

3.3.1. All Contractor furnished materials, unless otherwise specified, shall be new, of first quality, and of the proper type for the use intended.

3.3.2. The Contractor shall refer to the "Conduit Schedule" for specific material requirements of individual raceway runs.

3.3.3. Unless otherwise specified, UV resistant Schedule 40 PVC shall be permitted for underground conduit runs. All above grade conduit shall be either rigid galvanized steel or UV resistant Schedule 40 PVC, unless otherwise specified or as shown on the Drawings. The inside edge of conduit ends (spigot-end only in the case of belled-end conduit) shall be beveled to eliminate sharp edges and minimize the possibility of cable damage.

3.4. CONDUIT AND WIREWAY

3.4.1. The Contractor shall furnish and install the conduits, as listed in the "Conduit Schedule" and as shown on the Drawings.

3.4.2. The Contractor is responsible for all hardware necessary to complete the installation of the conduit system.

3.4.3. Conduits shall be installed at the depth shown on the Drawings, with the area backfilled and compacted to same density as surrounding areas. See section VIII for installation and proofing requirements for the conduit systems, as required.

3.4.4. When installing conduit in an existing switchyard, the Contractor shall remove and dispose of the existing rock. The Contractor shall not use this rock to cover the completed work-in-place, but shall place new, clean rock onto the work surfaces. Such rock and its placement shall meet the requirements of Section VIII of these Specifications.

3.4.5. When installing conduit in an existing switchyard, the Contractor shall compact the area to the same density, and with similar material, as with the adjacent undisturbed materials. In every such case, the resultant soils will be re-poisoned to eradicate future plant growth, using the herbicide specified in Section VIII of these Specifications. The Contractor shall furnish these herbicides.

3.4.6. The Contractor shall form all above grade conduits to conform to the surfaces of the foundations and structures. Rigid galvanized steel conduit shall be formed using a pipe bender. UV resistant Schedule 40 PVC shall be shaped with a Therm-o-Tools Company combo type, Hotbox bender, or approved equal.

3.4.7. The Contractor shall furnish and install the wireway as specified in the “Conduit Schedule” and as shown on the Control House Drawings. The wireway shall be NEMA 1 square wireway, smooth, seam free, without knockouts, and shall have removable covers. The wireway and associated fittings shall be finished with baked satin ANSI 61 gray enamel over phosphatized surface. The wireway shall be manufactured from steel not less than 16 gauge and shall conform to NEMA standards. The Contractor shall install the wireway in accordance with the Manufacturer instructions and as indicated on the drawings. All field cuts shall be made with a hacksaw and grounded smooth. Terminations of the wireway run into the cable tray, electrical panels, or electrical equipment shall utilize a panel adapter. Wireway sweeps consisting of two (2) 45 degree bends shall be used in lieu of one (1) 90 degree bend.

3.4.8. The Contractor will be responsible for labeling all conduits as listed in the “Conduit Schedule”. For details, see Subsection “Labeling” of this Section.

3.5. PULLBOXES

3.5.1. Unless otherwise noted, JEA shall furnish and contractor shall install all pre-cast pullboxes in the locations shown on the drawings. The final elevation of the pullbox shall be flush with the final grade or rocked elevation, as necessary.

3.5.2. Requirements for installation, including trenching, backfill, compaction, etc. shall be as shown on the drawings and Section VIII.

4. CONTROL CABLE & LOW-VOLTAGE ELECTRICAL CABLE

4.1. CABLE SCHEDULE

4.1.1. The Contractor shall pull and terminate all cables as listed in the Cable Schedule. All control cable, shielded control cable, and instrument cable will be provided by Owner. All other cables listed shall be provided by the Contractor.

4.1.2. Cable lengths listed in the Cable Schedule are approximate. The Contractor shall be responsible for verification of all cable lengths prior to cutting.

4.1.3. The Contractor is responsible for providing the Owner with accurate "As Built" revisions of the Cable Schedule, Conduit Schedule, and related Drawings, as specified in Specification Section VII.

4.1.4. All low-voltage electrical cable furnished by the Contractor shall be as specified in the Cable Schedule. Where multiple conductor cable is specified, the Contractor shall furnish and install multiple conductor cable. Cable lengths listed in the Cable Schedule are approximate. The Contractor shall supply cable as necessary to complete the work.

4.1.5. The Contractor will be responsible for labeling all cables as listed in the Cable Schedule. For details, see Subsection “Labeling” of this Section.

4.2. SPLICES

4.2.1. All runs of control cable shall be continuous. Splices in control cable shall NOT be permitted.

4.2.2. Splices made in low-voltage electrical cable should be avoided. When necessary, splices in low-voltage electrical cable shall conform to all applicable NEC and NESC standards.

4.3. INTERCONNECTION DRAWINGS

The control cable Interconnection Drawings will be supplied at a later date by the Owner to show all terminations of the cables as listed on the Conduit and Cable Schedules.

4.3.1. The Contractor shall be responsible for terminating all cables listed on the Conduit and Cable Schedules. The Contractor shall also be responsible for the termination of any jumpers on terminal blocks in the equipment or on the control panels that may be shown on the Interconnection Drawings.

4.3.2. The Bid shall be based on the assumption of a termination at both ends of every conductor in each cable of the Cable Schedule.

4.3.3. The Owner shall terminate all cables to existing control panels which are energized. The Contractor shall pull cables to these panels, fan ends, install terminals, and leave ample cable for making terminations.

4.4. CONTROL CABLE TERMINALS

Ring type compression terminals, which shall be furnished by the Contractor, shall be used at both ends of all control cables and wiring. The ring terminals used shall be non-insulated, tin plated, barrel type with brazed seam and sized for the wire being terminated. Terminal manufacturer's recommendation shall be used to select the termination lug to match the size of the terminal screw and the size of the wire. All terminal lugs shall be crimped using a lug-crimping tool recommended by the lug manufacturer. Care shall be taken to avoid under and over crimping. Each crimp shall be inspected for good connection visually and by applying appropriate tension to the joint.

4.5. GROUNDING OF SHIELDED CONTROL CABLE

A copper shield grounding bus has been provided at the top of each relay control panel for terminating the ground conductor of each shielded control cable. Each ground conductor from the shielded cables will land individually on a terminal space, and be identified with its appropriate cable name. The Owner will provide ground cables from the shield bus to the panel ground. The Contractor shall provide amp type Termi-foil connectors for jumper connections between the control cable shields to the panel ground shield bus. The jumper wire size shall be a stranded #10 AWG.

4.6. LENGTH OF CABLES FOR CONTROL PANELS

All cables pulled to the control panels shall be sized to reach the floor of the panel and back to the top of the relay panel or RTU. The insulation jacket shall then be stripped back to the top of the panel and all cables terminated without cutting individual wires.

5. CONTROL HOUSE ELECTRICAL

5.1. SCOPE

This Section covers the equipment, installation, and wiring necessary for the control house.

5.2. GENERAL

The Contractor shall furnish and install the low-voltage equipment in locations as shown on the Drawings. The installation of low-voltage wiring of this equipment shall conform to the practices set forth in the latest edition of the NEC, unless otherwise specified in these Plans and Specifications. It shall be the Contractor's responsibility to furnish the required quantity of conduit and cable necessary to complete the installation.

5.3. EQUIPMENT AND MATERIALS

5.3.1. All materials, unless otherwise indicated, shall be new, of the first quality, and of the proper type for the use intended. Where applicable, all material shall be in accordance with the latest published NEMA Standards and/or carry the approval of the Underwriters' Laboratories.

5.3.2. The use of a manufacturer's trade name and catalog number is not intended to indicate preference, but only the type and quality of the product desired. Products of reputable manufacturers of equal quality and functional type will be acceptable upon approval of the Project Engineer. Substitutes which tend to lower the quality of the work will not be permitted.

5.4. PLACING EQUIPMENT IN SERVICE

Equipment and electrical circuits shall be checked and tested prior to energization. Notification of the JEA Contract Administrator is to be made before energization of the low-voltage electrical equipment so a representative of the JEA Contract Administrator will be present.

6. RECEIVING AND OFF-LOADING OF STRUCTURES AND MATERIALS

The Contractor shall be responsible for taking delivery of all Substation Structures and Materials directly from the Owner or the Manufacturer at the job site. This will require that the Contractor perform the following tasks regarding Substation Structures and Materials delivery as the project progresses:

6.1.1. The Contractor may assume that the Owner's Manufacturer shall have the Substation Structures and Materials available for shipping in time to meet the scheduled Structures and Materials shipping date which is shown in the Project Schedule in the Attachments of these Specifications.

6.1.2. As the site work progresses, the Contractor shall notify the Project Engineer in writing (or by electronic mail) at least two (2) weeks in advance of the date of the Contractor's readiness for all Structures and Materials. However, this scheduled delivery date must be within two (2) weeks of the scheduled Structures and Materials shipping date which is listed in the Project Schedule in the Attachments of these Specifications.

6.1.3. The Owner's Manufacturer will then set an approximate schedule for the shipment of all Substation Structures and Materials directly to the job site and deliver on the date specified by the Contractor, +/- five (5) business days (two week window).

6.1.4. When the shipper of each shipment is within 48 hours of the Substation site, the shipper will contact the JEA Contract Administrator to schedule a delivery appointment. The Contractor, shipper, and JEA Contract Administrator shall then coordinate a firm appointment.

6.1.5. The Contractor shall then have employees and equipment on-site, throughout normal business hours of that day, to off-load all Substation Structures and Materials within two (2) hours of the shipper's arrival. The Contractor shall then take responsibility of all Substation Structures and Materials, and may store the Structures and Materials on-site in an approved storage area. Approved storage area shall mean any storage location approved by the JEA Contract Administrator for this specific purpose.

6.1.6. The JEA Contract Administrator and the Contractor shall then count, examine, and sign for all Structures and Materials.

7. LABELING

The Contractor shall be responsible for labeling the following newly-installed substation facilities at the job site. This will require that the Contractor perform the following tasks:

7.1. LABELING OF LARGE TRANSFORMERS AND BREAKERS

The Contractor shall provide and install all labeling of all newly-installed large transformers and high-voltage circuit breakers in the switchyard as specified below.

7.1.1. The Contractor shall label the transformers and breakers using spray paint and a block stencil with six (6”) inch high letters. The equipment designations to be used are shown on the "SINGLE LINE DIAGRAM" Drawing.

7.1.2. The Contractor shall prepare the surface of the transformers and breakers prior to painting, in a manner approved by the JEA Contract Administrator. The paint shall be Rust-oleum spray on #7776-830, flat black, or equal as approved by the JEA Contract Administrator.

7.1.3. The labeling shall be applied, at approximately eye level, in two (2) places: on the right hand side of the cabinet door and another location as specified by the JEA Contract Administrator.

7.2. LABELING OF LOW-VOLTAGE AC/DC SUPPLY BRANCHES

The Contractor shall be responsible for labeling of all newly-installed low-voltage AC/DC supply branches at the job site. This will require that the Contractor perform the following tasks:

7.2.1. The Contractor shall label the branch circuits of each AC/DC supply branch to agree with the designations as shown on the "LOW VOLTAGE AC & DC DIAGRAMS" Drawing.

7.2.2. The Contractor shall label the branch circuits of each AC/DC supply branch in two (2) locations; the panel front surface adjacent to the protection device (breaker) and the branch index sheet provided with the cover of the cabinet.

7.2.3. The branch index sheet shall be neatly typed (or clearly printed in ball-point pen) with the branch names shown on the Drawings for these panels. Two (2) copies of this sheet will be produced by the Contractor and provided to either the JEA Contract Administrator or the Project Engineer at the final checkout / inspection.

7.2.4. The Contractor shall provide and install labels of each branch on the panel front surface adjacent to the protection device (breaker). The Contractor shall refer to the JEA Contract Administrator for approval of a labeling system for this purpose.

7.3. LABELING OF CONDUITS

The Contractor shall provide and install labels on all newly-installed conduits as a part of this work. This shall require that the Contractor perform each of the following:

7.3.1. Where conduits enter an electrical panel (AC/DC service panel, control panel, junction box, etc.), the Contractor shall label the conduit in two (2) places:

A. The Contractor shall label the conduit circumferentially, about two (2”) inches outside of the box, using a permanent fine-tip black marker. The markings shall be positioned and sized so that a person working on the cabinet may readily see the markings.

B. The Contractor shall also apply the same labels, using a permanent fine-tip black marker, on the interior of the box, conspicuously near the conduit entry points.

7.3.2. Where conduits enter a cable trench, the Contractor shall label the conduit along the axis of the conduit, about two (2”) inches below the conduit opening, using a permanent large-tip black marker. The markings shall be positioned and sized so that a person looking downward onto the conduit may readily see the markings.

7.3.3. Where a conduit terminates other than as mentioned above, the Contractor shall label the conduit along the axis of the conduit, about two (2”) inches below the conduit termination, using a permanent large-tip black marker.

7.3.4. All conduit identifications shall be those taken from the Conduit Schedule which is attached to these Specifications.

7.4. LABELING OF CABLE

The Contractor shall provide and install labels on all newly-installed cables as a part of this work. This shall require that the Contractor perform each of the following:

7.4.1. All cables are to be labeled:

A. At both ends.

B. Where entering and leaving cable trenches or pullboxes.

C. Where exiting station electrical equipment, to include all AC/DC power panels, power circuit breakers, power transformers, junction boxes, fiber optic, video, and station control panels, etc.

7.4.2. Cable identification tags will be attached to the cable in a manner approved by the JEA Contract Administrator. The Contractor shall prevent galvanic corrosion and not intermix dissimilar metals (Aluminum-Copper, Stainless Steel-Aluminum) when attaching tags to cables. Plastic cable ties shall not be permitted for exterior applications. Examples of exterior connection methods are lockable beaded chain and metal wire.

7.4.3. Outdoor cable identification tags shall be 1/2” wide stainless steel, Dymo M1011 system, unless otherwise approved by the JEA Contract Administrator. Indoor cable identification tags shall be RhinoPRO 1/2" flexible nylon labels - black on white, Manufacturer part# 18488, unless otherwise approved by the JEA Contract Administrator. Indoor labels shall be secured with no less than two plastic cable ties.

7.4.4. All cable identification tags will have the appropriate cable number clearly stamped in no less than 1/4” high characters. Cable numbers are specified on the Cable Schedule attached to these Specifications.

APPENDIX B- MINIMUM QUALIFICATIONS FORM

124-17 - Construction Services for Northside (NGS) Substation Bay Addition and St. Johns River Power Park (SJRPP) Station Service Conversion

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

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

A COMPANY SHALL SUBMIT ONE (1) ORIGINAL QUALIFICATIONS PACKAGE AND TWO (2) DUPLICATES OF THE ORIGINAL QUALIFICATIONS PACKAGE, AND AN ELECTRONIC VERSION WITH THEIR HARDCOPY SUBMITTAL.

BIDDER INFORMATION

COMPANY NAME:_____

BUSINESS ADDRESS:_____

CITY, STATE, ZIP CODE:_____

TELEPHONE:_____

FAX:_____

E-MAIL:_____

PRINT NAME OF AUTHORIZED REPRESENTATIVE:_____

SIGNATURE OF AUTHORIZED REPRESENTATIVE:_____

TITLE OF AUTHORIZED REPRESENTATIVE:_____

Bidder shall have the following Minimum Qualifications to be considered eligible to submit a Bid in response to this Solicitation. **A Minimum Qualification Form which is required to be submitted with the Bid Form is provided in Appendix B of this Solicitation.**

It is the responsibility of the Bidder to ensure and certify that it meets the Minimum Qualifications stated below. A Bidder not meeting all of the following criteria will have their Bids rejected:

- Company must be listed on JEA's Responsible Bidders List (RBL) in the following category: **SB1 - Substation Construction up to 500KV**

- Company must hold a valid State of Florida Electrical Contractor or General Contractor License. Enter number on the Minimum Qualification Form.
  General Contractor's License or Utility Contractor's license number: _____

- The Company must submit one (1) representative project reference in which the Company self-performed the installation of a substation, or part of a substation rated at 138kV or greater. The project must have been substantially completed within the last three (3) years of the bid due date. **Respond on the below template.**

For any questions regarding RBL qualification and current status, contact Melanie Newton-Green at: 904-665-6913 or at newtmi@jea.com.

REFERENCE 1

Reference Company Name _____

Reference Contact Person Name _____

Reference Contact Person Phone Number _____

Reference Contract Person E-Mail Address _____

Date Construction Completed _____

Project Title _____

Total Project Construction Cost _____

Percentage of Work Self-performed by bidder or subcontractor _____

Enter Rating (138kV or greater) _____

Description of Project _____

APPENDIX B-BID FORM
124-17 Construction Services for Northside (NGS) Substation Bay Addition and St. Johns River Power Park (SJRPP) Station Service Conversion

Submit an **original, two (2) copies and one (1) CD or thumb drive** along with other required forms in a sealed envelope to: JEA Procurement Dept., 21 W. Church St., Bid Office, Customer Center, 1st Floor, Room 002, Jacksonville, FL 32202-3139.

Company Name: _____

Company's Address _____

License Number (if applicable) _____

Phone Number: _____ FAX No: _____ Email Address: _____

BID SECURITY REQUIREMENTS
☐ None required
☒ Certified Check or Bond Five Percent (5%)

TERM OF CONTRACT
☐ One-Time Purchase
☐ Annual Requirements
☒ Other, Specify- Project Completion

SAMPLE REQUIREMENTS
☒ None required
☐ Samples required prior to Response Opening
☐ Samples may be required subsequent to Bid Opening

SECTION 255.05, FLORIDA STATUTES CONTRACT BOND
☐ None required
☒ Bond required 100% of Bid Award

QUANTITIES
☐ Quantities indicated are exacting
☒ Quantities indicated reflect the approximate quantities to be purchased Throughout the Contract period and are subject to fluctuation in accordance with actual requirements.

INSURANCE REQUIREMENTS

Insurance required

PAYMENT DISCOUNTS
☐ 1% 20, net 30
☐ 2% 10, net 30
☐ Other _____
☐ None Offered

Item No.	ENTER YOUR BID FOR THE FOLLOWING DESCRIBED ARTICLES OR SERVICES	TOTAL BID PRICE
1	Total Cost - Construction Services for Northside (NGS) Substation Bay Addition and St. Johns River Power Park (SJRPP) Station Service Conversion- **Include the SWA amount in the total cost**	$_____
2	Supplemental Work Allowance (SWA)	$ 43,500

BIDDER CERTIFICATION

By submitting this Bid, the Bidder certifies that it has read and reviewed all of the documents pertaining to this Solicitation, that the person signing below is an authorized representative of the Bidding 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 contractor's license for the work (if applicable). The Bidder also certifies that it complies with all sections (including but not limited to Conflict Of Interest and Ethics) of this Solicitation.

We have received addenda _____ through _____

_____
Handwritten Signature of Authorized Officer of Company or Agent Date

_____
Printed Name and Title