INVITATION TO BID

ITB No. C-1791R

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

ITB DUE DATE: TUESDAY, JUNE 6, 2023

Sandra Platt, Sr. Contract Specialist
Sandra.Platt@JAXPORT.com

PROCUREMENT SERVICES
2831 Talleyrand Avenue, Jacksonville, Florida 32206

JAXPORT.com/procurement/active-solicitations

BID RELATED DOCUMENTS

FOR

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS)
RE-BID

Contract No.: C-1791R

BLOUNT ISLAND MARINE TERMINAL

BID RELATED DOCUMENTS

INDEX

BID RELATED FORMS

INVITATION TO BID

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID
BLOUNT ISLAND MARINE TERMINAL
JAXPORT PROJECT NO.: B2021.10
JAXPORT CONTRACT NO.: C-1791R

APRIL 27, 2023

Sealed bids will be received by JAXPORT up to **2:00 PM (EST)**, local time, **TUESDAY, JUNE 6, 2023**, at which time they shall be opened via **ZOOM MEETING** at **https://us02web.zoom.us/j/81755513754?pwd=OW9QaXNzdWRvZklGckhZSGRVKzV5Zz09, Meeting ID 817 5551 3754 Pass Code 787556** for **INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID**.

All bids must be submitted in accordance with specifications and drawings for Contract No. **C-1791R.**

IT IS MANDATORY THAT THE BIDDER SHALL ACKNOWLEDGE THE INCLUSION OF ALL ADDENDA ON THE BID FORM, FORM BF. ACKNOWLEDGEMENT SHALL BE MADE BY INITIALS AND DATE. FAILURE TO ACKNOWLEDGE ALL ADDENDA SHALL RESULT IN REJECTION OF THE BID.

PLEASE VISIT HTTPS://WWW.JAXPORT.COM/PROCUREMENT/ACTIVE-SOLICITATIONS/ OR CALL PROCUREMENT SERVICES AT (904) 357-3017, PRIOR TO THE BID OPENING TO DETERMINE IF ANY ADDENDA HAVE BEEN RELEASED ON THIS CONTRACT.

A **PRE-BID CONFERENCE** WILL BE HELD ON **WEDNESDAY, MAY 10, 2023, AT 10:00 AM, ZOOM MEETING at: https://us02web.zoom.us/j/84334798817?pwd=a2paeGdobGxuelEvczJWRWtuLzJpQT09, MEETING ID: 843 3479 8817 Pass Code: 878913**

SITE VISIT: An Optional Site Visit is scheduled for **Wednesday, May 10, 2023 at 2:00 PM (EDT)**. **Attendees will meet in the parking lot at the Access Control Building, Blount Island Marine Terminal, 9620 Dave Rawls Blvd, Jacksonville, FL 32226**.

ATTENDANCE BY A REPRESENTATIVE OF EACH PROSPECTIVE BIDDER IS ENCOURAGED.

Bid and contract bonding are required.

This project is funded by JPA and the State of Florida grant program.

The mandatory DBE Participation Goal established for this project is **Zero (0%),** however, DBE participation is strongly **Encouraged.**

Lisa Gee
Lisa Gee (Apr 27, 2023 14:42 EDT)
Lisa Gee
Director of Procurement Services
JAXPORT

BID CONTENTS AND FORMAT

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

Interested bidders shall prepare and electronically submit, a bid package consisting of bidder's REQUIREMENTS (a-h), signed FORM BF and any other technical information required in order to be considered for award of this project. JAXPORT no longer accepts any bid packages submitted by Mail or Hand-Deliveries. Please visit the JAXPORT's website at www.jaxport.com for more information and updates. Bids received via email, fax or hand delivery will be declared nonconforming and will not be read or accepted.

1. BIDDER REQUIREMENTS FOR CONTRACT NO.: **C-1791R**

   NAME OF FIRM: _____

   The electronically submitted documents shall contain the following information:

   a. Bid bond, certified check or cashier's check for 5 percent of the amount of the bid (See Article 6 in Supplemental Instructions to Bidders).

   b. Form COI, "Conflict of Interest Certificate" statement.

   c. Form PEC, "Sworn Statement on Public Entity Crime."

   d. Bidders Representation and Authorization – Written Statement (Only if necessary).

   e. Form MR, "Bidders Minimum Requirements" (See Article 4 in Supplemental Instructions to Bidders).

   f. Form CCRSC, "Contractor Certification Regarding Scrutinized Companies."

   g. Form E-Verify, "Acknowledgement and Acceptance of E-Verify Compliance."

   h. Form EB-1 "E-Builder User Agreement."

2. **Signed FORM BF, and any technical information required** to be submitted by the specifications.

Alternatively, the entire bid package must be submitted in **PDF format only** through E-Builder Electronic Bid Submission, in sufficient time to ensure receipt prior to the time specified in the "Invitation to Bid."

Bids must be submitted prior to 2:00 PM (EST), JUNE 6, 2023. The submit button will deactivate exactly at 2:00 PM and you will not be permitted to submit your bid regardless of where you are in the process. Please plan accordingly.

The PDF file name(s) should read "**C-1791R**." "How to Submit Your Bid Response in E-Builder" is provided as "Attachment No. 1." Additional instructions on how to navigate in E-Builder, click the below link to access the **"Bidders Portal Instructional Training Video":**

https://resources.e-builder.net/bidding/e-builder-bidders-portal-instructional-training-video

It is the sole responsibility of the Bidder to have its bid submitted to JAXPORT as specified herein before the aforementioned date and time. For the purpose of the ITB, a Bid is considered delivered when confirmation of delivery is provided by E-Builder and all required documents have been uploaded. Bidders must ensure that its electronic submission in E-Builder can be assessed and viewed at the time of the Bid Opening. JAXPORT will consider any file that cannot be immediately accessed and viewed at the time of the Bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. Bidders will not be permitted to unencrypt files, remove password protections, or resubmit documents after Bid Opening to make a file viewable if those documents are required with Bid. All expenses for submitting Bids to JAXPORT are to be borne by the Bidder and will not be borne, charged to or reimbursed by JAXPORT in any manner or under any circumstance.

If your firm does not intend to submit a bid for this project, please complete Form NB and fax to (904) 357-3077 or e-mail to Sandra.Platt@JAXPORT.com

"NO BID" RESPONSE

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

PROJECT: **INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID**

CONTRACT NO. **C-1791R**

BID OPENING DATE: **TUESDAY, JUNE 6, 2023** TIME: **2:00 PM (EST)**

If your firm does not intend to submit a bid for this project, please provide us with the information requested below and fax to (904) 357-3077 or e-mail to Sandra.Platt@JAXPORT.com

NAME OF FIRM: _____

We are unable to submit a bid for this project for the following reasons:

SIGNATURE: _____

TITLE: _____

TELEPHONE: ( )

We ( ) are / ( ) are not interested in bidding on similar JAXPORT projects in the future.

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

1. AUTHENTICATION OF BID FORM

All bids submitted for this project shall be signed as outlined below. **FAILURE ON THE PART OF THE INDIVIDUAL, PARTNERSHIP OR CORPORATION TO SIGN THE BID, FORM BF, WILL CONSTITUTE A MATERIAL IRREGULARITY AND SHALL RESULT IN THE REJECTION OF THE BID.**

a. If made by an individual, FORM BF shall show the name and business address of the individual or firm and shall be signed by the individual or authorized representative of the individual.

b. If made by a partnership, FORM BF shall show the name and business address of the partnership and shall be signed by a partner or authorized representative of the partnership.

c. If made by a corporation, FORM BF shall show the name and business address of the corporation and shall be signed by an officer or an authorized representative of the corporation.

2. AWARD OF CONTRACT

The Authority reserves the right to award this contract to the lowest, responsive, responsible bidder, and whose bid is fully conforming to the requirements of the bid documents. Nevertheless, JAXPORT reserves the right to waive informalities in any bid, to reject any or all bids, and to accept the bid which in its judgment will be in the best interest of JAXPORT. JAXPORT will be the sole judge of which Bid will be in its best interest and its decision will be final.

JAXPORT reserves the right to award this contract to the bidder offering the lowest price consistent with meeting all specifications, terms, conditions, delivery requirements set forth on this bid. No award will be made until all necessary inquiries have been made into the responsibility of the lowest conforming bidder and JAXPORT is satisfied that the lowest bidder met all the requirements, is qualified and has the necessary organization, capital and resources required to perform the work under the terms and conditions of the contract. JAXPORT reserves the right to accept or reject any or all Bids, in whole or in part.

3. BID AMENDMENTS

Bid price amendments are permissible if received by JAXPORT Procurement Services, via E-Builder electronic submission, prior to the bid opening time stated in the "Invitation to Bid."

Refer to **Attachment No. 1** "How to Submit Your Bid Response in E-Builder." For additional instructions on how to navigate in E-Builder, click the below link to access the **"Bidders Portal Instructional Training Video":**

https://resources.e-builder.net/bidding/e-builder-bidders-portal-instructional-training-video

It is the responsibility of the individual, partnership, or corporation submitting the bid to ensure that any amendment, is made prior to the bid opening time stated in the "Invitation to Bid." JAXPORT accepts no responsibility for late amendments, and bidders shall not be permitted to modify their bids after the specified time for the bid opening. EMAIL, MAIL AND FACSIMILE TRANSMISSION OF AMENDMENTS TO JAXPORT WILL NOT BE ACCEPTED.

All amendments must be signed by an individual authorized to sign the bid. An unsigned amendment shall be considered nonconforming and will therefore cause the amendment to be rejected. No amendment shall be withdrawn after the time stated in the "Invitation to Bid" has been reached and the call for bids has been closed.

4. BIDDERS MINIMUM REQUIREMENTS

Contractors are required to upload via E-Builder Electronic Bid Submission FORM MR, "BIDDERS MINIMUM REQUIREMENTS," and include it as part of the "BIDDER REQUIREMENTS" (see section "Bid Contents and Format"). Before an award is made, Minimum Requirements of the apparent low conforming bidders will be examined to determine the Contractor's financial responsibility and work history, experience and current workload. Additional information may be requested if JAXPORT considers it necessary to make a proper evaluation. Based on the review of the Contractor's financial condition, previous experience, current workload or any other information included on BIDDERS MINIMUM REQUIREMENTS or subsequently requested from the Contractor, JAXPORT reserves the right to reject any Contractor's bid, should, in its judgment, the Contractor be deemed to be unqualified or incapable of successfully completing the project in a timely manner.

The Minimum Requirements requires a financial statement as outlined in Section 119.071, Florida Statutes, and provides:

"Any financial statement which an agency requires a prospective bidder to submit in order to pre-qualify for bidding or for responding to a Bid for a road or any other public works' project is exempt from s. 119.071 (1c) and s.24(a), Art. I of the State Constitution."

5. BID FORM

The bidder shall submit the bid on Bid FORM BF furnished herein. If additional forms are required, they may be secured from JAXPORT or may be duplicated. The bidder shall state the price, typewritten or written in ink, in numerals, for which the bidder proposes to do each item of work. See "BID CONTENTS AND FORMAT" section for more details.

NOTE: IT IS MANDATORY THAT THE BIDDER SHALL ACKNOWLEDGE THE INCLUSION OF ALL ADDENDA ON THE BID FORM, FORM BF. ACKNOWLEDGEMENT SHALL BE MADE BY INITIALS AND DATE. FAILURE TO ACKNOWLEDGE ALL ADDENDA SHALL RESULT IN REJECTION OF THE BID.

PLEASE VISIT HTTPS://WWW.JAXPORT.COM/PROCUREMENT/ACTIVE-

SOLICITATIONS/ OR CALL PROCUREMENT SERVICES AT (904) 357-3017, PRIOR TO THE BID OPENING TO DETERMINE IF ANY ADDENDA HAVE BEEN RELEASED ON THIS CONTRACT.

6. BID GUARANTY

Each bidder shall furnish with the bid a bid bond in an amount not less than **5** percent of the total bid, as a guaranty that the bid will not be withdrawn for a period of **90** calendar days after opening of bids. As soon as practicable after opening of bids, any check submitted as guaranty by other than the three low conforming bidders will be returned. Any such checks submitted by the remaining three bidders will be returned after execution of the Agreement and submittal of a contract bond by the successful bidder.

If contract bond is not furnished within the time stated herein, the bid guaranty will be forfeited and the contract may be awarded the next low conforming bidder. **THE BID BOND MUST BE SECURED FROM AND EXECUTED BY AN AGENCY DULY-LICENSED TO DO BUSINESS IN THE STATE OF FLORIDA, PURSUANT TO CHAPTER 255 OF THE FLORIDA STATUTES, SECTION 255.05. FAILURE TO FURNISH THE BID GUARANTY, INCLUDING POWER OF ATTORNEY, IF REQUIRED, WILL CONSTITUTE A MATERIAL IRREGULARITY AND SHALL RESULT IN THE REJECTION OF THE BID**.

If a bid bond is used, it shall be written through a Surety bond agency and with a Surety company meeting the same specifications as those required for contract bonds.

The bid bond provided by the Owner of the Property/Contracting Public Entity may be utilized (see Form BBF). Surety's standard bond form for State of Florida is acceptable. Refer also to "Surety Bonds" of the "General Conditions."

7. BID OPENING - PROCEDURE

At the time and place stated in the "Invitation to Bid," JAXPORT's representative will announce the close of bidding and commence with the Bid Opening. Bidders are invited to attend the **ZOOM Meeting** proceedings .

The Bidder's name and the total amount used for basis of award will be the only information read aloud.

8. EXAMINATION OF DRAWINGS, SPECIFICATIONS, AND SITE OF WORK

The bidder is advised, before submitting a bid, to visit the site of the proposed work and become familiar with the nature and extent of the work and any local conditions that may in any manner affect the work to be done, and equipment, materials, and labor required. The bidder is required to examine carefully the drawings and specifications and contract forms, and to be informed regarding any and all conditions and requirements contained herein that may in any manner affect the work to be performed.

No allowances will be made for conditions overlooked or ignored by the bidder.

9. EXECUTION OF THE AGREEMENT

The individual, firm, or corporation to which the contract has been awarded shall sign the Agreement and return it within ten (10) calendar days after receipt from JAXPORT.

10. FAILURE TO EXECUTE THE AGREEMENT

Failure on the part of the successful bidder to execute the Agreement as required will be just cause for the annulment of the award, and in the event of the revocation of the award, the bidder shall forfeit the Bid Guaranty. This forfeiture shall not be construed as a penalty, but as reasonable, fixed and liquidated damages because of the bidder's failure to enter into contract with JAXPORT.

11. FAMILIARITY WITH LAWS

The bidder shall be familiar and comply with all Federal, State, and local laws, ordinances, rules and regulations that in any manner affect the work. Lack of such knowledge on the part of the bidder will in no way relieve the bidder from any responsibility.

12. FLORIDA STATE SALES TAX

It is the bidder's sole responsibility to incorporate any and all applicable taxes into the bid. However, Chapter 212 of the Florida Statutes provides JAXPORT with sales tax exemption for all procurements made directly by JAXPORT. After a contract has been awarded, certain items which have been included in this bid may be purchased directly by JAXPORT in order to benefit from this tax savings program (See Special Conditions, Section 10, Tax Savings Program, General for more information).

13. OMISSIONS, DISCREPANCIES AND ADDENDA

a. Should an omission or discrepancy be found in the bidding documents, or if there is any doubt as to the meaning, the bidder shall notify JAXPORT Procurement Services, in writing, in sufficient time in order that an addendum might be issued to all prospective bidders, if necessary.

b. Any addenda issued by JAXPORT for the purposes of changing the intent of the plans and specifications or clarifying the meaning of same shall be binding in the same way as if written in the specifications. All addenda will be issued by Procurement Services prior to the bid opening. It is each bidder's sole responsibility to contact Procurement Services to insure that they have received all addenda and that they have obtained the addenda in sufficient time to properly evaluate the contents before submitting a bid. It is the usual practice for JAXPORT to email addenda to known prospective

bidders, but JAXPORT does not guarantee that all bidders will receive addenda in this manner in due time before the bid opening.

c. It is mandatory that the bidder shall acknowledge the inclusion of all addenda on the bid form, FORM BF. Acknowledgement shall be by initials and date. Failure to acknowledge all addenda shall result in rejection of the bid.

14. PROTEST PROCEDURES

Respondents shall file any protest regarding this ITB in writing, in accordance with JAXPORT's Protest Procedures promulgated on SOP- 1215 Procurement Code for the Jacksonville Port Authority, available at https://www.jaxport.com/procurement/active-solicitations/

15. PUBLIC MEETING REQUIREMENTS

JAXPORT complies with Section 286.011 of the Florida Statutes. Therefore certain types of staff meetings and meetings of JAXPORT Awards Committee, and Board of Directors are required to be held in public, with sufficient notice made of the time and date of the meeting(s). All notices of public meetings are posted in the lobby of JAXPORT, 2831 Talleyrand Avenue, Jacksonville, FL 32206 and on JAXPORT's website at www.jaxport.com. For information concerning when the project(s) will be submitted for award, contact JAXPORT Procurement Services at telephone (904) 357-3017, Monday through Friday.

16. REQUIREMENTS OF THE BIDDERS

The successful bidder shall hold a current Contractor's certificate for the type of work to be performed, if it is required by JAXPORT and under applicable law. Evidence of such certificate shall be presented before contract award, or it may be requested with the Bidder's REQUIREMENTS at the time of bid.

In addition, Plumbing and Electrical Contractors and Subcontractors shall be required to hold current certificates issued by the City of Jacksonville qualifying them to perform such work. Chapter 489.103, Florida Statutes, provides that Contractors involved in work on bridges, roads, highways, railroads, or utilities and services incidental thereto, and certain specialties are exempt from licensing by the State of Florida. The Department of Professional and Occupational Registration, State of Florida, advises that wharves, airfield pavements, and fences are included among the specialties which are exempt from licensing.

17. STATEMENTS BY BIDDERS

a. **CONFLICT OF INTEREST** - Pursuant to Chapter 112 of the Florida Statutes, Bidders are required to complete and submit with their bids a "Conflict of Interest" statement. Form COI is provided in the bid documents for that

purpose and must be included as part of the "BIDDER REQUIREMENTS" at the time bids are submitted.

Subcontractors, Vendors, and Suppliers selected by JAXPORT to participate in the Tax Savings Program will be required to submit Conflict of Interest statements prior to any Purchase Orders being issued. The Prime Contractor shall be responsible for obtaining those statements from Subcontractors, Vendors and Suppliers and providing same to JAXPORT in a timely manner. Refer to the "Special Conditions" entitled, "Tax Savings Program – General" of the contract documents for more details on the Tax Savings Program.

b. **PUBLIC ENTITY CRIME** - Pursuant to Chapter 287 of the Florida Statutes, Bidders are required to complete and submit with their bids a Sworn Statement Pursuant to Section 287.133 (3) (a), Florida Statutes, on Public Entity Crimes. Form PEC is provided in the bid documents for that purpose and must be included as part of the "BIDDER REQUIREMENTS" at the time bids are submitted.

   A person or affiliate placed on the convicted vendor list following a conviction for a public entity crime is prohibited from doing any of the following for a period of 36 months from the date of being placed on the convicted vendor list:

   - Submitting a bid on a contract to provide any goods or services to a public entity;
   - Submitting a bid on a contract with a public entity for the construction or repair of a public building or public work;
   - Submitting bids on leases of real property to a public entity;
   - Being awarded or performing work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and
   - Transacting business with any public entity in excess of Category Two threshold amount ($35,000) provided in section 287.017 of the Florida Statutes.

c. **DISCRIMINATORY VENDOR LIST** – An entity or affiliate placed on the discriminatory vendor list pursuant to section 287.134 of the Florida Statutes may not:

   - Submit a bid on a contract to provide any goods or services to a public entity;
   - Submit a bid on a contract with a public entity for the construction or repair of a public building or public work;

- Submit bids on leases of real property to a public entity;
- Be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; or
- Transact business with any public entity.
- To view a current list, visit: http://www.dms.myflorida.com/business_operations/state_purchasing/vendor_information/convicted_suspended_discriminatory_complaints_vendor_lists

d. **BIDDERS REPRESENTATION AND AUTHORIZATION** – In submitting a bid, each Bidder understands, represents, and acknowledges the following (if the Bidder cannot so certify to any of the following, the Bidder shall submit with its response a written explanation of why it cannot do so).

- The Bidder is not currently under suspension or debarment by the State or any other governmental authority.
- To the best of the knowledge of the person signing the bid documents, the Bidder, its affiliates, subsidiaries, directors, officers, and employees are not currently under investigation by any governmental authority and have not in the last ten (10) years been convicted or found liable for any act prohibited by law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract.
- Bidder currently has no delinquent obligations to the State, including a claim by the State for liquidated damages under any other contract.
- The bid submission is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive response.
- The prices and amounts have been arrived at independently and without consultation, communication, or agreement with any other respondent or potential respondent; neither the prices not amounts, actual or approximate, have been disclosed to any Bidder or potential Bidder, and they will not be disclosed before the solicitation bid opening.
- The Bidder has fully informed the Buyer in writing of all convictions of the firm, its affiliates (as defined in section 287.133(1)(a) of the Florida Statutes), and all directors, officers, and employees of the firm and its affiliates for violation of state or federal antitrust laws with respect to a public contract for violation of any misrepresentation with respect to a public contract. This includes disclosure of the names of current employees who were convicted of contract crimes while in the employ of another company.

- The product(s) offered by the Bidder will conform to the specifications without exception.
- The Bidder has read and understands the Contract terms and conditions, and the submission is made in conformance with those terms and conditions.
- If an award is made to the Bidder, the Bidder agrees that it intends to be legally bound to the Contract that is formed with JAXPORT.
- The Bidder has made a diligent inquiry of its employees and agents responsible for preparing, approving, or submitting the bid response, and has been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, act or other conduct inconsistent with any of the statements and representations made in the response.
- The respondent shall indemnify, defend, and hold harmless the Buyer and its employees against any cost, damage, or expense which may be incurred or be caused by any error in the respondent's preparation of its bid.
- All information provided by, and representations made by, the Bidder are material and important and will be relied upon by the Buyer in awarding the Contract. Any misstatement shall be treated as fraudulent concealment from the Buyer of the true facts relating to submission of the bid. A misrepresentation shall be punishable under law, including, but not limited to, Chapter 817 of the Florida Statutes.
- That the Bidder has carefully examined the site of the work and that from his/her investigations has been satisfied as to the nature and location of the work, the kind and extent of the equipment and other facilities needed for the performance of the work, the general and local conditions, all difficulties to be encountered, and all other items which in any way affect the work or its performance.
- That the Bidder is in full compliance with all federal, state, and local laws and regulations and intends to fully comply with same during the entire term of the contract.

e. **SCRUTINIZED COMPANIES – ACTIVITIES IN SUDAN AND/OR IRAN**
Section 287.135 of the Florida Statutes prohibits agencies from contracting with a company on the Scrutinized Companies with Activities in Sudan List or on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, lists created pursuant to section 215.473, Florida Statutes, for goods or services over $1,000,000.

Bidders are required to complete and submit with their bids a Contractor

Certification Regarding Scrutinized Companies, Form CCRSC is provided in the bid documents for that purpose and must be included as part of the "BIDDER REQUIREMENTS" at the time bids are submitted.

Bidder must certify that it is not listed on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to section 215.473, Florida Statutes. Pursuant to section 287.135(5), F.S., Contractor agrees JAXPORT may terminate this contract immediately without penalty if the Contractor is found to have submitted a false certification or if Contractor is placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List.

f. **INSPECTOR GENERAL COOPERATION**

Pursuant to Chapter 20 of the Florida Statues, Contractors and Subcontractors agree to cooperate with the inspector general in any investigation, audit inspection, review, or hearing pursuant to Section 20.055(5). In submitting a bid, each corporation, partnership, or person understands and will comply with this section.

18. E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION

The successful bidder agrees to utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the term of this contract. Successful bidders must include in all subcontracts the requirement that subcontractors performing work or providing goods and services utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term. The successful bidder further agrees to maintain records of its participation and compliance and its subcontractor's participation and compliance with the provisions of the E-Verify program, and to make such records available to JAXPORT upon request. Failure to comply with this requirement will be considered a material breach of the contract.

19. DISADVANTAGED BUSINESS ENTERPRISE (DBE) POLICY

a. **DBE POLICY AND OBLIGATION:**

It is the policy of JAXPORT that DBEs, as defined in 49 C.F.R. Part 26, as amended, shall have the opportunity to participate in the performance of contracts financed in whole or in part with FDOT funds under this contract. The DBE requirements of applicable federal and state laws and regulations apply to this contract. JAXPORT and its contractors agree to ensure that DBEs have the opportunity to participate in the performance of this contract. In this regard, all contractors shall take all necessary and reasonable steps in accordance with applicable federal and state laws and regulations to

ensure that the DBEs have the opportunity to perform contracts. JAXPORT's contractors and subcontractors shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts, entered pursuant to this contract.

b. **DBE UTILIZATION –** The Department of Transportation (DOT) began its race neutral DBE program on January 1, 2000. Contract specific goals are not placed on State/Federal contracts; however, the DOT has an overall 24.3% goal it must achieve. JAXPORT has adopted the DOT's DBE Program goal. The DBE participation goal for this contract is **0%;** however, DBE participation is strongly encouraged . Further information about the DOT's DBE Program goal can be found at: www.dot.state.fl.us/equalopportunityoffice/.

JAXPORT will be monitoring potential or anticipated DBE utilization for contracts. When the low bidder executes the contract, information will be requested of the contractor's anticipated DBE participation for the project. While the utilization is not mandatory in order to be awarded the project, continuing utilization of DBE firms on contracts supports the success of Florida's Voluntary DBE Program, and supports contractors' Equal Employment Opportunity and DBE Affirmative Action Programs.

FDOT's search engine for the business directory can be found at: https://www3.dot.state.fl.us/EqualOpportunityOffice/biznet/mainmenu.asp

c. **CONTRACT ASSURANCE** – The Contractor, Subrecipient or Subcontractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of Department-assisted contracts. Failure of the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as JAXPORT deems appropriate, which may include, but is not limited to, 18-009.

1. Withholding monthly progress payments
2. Assessing sanctions;
3. Liquated damages; and/or
4. Disqualifying the Contractor from future bidding as non-responsible.

d. **RECORDS AND REPORTS** – Contractors are required to provide the following information to JAXPORT's Procurement Department SEB Programs Coordinator for verification.

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

1. Anticipated DBE Participation Statement (Form No. DBE-1)

   The "Anticipated DBE Participation Statement" shall be completed and submitted by the Contractor at the pre-construction conference. The Statement must only include companies certified as a DBE. The Statement can and should be updated when additions or deletions are made through the life of the contract. This will not become a mandatory part of the contract. It will assist JAXPORT and FDOT in tracking planned or estimated DBE participation.

   The Contractor must submit the Statement to:

   JAXPORT Procurement Department

   SEB Programs Coordinator

   2831 Talleyrand Avenue

   Jacksonville, Florida 32206

   Office Number: (904) 357-3003

   Fax Number: (904) 357-3077

   JAXPORT will review and approve the completed form and send the Statement to the District LAP Administrator or designee who will forward the information to the Department's Equal Opportunity Office at the following address:

   Florida Department of Transportation

   Equal Opportunity Office

   605 Suwannee Street. MS-65

   Tallahassee, Florida 32399-0450

   Fax Number: (850) 414-4879

2. Instructions for Reporting Actual Payments

   JAXPORT is required to report data on actual payments, minority status, and the type of work of all Subcontractors, Subconsultants, and major Suppliers. Each month the JAXPORT must report actual payments (including retainage) to all DBE Subcontractors, Subconsultants, and Suppliers. Payments to all non-DBE Subcontractors and Subconsultants can be reported either monthly or at the end of the project. Local Agency may submit this information to the District LAP Administrator or designee manually or electronically in an Excel spreadsheet.

   Subsequently, Prime Contractors are required to report payments made to DBE Subcontractors manually or electronically to JAXPORT's SEB Programs Coordinator on the **"Contractor's Monthly Report" FORM 5**.

e. **RESOURCES**

Florida Department of Transportation

Equal Opportunity Office

http://www.dot.state.fl.us/equalopportunityoffice/

49 CFRPart 26

https://www.civilrights.dot.gov/page/dbe-library

Disadvantaged Business Enterprise Directory

https://www3.dot.state.fl.us/EqualOpportunityOffice/biznet/mainmenu.asp

20. PUBLIC RECORDS

In accordance with Section 119.0701, Florida Statutes, the Contractor shall:

(a) Keep and maintain public records required by JAXPORT to perform the services; and

(b) Upon request from JAXPORT's custodian of public records, provide JAXPORT with a copy of the requested records or allow records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided for in Chapter 119, Florida Statutes, or as otherwise provided by law; and

(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract term and following completion of this Contract if Contractor does not transfer the records to JAXPORT; and

(d) Upon completion of this Contract, transfer to JAXPORT at no cost all public records in possession of Contractor or keep and maintain public records required by JAXPORT to perform the service. If Contractor transfers all public records to JAXPORT upon completion of this Contract, Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If Contractor keeps and maintains public records upon completion of this Contract, Contractor shall meet all applicable requirements for retaining

public records. All records stored electronically must be provided to JAXPORT upon request from JAXPORT's custodian of public records in a format that is compatible with JAXPORT's information technology systems.

The above requirements apply to a "Contractor" as defined in Section, 119.0701, Florida Statutes.

IF CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, IT IS THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT. CONTACT JAXPORT'S CUSTODIAN OF PUBLIC RECORDS AT (904) 357-3091 *public.records@jaxport.com*; JACKSONVILLE PORT AUTHORITY, PUBLIC RECORDS REQUEST, 2831 TALLEYRAND AVENUE, JACKSONVILLE, FLORIDA 32206.

21. SECURITY IMPLEMENTATION PROCEDURE

JAXPORT's rigid security standards include the Federal Transportation Worker Identification Credential (TWIC) program, which is administered by the Transportation Security Administration. The TWIC is required for unescorted access to all JAXPORT terminals. It is your responsibility as the Prime Contractor to ensure that all of your employees and sub-contract personnel working for your company have been properly screened and credentialed with the TWIC, and the JAXPORT Business Purpose Credential.

Transportation Worker Identification Credential (TWIC)

The TWIC is required for all Prime Contractor/Sub-Contractor employees working on the job site for this Contract. This credential is for all personnel requiring unescorted access to secure-restricted areas of Maritime Transportation Security Act (MTSA)-regulated facilities. TSA will issue a tamper-resistant "Smart Card" containing the person's biometric (fingerprint template) to allow for a positive link between the card and the individual.

The fee for obtaining each TWIC® is $125.25, and the credential is valid for five years. The pre-enrollment process can be initiated online at https://universalenroll.dhs.gov/ or at an IdentoGo TSA's Universal Enrollment Service Center.

TWIC: Universal Enrollment Centers

The Jacksonville Universal Enrollment Center is located at: 2121 Corporate Square Blvd. Building A, Suite 165, Jacksonville, FL 32216. The office hours are Monday-Friday: 09:00 AM –11:00AM / 12:00PM- 6:00 PM, For general information you can call the TWIC Call Center at 1-855-347-8371, Monday-Friday, 8 a.m. to 10 p.m. Eastern Time.

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

JAXPORT Business Purpose Credential

In addition to the TWIC, JAXPORT requires a JAXPORT Business Purpose Credential to be issued and registered at JAXPORT's Access Control Center located at the 9620 Dave Rawls Blvd. Jacksonville Fl. 32226 (Brick Building next to the Main Gate concourse). Hours of operation are Monday-Friday 7:30AM-4:30PM. The JAXPORT Business Purpose Credential is issued at no cost but expires at the end of the contract provisions.

The JAXPORT prime contractor is responsible for sponsoring all sub-contractors for the JAXPORT Business Purpose Credential.

Federal Training Requirement: (33CFR 105.215) Maritime Security Awareness Training

JAXPORT is a federally regulated facility under the Maritime Transportation Security Act of 2002 (MTSA) as codified under the US Code of Federal Regulation 33 CFR Chapter 1, Subchapter H Part 105.

33 CFR 105.215-Security training for all other facility personnel. All other facility personnel, including contractors, whether part-time, full-time, temporary, or permanent, must have knowledge of Maritime security measures and relevant aspects of the TWIC program, through training or equivalent job experience.

To meet the requirements of 33 CFR 105.215; the Prime Contractor/Sub-Contractor employees and all support personnel: Engineers, Suppliers, Truck Drivers, Laborers, Delivery persons etc. (NO EXCEPTIONS) are required to attend JAXPORT's Maritime Security Training given every Wednesday (10am, 2pm & 5pm) at JAXPORT's Access Control Building. Contact the JAXPORT Access Control Center to arrange for the training. JAXPORT will work with Contractors to conduct timely Maritime Security Training classes for larger groups.

All Prime Contractor/Sub-Contractor employees working on the job site for JAXPORT are required to attend JAXPORT's 33 CFR 105.215 (Security/Safety Training for All Other Facility Personnel) class at a cost of $35.00 per person. Arraignments can be made by calling JAXPORT Access Control Phone# (904) 357-3344.

TWIC Escort Provisions

To ensure contractors can begin work after they receive a Notice to Proceed, JAXPORT will allow prime contractors to have dedicated employee TWIC Escort(s) to handle those contractor employees who have not yet received their TWIC. Escorted employees must have a TWIC receipt validated by Access Control to receive a temporary JAXPORT Business Purpose credential.

Contractor deliveries from -TWIC vendors may be escorted by JAXPORT approved Prime

Contractor escorts. The prime contractor will be required to submit a request for TWIC Escort privileges to accesscontrol@jaxport.com . Once approved, the contractor's employee(s) will attend a JAXPORT provided MTSA TWIC Escort Class in addition to the standard MTSA 33 CFR 105.215 Security Class at a combined cost of $55.00. **These authorized individual(s) must have no collateral duties that will separate the escort from the escorted visitor while serving as escort.** Note - Limitations to the number of TWIC Escort authorizations will be set by the JAXPORT Public Safety Department.
Truck drivers, vendors, labor may not conduct escorts.

A Contractor authorized by JAXPORT to conduct an escort of a non-TWIC holder in a restricted area must have:

- Successfully completed MTSA 33 CFR 105.215 Security/ Escort Class at $55.00
- Have a valid TWIC on their person
- Have an approved JAXPORT TWIC ESCORT credential on their person
- Have a tamper-resistant laminated government issued photo identification card on their person.

TWIC Escorts must complete the JAXPORT TWIC Escort Form daily before getting to the access gate. The form will be kept on file at the JAXPORT Security Operations Center (SOC).

The Prime Contractor assumes full liability for the escorted person(s) while on JAXPORT property. The person under escort must have a continuous side by side escort in a secure-restricted area. Federally (USCG / TSA) imposed fines and or consequential damages resulting from a failed TWIC Escort by the Prime or Sub-contractor will be the responsibility of the JAXPORT Prime Contractor regardless of whether it is a direct employee.

Federal regulation definition: 33.CFR 101.105

Escorting means: ensuring that the escorted individual is continuously accompanied while within a secure area in a manner sufficient to observe whether the escorted individual is engaged in activities other than those for which escorted access was granted. This may be accomplished via having side-by-side companion or monitoring, depending upon where the escorted individual will be granted access. Individuals without TWIC may not enter restricted areas without having an individual who holds a TWIC as a side-by-side companion.

JAXPORT TWIC ESCORTS

JAXPORT may provide TWIC escorts at Tariff rate with advanced notice (Minimum 24 hours).
After review of the Contractors operation; JAXPORT will decide the number of escorts required to meet the federal regulation ratios of TWIC escort per non-TWIC worker. This will be based on operational requirements.

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

JAXPORT TWIC Escort Tariff Fees are published in JAXPORT's Tariff Schedule. Current rates are: **Mon.-Fri. 7:00 a.m. until 6:00 p.m**. Subject to two hour minimum $125.00 first two hours; $125.00 each additional two-hour block thereafter.

After 6:00 p.m. until 7:00 a.m. weekends, holidays Subject to two hours minimum $250.00; $125.00 each additional two-hour block thereafter.

Examples:
1. One TWIC Escort for an 8-hour day is $501.00 (= 4 TWIC Credentials)
2. One TWIC Escort for 1 5-day work week is $2505.00 (= 20 TWIC Credentials)

NOTE:

- All persons entering JAXPORT under TWIC Escort are required to have a tamper-resistant laminated government issued photo identification card on their person. The Identification Card must meet the USCG MTSA standards of 33 CFR 101.515. (State issued paper temporary drivers licenses are not acceptable identification).
- Any violations of the JAXPORT USCG approved Facility Security Plans will result in a Security Violation Hearing and be subject to temporary or permanent denial of access onto JAXPORT Terminals or ability to TWIC Escort.

Significant Designations on Terminals

- The terms "secure area" and "restricted area" do not mean the same thing. A **secure area** is defined as "the area over which an owner/operator has implemented security measures for access control." A **restricted area** is defined as" the infrastructure or locations identified in an area, vessel or facility security assessment or by the operator that require limited access and a higher degree of security protection."

- Entry through the main gates at Blount Island Marine Terminal (BIMT) constitutes entry into a secure area; tenant-controlled properties are designated as restricted areas per their individual FSPs.

- Entry into the main gates at Talleyrand Marine Terminal (TMT) and Mitsui/TraPac (MOL) Terminal constitutes entry into a restricted area.

- Entry into the cruise terminal provisions gate, crew gate or terminal doors constitutes entry into a restricted area.

Escorts

Truck drivers, vendors, labor may not conduct escorts. The only exception will be given to the ILA President, Vice President and Business Agent when escorting for purposes other than labor.

Truck Drivers: Truck drivers at the gate with no TWIC and/or no escort into a restricted area, will be turned around and will be assisted by security traffic control

to safely park until such time as the escort arrives. Truck drivers are responsible for making contact with their approved escort; JAXPORT security is not responsible for arranging or providing escorts. Escort must assume written custody of the driver. For cargo trucks, escorts may be in a vehicle providing the escort is able to visually observe the escorted at all times. This policy DOES NOT apply to POVs.

Contractors: Contractors without a JAXPORT badge and TWIC to access the port will be under escort as defined in this policy.

Contract Security (performing security duties): Must have a JAXPORT credential and a TWIC badge and may not be escorted.

Hired Escorts: Hired escorts would be commercial companies providing escort services for tenants in restricted areas; they must be sponsored by a tenant and may be vetted and approved with additional training and an administrative fee.

Vendors: Vendors without a TWIC will be turned away unless they have a dedicated & approved TWIC escort.

Visitors: According to Florida State Law, visitors without JAXPORT credentials may only visit five times in a 90-day period; this policy will remain in effect. Visitors should be vetted at least 24-hours in advance and await escort at the gate where they are seeking access. **A person with a TWIC badge, but without a JAXPORT credential will be treated as a "5/90" visitor.**

Vessel Crewmembers: When a vessel visits a JAXPORT terminal, the vessel's crew commonly needs to work in the immediate vicinity of their vessel (handling lines, taking draft readings, etc.). Some vessel crew may not have a TWIC, or they may not be U.S. Merchant Mariners. Although the dock, pier, or platform the vessel is moored to, is defined as a restricted area. There is no requirement to escort any of the vessel crewmembers that do not have a TWIC while they work alongside their vessel. **The area of dock directly adjacent to the vessel and extending in shore 18 feet from the vessel shall be designated the Crewmember Confinement Area (CCA).**

Vessel crewmembers may be escorted by approved escorts provided they complete the *TWIC Escort form* and escort under no more than a 1 to 5 ratio (excluding labor, contractors, and vendors). Prior to and upon completion of the escort, they are to contact the JAXPORT SOC at 904.357.3360.

Vessels, in coordination with the calling facility, shall ensure all crewmembers do not access Restricted Areas without approved escort. Any crewmember found outside the Crew Confinement Area (CCA) without a TWIC or approved escort may be considered a security breach under the JAXPORT FSP.

Seamen Center workers, ship's agents, etc who may pickup crewmembers outside the CCA must have TWIC Escort forms on hand and deliver them to the nearest facility gate once completed.

New Hire Provision: If a new hire moves from a secured to a restricted access area, they require side-by-side escort by a TWIC holder at all

times. If an individual is a newly hired vessel or facility employee who has applied for but not yet received a TWIC, the owner/operator may grant the individual accompanied access to secure areas of the vessel or facility. This accompanied access may be granted for a period of up to 30 consecutive calendar days from the date of TWIC enrollment, after notification through Homeport that the individual has passed the name-based check. Accompanied access may be extended for an additional 30 days by the local COTP if TSA has not yet issued the new hire's TWIC.

Company/tenant/operator is responsible for reporting and verifying new hires via Homeport.

This provision *may not* be used to grant temporary accompanied access to an individual being hired as a CSO, VSO, or FSO or any individual being hired to perform security as a primary duty.

Rail Access

Rail Access: It is the Coast Guard's position that, due to the unique aspects of railroad operations that can impact security at MTSA facilities, all railroad crew servicing secure areas of a MTSA facility should possess a TWIC. The following applies at:

Blount Island Marine Terminal: CSX will contact JAXPORT SOC via e-mail in advance of train arrival on BIMT to report crew TWIC status; if a crewmember does not possess a TWIC, JAXPORT contract security will provide escort. At no time will JAXPORT contract security personnel board trains or cross train tracks.

Talleyrand Marine Terminal: All Railroad personnel entering TMT must be in possession of a TWIC.

Any violation of the JAXPORT TWIC rail policy will be treated as a security breach under the JAXPORT FSP.

Additional Comments:

The following standards must be met for escorting in the restricted areas of JAXPORT:

1. Escorts must have in their possession a valid TWIC and a permanent JAXPORT credential.
2. Visitors must have a verified reason to enter the restricted area.
3. Side by side escort requirement must be continual and uninterrupted.
4. The person escorting must be able to immediately contact JAXPORT Security Operations Center at (904.357.3360), as indicated on TWIC Escort Form.

5. JAXPORT Security must be notified if the side by side escort has been compromised or the non TWIC holder engages in unlawful or suspicious activity.
6. Non TWIC holders will not be allowed to occupy a privately-owned vehicle (POV) without a JAXPORT authorized escort.
7. TWIC Escort Form indicates Facility and FSO responsible for the action of the escorted & employees.

TWIC Helpdesk: 1-866-347-8942

22. ELECTRONIC DATA REQUIREMENTS (E-BUILDER)

A. General Requirements:

a) Contractor must purchase at a minimum one (1) user license (see Section 21. H. for details) from JAXPORT and shall provide at a minimum, the following to its staff:

i. Computer: Minimum Intel Pentium® 4 Processor 2.4 GHz or equivalent processor with 512MB of RAM; recommended Centrino Duo® Processors 1.6 GHz or equivalent with 2GB of RAM, or higher.

ii. Computer Operation System: Windows XP, Windows Vista, or Windows 7

iii. Web Browser: Microsoft Internet Explorer 9

iv. Work and Spreadsheet Processors: Microsoft Office Word, Excel and Outlook

v. Scheduling Software: Microsoft Project or Primavera

vi. Internet Service Provider: A reliable ISP in the area of the Project

vii. Connection Speed/Minimum Bandwidth: DSL, ADSL or T1 Line for transferring a minimum of 3 Mbps Downstream and 512 Kbps Upstream

b) Contractor shall provide its management personnel assigned to this Project with access to personal computers and the Internet on a daily basis.

B. Project Web Requirements; Use of e-Builder Enterprise:

This project will utilize a web based project management tool called e-Builder EnterpriseTM. This web based application is a collaboration tool, which will allow all project team members continuous access through the Internet to important project data as well as up to the minute decision and approval status information.

Contractor shall conduct Project controls, outlined by JAXPORT and the Project Manager, utilizing e-Builder EnterpriseTM. No additional software will be required. Furthermore,

the JAXPORT Engineering and Construction department will assist Contractor in providing training of personnel.

Contractor shall have the responsibility for visiting the Project web site on a daily basis, and as necessary to be kept fully appraised of Project developments, for correspondence, assigned tasks and other matters that transpire on the site. These may include but are not limited to: Contracts, Contract Exhibits, Contract Amendments, Drawing Issuances, Addenda, Bulletins, Permits, Insurance & Bonds, Safety Program Procedures, Safety Notices, Accident Reports, Personnel Injury Reports, Schedules, Site Logistics, Progress Reports, Daily Logs, Non-Conformance Notices, Quality Control Notices, Punch Lists, Meeting Minutes, Requests for Information, Submittal Packages, Substitution Requests, Monthly Payment Request Applications, Supplemental Instructions, Construction Variation Directives, Potential Variation Orders, Variation Order Requests, Variation Orders, and the like. All supporting data including but not limited to shop drawings, product data sheets, manufacturer data sheets and instructions, method statements, safety MSDS sheets, Substitution Requests and the like will be submitted in digital format via e-Builder EnterpriseTM.

C. Electronic File Requirements:

In addition to the standard closeout submittal requirements detailed elsewhere in the Contract Documents, the Contractor shall also submit all closeout documents including all "As-Built Drawings", catalog cuts and Owner's Operation and Maintenance manuals in digital format. All documents (including as-built drawings) shall be converted or scanned into the Abode Acrobat (.PDF) file format and uploaded to e-Builder EnterpriseTM.

e-Builder EnterpriseTM is a comprehensive Project and Program Management system that JAXPORT has implemented for managing documents, communications and costs between the Contractor, Design Consultants and Owner. E-Builder Enterprise™ includes extensive reporting capabilities to facilitate detailed project reporting in a web-based environment that is accessible to all parties and easy to use.

D. Central Document Vault:

e-Builder EnterpriseTM system includes a central database that maintains all project information and manages project communications amongst team members.

E. Communication/Correspondence:

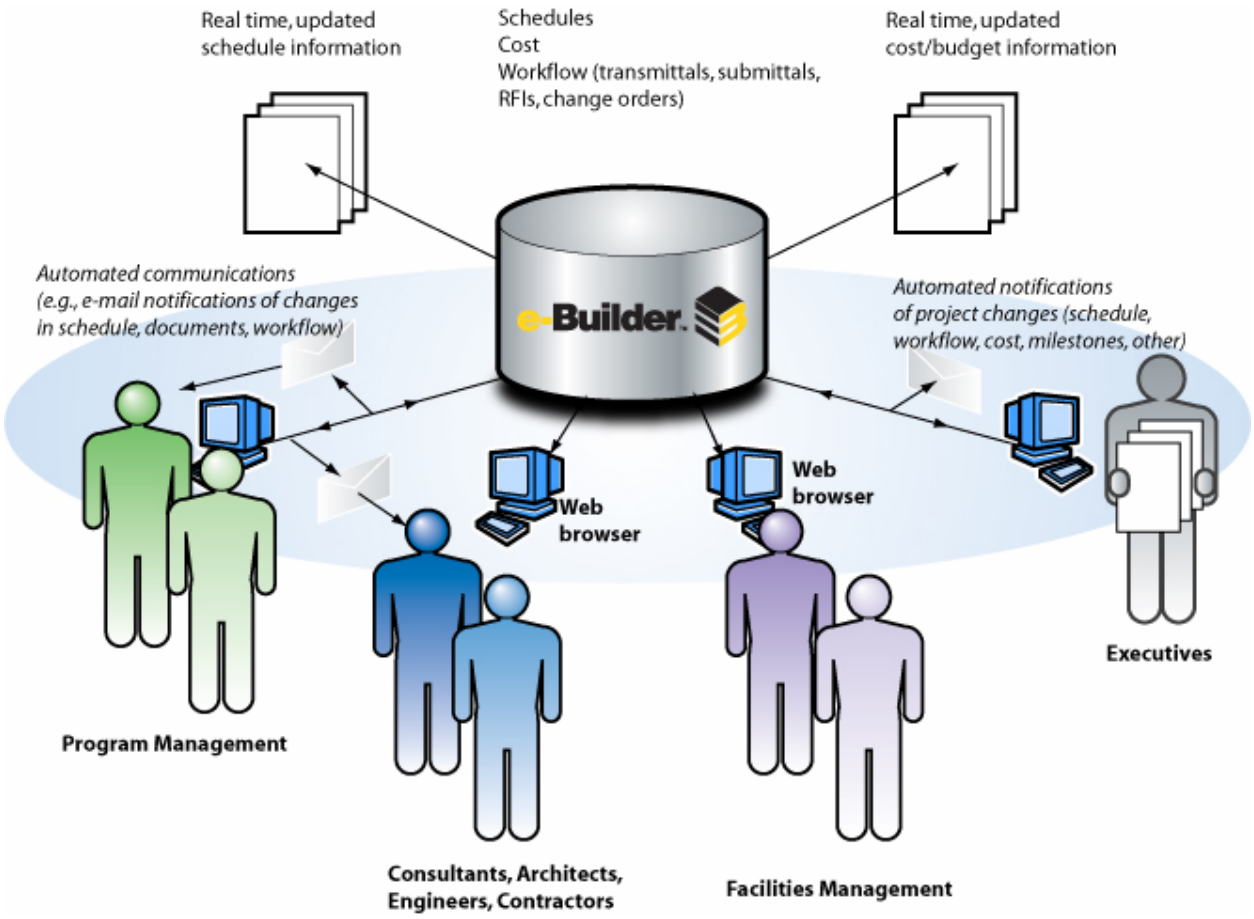
e-Builder provides electronic routable communication forms that provide historical tracking, documentation, and increased accountability of project members.

F. Project Calendars:

Meetings will be scheduled and maintained centrally on e-Builder EnterpriseTM.

G. Reporting:

All of the project and program data including documents, communications and costs are accessible through integrated online reports. These reporting tools are completely configurable by each user. All reports can be exported to Excel for added flexibility.



E-BUILDER LICENSING REQUIREMENTS

H. E-Builder Enterprise™ User Licenses:

Each user license includes full access to e-Builder Enterprise ™ including all of the documents and reports mentioned above. Furthermore, each user license provides the e-Builder software as a service (SaS) including:

- All hosting, operation, maintenance and data backup of the e-Builder Enterprise ™

software and documents which are maintained in state-of-the-art data centers located throughout the United States.

- Quarterly e-Builder Enterprise ™ software enhancements
- Unlimited phone, email and web-based support 24-hours:

The cost for licenses that the Contractor will need to acquire will be $1,800.00 per user, per license year and shall remain in effect for a minimum of one year from license activation. Payment must be in the form of a check; payable to JAXPORT for the number of licenses needed by the Contractor and will be collected prior to the Notice-to-Proceed.

Additional licenses can be obtained at any time during the project for the same price and license term by contacting JAXPORT's Project Manager.

How to Submit Your Bid Response in E-Builder

After reviewing the bid package invitation, use the Response Form tab to submit your bid response.

To submit your proposal:

1. Access the bid package.
2. Click the **Response Form** tab.
3. On the **Step 1: Bid Form** tab, enter your pricing on the bid form line items.

   Ensure that you provide pricing at the level of detail required by the bid manager (if applicable). Some line items may be lump sum, and others may require quantities and unit prices.

   > - If there are areas that do not pertain to your trade, enter a zero (0) value in that line.
   > - The Summary box at the top of the page maintains a running total of your entries for reference.

4. Click  (Save). Ensure that your work is saved periodically.
5. *Optional:* To export the bid items to a spreadsheet that you can customize or that you can share with your team, click  (Download). After updating the spreadsheet, click  (Upload) to re-import it.
6. On the **STEP 2: Response Documents** tab, click **Attach Documents**, and upload any supporting document needed to support your bid.
7. On the **STEP 3: Additional Required Info** tab, complete any additional questions or qualification statements that have been established by the bid manager. If any addenda have been issued, you are required to acknowledge receipt of the addenda on this page before submitting your bid.
8. Review the entire Response Form and click **Submit**.
9. When prompted, enter your e-Builder portal password and click **Submit Bid**.

The date and time that you submitted your bid is stamped on your Response Form. You will also receive an email confirmation.

Recall your Bid Response *(only if necessary)*

If you failed to submit all documents or see an error on a page **after submitting** your bid, you can make changes to your bid before the due date/time without any interaction from the bid manager. The bid manager has no record of your bid response until you click Submit again.

To recall your bid response

1. On the **Response Form** tab, click **Recall Bid**.
2. Optionally provide a reason for your recall and then click **Yes, I am sure**.

   Your previous submission information is displayed on the Response Form tab.
3. Click **Submit** to resubmit your bid prior to the bid due date/time.

Additional Notes

- ***After the bid due date/time has passed, the Submit button will be disabled. It is critical that you complete the entire process prior to the cut-off time. The system will not permit you to submit your proposal or bid after the deadline regardless of where you are in the process. As stated, the Submit button is systematically disabled promptly at the deadline and JAXPORT is unable to see anything you have uploaded prior to the bid due date/time. No late submissions will be permitted or accepted. Please plan accordingly.***
- If the bid manager adds or changes a bid item, or publishes an addendum, your bid will be set back to a Draft status. You will receive an email notification and will be required to reconfirm your bid and resubmit.
- When you need to step away from entering the quote, click  (Save). It is recommended that you save every 15 minutes. This will ensure that your changes are saved.
- If there are areas that do not pertain to your trade, enter a zero (0) value in that line item.
- If you have your qualifications in Word® or another program, copy and paste them into the qualifications.
- It is required that you acknowledge all the addenda, even if they do not pertain to your trade.
- It is recommended that you submit your quote at least 60 minutes before the due time so that you can rectify any errors. To submit the proposal, you must complete all the fields and acknowledge the addenda items.
- **Failure to submit all information requested will result in a proposal or bid being considered "non-responsive," and therefore will be rejected.**

BIDDERS MINIMUM REQUIREMENTS

JAXPORT PROJECT NO.: B2021.10
JAXPORT CONTRACT NO.: C-1791R
INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID
BLOUNT ISLAND MARINE TERMINAL

DATE: _____

Name of Bidder: _____

Address: _____

The following information is required in connection with your bid under Contract No. **C-1791R.**

1. Bidder is to furnish a complete set of your company's most recent audited financial statements. If no audited financial statements exist, provide firms most recent balance sheet, income statement, and statement of cash flows prepared internally, approved and attested to by your company president or chief executive officer. If the financial statements are more than 180 days old, the firm shall include evidence signed by an officer of the firm as to current financial condition in relation to the most recent reporting period.

2. Bidder is to furnish names and addresses of banks with which your firm maintains accounts, their telephone numbers and persons to contact.

   _____

   _____

   _____

3. Bidder is to list all of your current construction contracts.

Owner, Address, Phone #, Contact Name and Email	Work, Scope and Location	Contract Value	Prime Y/N	Percent Complete

4. Are you prepared to accomplish the work in accordance with the project time frame specified on page SC-2 as _**260**_ calendar days? _____ **Yes/No**

5. Bidders list names and addresses of principal trade creditors (principal is defined to mean banks, suppliers, vendors, etc.).

_____

_____

_____

6. Bidder is to list a minimum of five (5) projects similar in nature to the scope of work of this project with a contract value no less than $_**300,000.00**_ over the past five (5) years, previously performed as the primary Contractor, and date completed. The owners listed may be contacted for reference checks.

Owner, Address, Phone #, Contact Name and Email	**Scope of Work**	**Date Started & Completed**	**Prime Y/N**	**Contract Value**

7. Bidder is to list gross receipts from construction contracts during last five (5) years.

Year	**Gross Receipts From Construction Contracts**	Average Annual Volume: $
		Est. Annual Capacity: $
	$	Largest Job in the last 5 Years:
	$	
	$	

	$	
	$	Description:

8. Bidder is to list officials and key employees who will be engaged on work.

Name	Address	Position

9. In compliance with the General Conditions, Section II: Bidders must provide the names and resumes of the management team (Project Manager and Project Superintendent) to be assigned to this work at all times during the project with full authority to act for you as required by the General Conditions.

   Project Manager:_____

   Project Superintendent:_____

10. Bidder is to list major equipment to be employed on contract.

Equipment Type, Capacity and Manufacturer	Age	Condition	Location

11. Bidder is to provide the number of E-Builder licenses and duration needed for completion of the contract.

# of licenses _____ Duration of licenses_____

12. Have you determined that each proposed subcontractor is technically and financially able to perform the work to be subcontracted and prepared with equipment and personnel to complete the work within the time allowed by the specifications? _____ **Yes/No**

13. Is your firm prepared and equipped to complete the contract within the time prescribed herein? _____ **Yes/No**

14. By execution below your firm acknowledges that it has reviewed the agreement and shall execute the JAXPORT agreement form without exception or qualification.

15. Has your firm been debarred, suspended or otherwise prohibited from submitting a bid in the past 5 years?_____ If yes, provide complete details:_____
_____
_____

16. Has your firm been terminated for cause on any project in the past 5 years?_____ If Yes, all details:_____

Failure to furnish aforementioned information with the bid package may cause the bid to be non-responsive. Failure to assign the aforementioned management team to the project is a material breach of the contract that may result in termination of the contract in accordance with the General Conditions.

BIDDER (Company Name):_____

By (Signature): _____

Typed Name: _____

Title: _____

Date: _____

CONFLICT OF INTEREST CERTIFICATE

EXHIBIT B **JAXPORT Contract No.: C-1791R**

Bidder must execute either Section I or Sections II and III, hereunder, as required by Chapter 112 of the Florida Statutes. Failure to execute either Section I or Section II and Section III may result in the rejection of this bid/Bid.

SECTION I

I hereby certify that no public officer or employee of JAXPORT has a material financial interest or any business entity of which the officer, director or employee of the officer's, director's or employee's spouse or child is an officer, partner, director, or proprietor or in which such officer, director or employee or the official's, director's or employee's spouse or child, or any combination of them, has a material interest in this contract.

"Material Interest" means direct or indirect ownership of more than 10 percent of the total assets or capital stock of any business entity.

_____	_____
Signature	Company Name
_____	_____
Name of Official (type or print)	Business Address
_____	_____
City and State	Zip Code

CONFLICT OF INTEREST CERTIFICATE

EXHIBIT B **JAXPORT Contract No.: C-1791R**

SECTION II

I hereby certify that the following named public official(s) and/or JAXPORT employee(s) having material financial interest(s) (in excess of 10%) in this company have each filed Section III (Public Official Disclosure) with JAXPORT, Office of the Executive Director, 2831 Talleyrand Avenue, Jacksonville, Florida 32206-0005 prior to the time of bid opening.

Name	Title or Position	Date of PUBLIC OFFICIAL DISCLOSURE Filing

Signature

Company Name

Name of Official (type or print)

Business Address

City and State

Zip Code

CONFLICT OF INTEREST CERTIFICATE

EXHIBIT B **JAXPORT Contract No.: C-1791R**

SECTION III (Public Official Disclosure)

JAXPORT requires that a public official who has a financial interest in a bid or contract make a disclosure at the time that the bid or contract is submitted or at the time that the public official acquires a financial interest in the bid or contract. Please provide disclosure, if applicable, with bid.

Public Official Signature:_____

Public Official Name:_____

Public Position Held:_____

Position or Relationship with Bidder:_____

Date:_____

BID FORM

JAXPORT PROJECT NO.: B2021.10

JAXPORT CONTRACT NO.: C-1791R

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

BLOUNT ISLAND MARINE TERMINAL

BIDDER'S NAME:_____

The undersigned hereby proposes to furnish all materials, equipment, labor, and supervision for the above identified project, in accordance with the specifications and drawings for Contract No. **C-1791R**, at the following price:

Scope of Work: Furnish all labor, materials, equipment and supervision for work which consists of but limited to providing (designing, furnishing, installing, testing and placing in service) an upgrade to Automatic Highway Crossing Warning System (AHCW) at locations specified herein and shown on the Contract Drawings.

	Description	Quantity	Unit	Unit Price	Bid Total
	BASE BID				
	A. GENERAL CONDITIONS			**BID PRICES**	
1	Mobilization & Demobilization	1.000	LS	$	$
2	Erosion Controls	1.000	LS	$	$
3	Police Detail/Flagman	1.000	LS	$	$
	***Subtotal (Items 1 - 3)				$
	B. CONSTRUCTION WORK - DAVE RAWLS TRACK AND SIGNAL BASE BID				
4	Dave Rawls Blvd.- Proposed New Pavement Markings	1.000	LS	$	$
5	Dave Rawls Blvd.- Control Equipment/Wayside Material	1.000	LS	$	$
6	Dave Rawls Blvd.- Installation and Testing	1.000	LS	$	$
7	Dave Rawls Blvd.- Retire Existing Signal Facilities	1.000	LS	$	$
8	Dave Rawls Blvd.- Engineering Labor	1.000	LS	$	$
	***Subtotal (Items 4 - 8)				$
	TOTAL BASE BID (Items 1 - 8)				$
	OWNER'S OPTION				
	C. CONSTRUCTION WORK - INTERMODAL DRIVE TRACK AND SIGNAL OWNERS OPTION				
9	Intermodal Dr. - Spot Tie Replacement	1.000	LS	$	$
10	Intermodal Dr. - Thermite Weld Kits	1.000	LS	$	$
11	Intermodal Dr. - Excavation of Spoil Ballast in Crossing Approaches	1.000	LS	$	$
12	Intermodal Dr. - Ballast for Crossing Approaches C-1791R	1.000	LS	$	$
13	Intermodal Dr. - Surface, Line and Tamp Track	1.000	LS	$	$
14	Intermodal Dr. - Remove and Dispose Existing OSB	1.000	LS	$	$
15	Intermodal Dr. - Proposed New Heavy Duty Access Mats	1.000	LS	$	$
16	Intermodal Dr. - Remove Existing Pavment Markings	1.000	LS	$	$
17	Intermodal Dr. - Proposed New Pavement Markings	1.000	LS	$	$
18	Intermodal Dr. - Remove and Dispose Excavation of Spoil Ballast offsite	1.000	LS	$	$
19	Intermodal Dr. - Control Equipment/Wayside Material	1.000	LS	$	$
20	Intermodal Dr. - Installation and Testing	1.000	LS	$	$
21	Intermodal Dr. - Engineering Labor	1.000	LS	$	$
	***Subtotal (Items 9 - 21)				$
	BID SUMMARY				
	D. Dave Rawls Track and Signal Base Bid - **Total Lump Sum Base Bid (Items 1 - 8)**				$
	E. Intermodal Drive Track and Signal Owner's Option - **Total Owner's Option (Items 9 - 21)**				$
	TOTAL BID AMOUNT (Items 1 - 21)				$
	STANDBY RATES				
1	Standby rate per day	1.000	LS	NA	$
2	Standby rate per hour	1.000	LS	NA	$

(Submission of more than one bid form for the same work by an individual, firm, partnership or corporation under the same or different names and/or any alterations, exceptions or comments contained within the bid form shall be grounds for rejection of the bid).

Basis of Award: The Authority reserves the right to award to the Bidder whose price is the lowest, based on Total Base Bid Amount (Items 1 – 8). However, the Authority reserves the right to award to the Bidder whose price is the lowest, based on Total Base Bid Amount plus Owner's Option Amount (Items 1 - 21), subject to the availability of appropriated funds.

The Authority reserves the right to award this contract to the lowest, responsive, responsible bidder, and whose bid is fully conforming to the requirements of the bid documents. Nevertheless, JAXPORT reserves the right to waive informalities in any bid, to reject any or all bids, and to accept the bid which in its judgment will be in the best interest of JAXPORT. JAXPORT will be the sole judge of which Bid will be in its best interest and its decision will be final.

JAXPORT reserves the right to award this contract to the bidder offering the lowest price consistent with meeting all specifications, terms, conditions, delivery requirements set forth on this bid. No award will be made until all necessary inquiries have been made into the responsibility of the lowest conforming bidder and JAXPORT is satisfied that the lowest bidder met all the requirements, is qualified and has the necessary organization, capital and resources required to perform the work under the terms and conditions of the contract. JAXPORT reserves the right to accept or reject any or all Bids, in whole or in part.

_____
The required bid guaranty is attached hereto (see "Supplemental Instructions to Bidders") of the contract documents.

_____
Acknowledgment of the following addenda is hereby made (see "Supplemental Instructions to Bidders"):

Addendum No. 1, Dated: _____ Initials: _____
Addendum No. 2, Dated: _____ Initials: _____
Addendum No. 3, Dated: _____ Initials: _____
Addendum No. 4, Dated: _____ Initials: _____

See also "Bid Contents and Format" section of the "Supplemental Instructions to Bidders".

BID FORM

JAXPORT PROJECT NO.: B2021.10
JAXPORT CONTRACT NO.: C-1791R
INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID
BLOUNT ISLAND MARINE TERMINAL

Name of Contractor

AUTHENTICATION (see "Supplemental Instructions to Bidders")

Firm

Business Address | City | State | Zip Code

Mailing Address, if different from above

Authorized Signature | Date Executed

Typed Name | Title

E-Mail Address

Telephone Number | Facsimile Number

Company Federal Tax I.D. No. | Company's Business License No.

exceptions or comments contained within the bid form shall be grounds for rejection of the bid).

Basis of Award: The Authority reserves the right to award to the Bidder whose price is the lowest, based on Total Bid Amount (Items 1 – 21), subject to the availability of appropriated funds.

The Authority reserves the right to award this contract to the lowest, responsive, responsible bidder, and whose bid is fully conforming to the requirements of the bid documents. Nevertheless, JAXPORT reserves the right to waive informalities in any bid, to reject any or all bids, and to accept the bid which in its judgment will be in the best interest of JAXPORT. JAXPORT will be the sole judge of which Bid will be in its best interest and its decision will be final.

JAXPORT reserves the right to award this contract to the bidder offering the lowest price consistent with meeting all specifications, terms, conditions, delivery requirements set forth on this bid. No award will be made until all necessary inquiries have been made into the responsibility of the lowest conforming bidder and JAXPORT is satisfied that the lowest bidder met all the requirements, is qualified and has the necessary organization, capital and resources required to perform the work under the terms and conditions of the contract. JAXPORT reserves the right to accept or reject any or all Bids, in whole or in part.

The required bid guaranty is attached hereto (see "Supplemental Instructions to Bidders") of the contract documents.

Acknowledgment of the following addenda is hereby made (see "Supplemental Instructions to Bidders"):

Addendum No. 1, Dated: _____ Initials: _____

Addendum No. 2, Dated: _____ Initials: _____

Addendum No. 3, Dated: _____ Initials: _____

Addendum No. 4, Dated: _____ Initials: _____

See also "Bid Contents and Format" section of the "Supplemental Instructions to Bidders".

Name of Contractor

AUTHENTICATION (see "Supplemental Instructions to Bidders")

Firm

BID FORM

JAXPORT PROJECT NO.: B2021.10
JAXPORT CONTRACT NO.: C-1791R
INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID
BLOUNT ISLAND MARINE TERMINAL

Business Address	City	State	Zip Code
Mailing Address, if different from above			
Authorized Signature		Date Executed	
Typed Name		Title	
E-Mail Address			
Telephone Number		Facsimile Number	
Company Federal Tax I.D. No.		Company's Business License No.	

BID BOND FORM

JAXPORT PROJECT NO.: B2021.10
JAXPORT CONTRACT NO.: C-1791R
INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID
BLOUNT ISLAND MARINE TERMINAL

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal and _____ as Surety, are hereby held and firmly bound unto JAXPORT, in the sum of _____ dollars ($_____) as liquidated damages for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The Conditions of the above obligation are such that whereas the Principal has submitted to JAXPORT, a certain Bid attached hereto and hereby made part hereof, to enter into a Contract Agreement in writing, for construction of _____.

NOW THEREFORE,

(a) If said Bid shall be rejected or withdrawn as provided in the Instructions to Bidders attached hereto or, in the alternative,

(b) If said Bid shall be accepted and the Principal shall sign and deliver a formal contract document in the form of the Contract Agreement attached hereto (properly completed in accordance with said Bid) and shall furnish the specified Bonds required by Section V of the Contract Documents in the amount equal to one hundred percent (100%) of the base bid within ten (10) consecutive days after the receipt of said contract,

thence this obligation shall be void, otherwise, it shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder in no event shall exceed the amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of

the time within which such Bid may be accepted, and said Surety does hereby waive notice of any extension.

The sum herein stated shall be due and payable to JAXPORT, and the "Surety" herein agrees to pay said sum immediately upon demand of said JAXPORT in good and lawful money of United States of America; as liquidated damages for failure thereof of said "Principal".

IN WITNESS WHEREOF, the said _____, As "Principal" herein, has caused these presents to be signed in its name by its _____ and attested by its _____ under its corporate seal, and the said _____ as "Surety" herein, has caused these presents to be signed in its name by its _____ and attested by its _____ under its corporate seal, this _____ Day of _____A.D., 20___.

_____ (SEAL)
AS PRINCIPAL

ATTEST:

_____

Its _____

_____

Its _____

Signed, Sealed and Delivered
In the presence of:

By _____
AS SURETY

_____

_____

ELECTRONIC DATA REQUIREMENTS (E-BUILDER)

Exhibit **JAXPORT CONTRACT NO.: C-1791R**

Contractor agrees to the following:

"The E-Builder system is for authorized users only. Unauthorized use of this system is strictly prohibited and may be subject to criminal prosecution. Use of this network constitutes consent to monitoring retrieval and disclosure of any information stored within the system for any purpose including criminal prosecution. Information contained within this system is confidential, intended for the licensed users and may contain information that is proprietary to the user, and/or privileged, confidential and/or otherwise exempt from disclosure under applicable state and federal law. Use by anyone other than the licensed users is not a waiver of any applicable privilege."

_____	_____
Signature	Company Name
_____	_____
Name of Official (type or print)	Business Address
_____	_____
City and State	Zip Code

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(A),
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to _____**JAXPORT**_____

by _____
(print individual's name and title)
for _____
(print name of entity submitting sworn statement)

whose business address is _____

_____

and (if applicable) its Federal Employer Identification Number (FEIN) is _____

(If the entity has no FEIN, include the Social Security Number of the individual signing

this sworn statement: _____.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), **Florida Statutes,** means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), **Florida Statutes,** means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), **Florida Statutes,** means:

1. A predecessor or successor of a person convicted of a public entity crime; or
2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a "person" as defined in Paragraph 287.133(1)(e), **Florida Statutes,** means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **(Indicate which statement applies.)**

_____Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent of July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **(Attach a copy of the final order)**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

_____
(signature)

_____
(date)

STATE OF _____

COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

_____ who, after first being sworn by me, affixed
(name of individual signing)
his/her signature in the space provided above on this _____ day of _____, 20_____.

_____
NOTARY PUBLIC

My commission expires:

CONTRACTOR CERTIFICATION REGARDING SCRUTINZED COMPANIES LISTS

Respondent Contractor Name: _____

Contractor FEIN: _____

Contractor's Authorized Representative Name and Title:

_____ _____

Address: _____

City: _____ State: _____ Zip: _____

Phone Number: _____

Email Address: _____

Section 287.135 of the Florida Statutes prohibits agencies from contracting with a company on the Scrutinized Companies with Activities in Sudan List or on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, lists created pursuant to section 215.473, Florida Statutes, for goods or services over $1,000,000.

As the person authorized to sign on behalf of Respondent, I hereby certify that this company, listed above by "Respondent Contractor Name," complies fully with the law and is not listed on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List. I understand that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject the company to civil penalties, attorney's fees, and/or costs.

So Certified:

Authorized Representative's Signature _____

Date Signed: _____

ACKNOWLEDGEMENT AND ACCEPTANCE OF E-VERIFY COMPLIANCE

E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION

In accordance with the Governor of Florida, Executive Order Number 11-02 (Verification of Employment Status), whereas, Federal law requires employers to employ only individuals eligible to work in the United States; and whereas, the Department of Homeland Security's E-Verify system allows employers to quickly verify in an efficient and cost effective manner;

The Contractor agrees to utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of the contract. Contractors must include in all subcontracts the requirement that all subcontractors performing work or providing goods and services utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term. The Contractor further agrees to maintain records of its participation and compliance and its subcontractor's participation and compliance with the provisions of the E-Verify program, and to make such records available to JAXPORT upon request. Failure to comply with this requirement will be considered a material breach of the contract.

By signing below, I acknowledge that I have reviewed, accept and will comply with the regulations pertaining to the E-Verify program.

Company Name	Name of Official (Please Print)	
Signature of Principal	Title:	Date

CONTRACT RELATED DOCUMENTS

FOR

INSTALL RAIL GATES AT CROSSINGS (2 LOCATIONS) RE-BID

Project No.: B2021.10

Contract No.: C-1791R

BLOUNT ISLAND MARINE TERMINAL

CONTRACT RELATED DOCUMENTS

INDEX

GENERAL CONDITIONS

INDEX

SECTION I.: PRELIMINARY MATTERS

1. Definitions

a. Owner: The Owner is JAXPORT or its designee authorized in writing. The words "Owner", "JAXPORT", "JPA" and "Authority" shall mean the same and are used interchangeably.

Owner Representative/Project Manager: The Owner will designate an individual or firm to be Project Manager for all work to be accomplished under the contract. All instructions and correspondence to the Contractor will be issued by the Project Manager and all requests, invoicing, and correspondence from the Contractor will be directed to the Project Manager. The Project Manager will interpret the terms and conditions of the contract and be the judge of the performance of the Contractor on behalf of the Owner.

All correspondence relating to the contract shall be addressed to:

Brandon Braziel, Project Manager
JACKSONVILLE PORT AUTHORITY
ENGINEERING SERVICES
POST OFFICE BOX 3005
JACKSONVILLE, FL 32206-0005

b. Inspector: The Project Manager may appoint such Inspectors as he desires. They shall be authorized to inspect all work done, and materials furnished. They shall be authorized to call to the attention of Contractor personnel any failure of the Work or materials to conform to the specifications and contract. They shall have the authority to reject nonconforming materials and workman-ship, and construction methods or procedures which produce substandard results and to take appropriate action to avoid any dangerous or unsafe conditions. The presence of the Inspector shall in no way relieve the responsibility of the Contractor to comply with and perform all of the obligations specified in the contract documents. The Inspectors shall not be authorized to approve, direct, or establish any methods or procedures used by the Contractor in constructing the project. The Inspector is not authorized to approve any deviation from the contract documents nor any substitutions of materials or equipment.

c. Approval: Where utilized in this contract, "approval" shall constitute a review by the Owner only to satisfy itself as to the general conformance of the subject as to the intent of the contract. Approval by the Owner does not indicate any responsibility of the Owner towards the design, materials, substitutions, dimensions, fit, function, strength, finish or any other quantity, capacity, or quality of the subject at hand. Approval by the Owner shall not relieve the Contractor from its responsibility for full compliance with the contract requirements, at his sole expense.

d. Work: Where used in these contract documents, the word "Work" shall include all actions, materials, tools, equipment and all appliances, machinery, appurtenances and engineering (when specified), and labor necessary to perform and complete the contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the scope and intent of the contract. The terms "Work" and "Project" shall mean the same and may be used interchangeably.

e. Consultant: Where utilized by the Owner, the consulting firm or firms engaged by the Owner to provide professional services in conjunction with the planning, design, and construction of the Project will interpret the technical specifications and drawings, and will render judgments and decisions on matters of a technical nature as pertains to design and construction of the Project. The terms "Architect," "Architect/Engineer," "A/E," and "Engineer" shall all be construed to refer to the Consultant(s).

f. Contractor: The individual, firm, company or corporation contracting with JAXPORT for performance of Work and/or furnishing of materials for construction of the Project is defined in the contract documents.

g. Certificate of Substantial Completion: A written document representing a mutually agreed upon status of the progress of the Work as described in the contract documents, or a specified part thereof, between the Owner, the Contractor, and the Consultant whereby the Work is sufficiently complete and can be utilized for its intended purpose/ occupancy by the Owner without unreasonable inconvenience. The Owner reserves the right to make the final decision as to the status of the Work in reference to this definition.

2. Contract Documents

a. General: The contract documents shall consist of the bidding documents, contract forms, conditions of the General Conditions, specifications, drawings, all addenda issued prior to the execution of the Agreement, the approved Project construction schedule(s), all amendments, change orders, and Engineer's response to Contractor's "Request for Information (RFI)" of the contract documents relating to construction issued by the Owner's representative. These form the contract and what is required by any one shall be binding as if required by all. The intention of the contract documents is to include all labor, materials, equipment and other items necessary for the proper execution and completion of the Work so as to result in a fully operational and functional product. Any work, labor, equipment and materials that may reasonably be inferred from the specifications or drawings as being required to produce the intended result shall be supplied whether or not it is specifically called for in the contract documents. The contract Agreement shall be signed in duplicate by the Owner and the Contractor, unless otherwise stated.

b. Governing Law: The terms and conditions of this contract will be governed by the laws of the State of Florida, and venue for any action shall be in Jacksonville, Florida.

c. Conflicts and Discrepancies: The Contractor shall take no advantage of any error or omission which he might discover in the plans or specifications but shall, within 5 working days, notify the Owner of such discovery, who will then make such corrections and interpretations as it deems necessary for reflecting the actual spirit and intent of the plans and specifications. Failure to make notice within 5 days to Owner by the Contractor will result in work performed at Contractor's own risk and Owner will have no liability for any claim resulting therefore.

The Owner, after receipt of written notice by the Contractor in resolving conflicts, errors, and discrepancies between the various contract documents generally, will give precedence in the following order:

- Approved Change Orders
- Addenda issued prior to receipt of bids
- The executed Agreement Form
- Owner's response to Contractor's Request for Information (Form RFI)
- Supplemental Instructions to Bidders
- Special Conditions of the specifications
- General Conditions of the specifications
- Technical specifications
- Drawings
- Other documents as listed on the Agreement between Owner and Contractor, Form FA
- Bid

Figure dimensions on drawings shall govern over scale dimensions, and detailed drawings shall govern over general drawings.

3. Subcontracting or Assigning of Contract

a. The Contractor shall not subcontract more than 25 percent of the total value of jobsite Work, exclusive of the cost of all installed materials and equipment, without the prior written approval of the Owner. Qualifications of subcontractors may be required in the same manner as provided for the Contractor elsewhere in this contract (see "Instructions to Bidders").

b. The Contractor 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 Owner's prior written consent.

c. Contracts between the Contractor and subcontractors or suppliers shall be in accordance with the terms of this agreement as applicable.

d. Subcontracted work volume may reflect the DBE Participation goals described in the "Instructions to Bidders".

4. Separate Contracts

The Owner reserves the right to let other contractors perform work without conflict on the same or adjacent property. The Contractor shall cooperate and coordinate with any such other contractor(s).

5. Non-discrimination Provisions

The Contractor, upon execution of the Project agreement, certifies that it meets and agrees to the following provisions:

a. The Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, marital status or disability nor will it discriminate in hiring nor fail to make reasonable accommodation for qualified handicapped employees.

b. The Contractor agrees to comply with all applicable federal, state and local laws, including the Civil Rights Act 1964, as amended. The Equal Employment Opportunity Clause in Section 202, Paragraphs 1 through 7 of Executive Order 11246, as amended, relative to Equal Employment and the implementing rules and regulations of the Office of Federal Contract Compliance Programs are incorporated herein by specific reference. The Affirmative Action Clause in Section 503 of the Rehabilitation Act of 1973, as amended, relative to Equal Opportunity for the Disabled is incorporated herein by specific reference. The Affirmative Action Clause in 38 U.S.C. Section 2-12 of the Vietnam Veterans' Readjustment Assistance Act of 1974, relative to Equal Employment Opportunity for the special disabled veteran and veterans of the Vietnam era, is incorporated herein by specific reference.

c. An entity or affiliate who has been placed on the State of Florida's discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

To view a current list, visit:
http://dms.myflorida.com/business_operations/state_purchasing/vendor_information/convicted_suspended_discriminatory_complaints_vendor_lists

d. The Contractor agrees that if any of the obligations of this contract are to be performed by a subcontractor, the provisions of this Section I.5 shall be incorporated into and become a part of the subcontract.

6. Wage and Employment Laws

a. The Contractor shall observe and comply with Federal, State, and local laws relating to wages, rates of pay, and employment requirements, including applicable E.E.O. and Affirmative Action requirements.

b. ARTICLE 1, SECTION 6, OF THE CONSTITUTION OF THE STATE OF FLORIDA RECOGNIZES THAT THE RIGHTS OF PERSONS TO WORK SHALL NOT BE DENIED ON ACCOUNT OF THE MEMBERSHIP OR NON-MEMBERSHIP IN ANY LABOR UNION OR LABOR ORGANIZATION.

7. Royalties and Patents

The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.

8. Right to Audit

The Contractor agrees to provide JAXPORT or any of their authorized representative's access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions. JAXPORT will also be afforded access to all of the Contractor's records, including but not limited to payroll records, training books, correspondence, instructions, drawings, receipts, vouchers, memoranda and similar data relating to this Contract, and the Contractor will preserve all such records for (3) three years, or for such longer periods a may be required by law, after final payment.

The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.

SECTION II.: THE WORK

1. Contractor's Responsibility.

a. Until substantial completion or final acceptance of the Work (whichever comes first) by the Owner, the Work shall be under the complete care, custody, and control of the Contractor. The Contractor shall assume all risks of loss during its period of custody.

b. The Contractor shall supervise and direct the Work using its best skill, judgment, and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures, including implementation of the Contractor's Quality Control Program, the prudent exercise of all reasonable safety precautions, and for coordinating all portions of the Work under the contract to affect a timely completion, and resolving any delay or damages between itself and any other Contractor without involvement of the Owner.

c. Unless otherwise specifically noted, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.

d. The Superintendent shall maintain one complete set of the contract documents including approved shop drawings on the jobsite at all times that Work is underway.

e. The Contractor warrants to the Owner that all materials and equipment incorporated in the Work will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects, and in conformance with the contract documents. All Work not so conforming to these standards may be considered defective. In the event Work is rejected by the Project Manager, the Contractor shall correct, remove, and/or reconstruct such Work to conform to contract requirements at his sole expense including any testing or engineering costs necessitated thereby.

f. The Contractor shall pay all sales, consumer use, and other similar taxes required by laws and secure all permits, fees, and licenses necessary for the execution of the Work.

g. The Contractor shall promptly give all notices and comply with all laws, ordinances, permits, rules and regulations, order, and any public authority bearing on the performance of the Work, and shall notify the Owner if the drawings and specifications are at variance therewith, failure to do so shall result in Contractor’s responsibility for any losses or damages associated with the work.

h. The Contractor shall be responsible for the acts and omissions of all its employees, all subcontractors, suppliers, agents and employees and all other

persons performing any of the Work under a contract with, or under the supervision of the Contractor.

i. Contractor is required to record daily, the progress of the project and submit electronically in E-Builder; daily progress reports to the OWNER including information on the subcontractor's work, and the percentage of completion.

j. Contractor is required to and hereby agrees that it will exert every reasonable and diligent effort to assure that all labor employed by the Contractor and its sub-contractors for Work on the Project shall work in harmony with and be compatible with all other labor being used by building and construction contractors now or hereafter on the site of work covered by this contract.

Contractor further agrees that this requirement will be included in all subcontracts of the subcontractor as well as in the Contractor's own contract provided, however, that this provision shall not be interpreted or enforced so as to deny or abridge on account of membership or non-membership in any labor union or labor organization, the right of any person to work as guaranteed by Article I, Section 6 of the Florida Constitution.

k. Submittal Procedures.

Contractor shall submit each shop drawing Submittal for review electronically in E-Builder.

Preliminary Shop Drawing Data: Within 20 days after the Award of the Contract the Contractor shall submit to the Project Manager a complete listing of manufacturers for all items for which shop drawings are to be submitted.

Shop Drawing Submittal Schedule: Within 30 days after the Notice to Proceed, the Contractor shall submit to the Project Manager a complete schedule of shop drawing submittals fixing the respective dates for submission, the beginning of manufacture, testing, and installation of materials, supplies and equipment, noting those submittals critical to the progress schedule.

Submittal Log: Contractor shall provide an accurate updated log of submittals maintained by the Contractor and subject to review by JAXPORT at each scheduled progress meeting.

When reviewed by JAXPORT each of the shop drawings will be identified as having received such review, being so labeled and dated. Shop drawings labeled "REJECTED" will be returned to the Contractor for correction and re-submittal with the required correction indicated on the shop drawing or listed on a "Shop Drawing Review sheet".

If submitted drawings or schedules show a departure or variation from the Contract Requirements which are in the interest of JAXPORT and to be so

minor as not to involve a change in Contract Price or time for performance, JAXPORT may return the reviewed drawings without noting an exception.

Re-submittals will be handled in the same manner as first submittals. On re-submittals, the Contractor shall direct specific attention on the transmittal and on re-submitted shop drawings to revisions other than the corrections requested by the Project Manager on previous submissions. The Contractor shall make any corrections required by the Project Manager.

The Project Manager and JAXPORT'S Engineer of Record will review a Submittal/re-submittal a maximum of two (2) times after which the cost of review will be borne by the Contractor at JAXPORT'S Project Manager and Engineer of Record's standard hourly rate. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor, and will be considered "Rejected" until properly resubmitted.

If catalog sheets or prints of manufacturers' standard drawings are submitted as Shop Drawings, any additional information or changes on such drawings shall be typewritten or lettered in ink.

The minimum size for shop drawings shall be 11" X 17". Each shop drawing shall be clear, thoroughly detailed and shall have listed on it all Contract Documents references, drawing number(s), specification section number(s) and the shop drawing numbers of related work. Shop drawings must be complete in every detail, including location of the Work. Materials, gauges, methods of fastening and spacing of fastenings, connections with other work, cutting, fitting, drilling and any and all other necessary information per standard trade practices or as required for any specific purpose shall be shown.

Where professional calculations and/or certification of performance criteria of materials, systems, and or equipment are required, the Project Manager is entitled to rely upon the accuracy and completeness of such calculations and certifications submitted by the Contractor. Calculations, when required, shall be submitted in a neat, clear and easy format to follow.

Contractor shall keep one set of Shop Drawings marked with Project Manager's and/or Engineer of Record's approval at the job site at all times.

l. Shop Drawings and Samples.

(1) The Contractor shall furnish all samples and shop drawings as required for approval by the Owner. Details, number of copies required, and format will be mutually agreed upon at the Preconstruction Conference.

(2) Approval of shop drawings, samples, materials, substitutions, or equipment deviating in any dimension, fit, strength, finish, capacity, or other quality shall not relieve the Contractor from full compliance with the contract requirements, at its sole expense,

unless such exceptions, deviations, dimensions, substitutions, etc. are specifically identified and marked for attention on the shop drawing submittals and signed by the Contractor at time of submission. Approval of such specifically marked shop drawings shall permit the altered or substituted Work provided that any change in the contract price occasioned thereby is accomplished per Section III, "General Conditions". The Contractor shall bear full responsibility for coordinating proposed deviations, substitutions, dimensional changes and the like with all other affected trades, and for the full cost of any other subsequent modifications or changes to the Work necessitated thereby.

(3) The Contractor and if applicable, the Subcontractor(s) shall thoroughly check, coordinate, stamp, sign and approve all shop drawings prior to submittal to the Owner for review. If it appears to the Project Manager that such review, coordination, and approval has not been done or is not adequate, the shop drawings will be returned to the Contractor without action. The Contractor shall bear the sole responsibility for performance of Work or ordering requiring shop drawing approval, in advance of such approval.

(4) THE CONTRACTOR SHALL BEAR THE SOLE RESPONSIBILITY FOR ANY DELAYS TO THE WORK OCCASIONED BY OR RESULTING FROM ITSELF OR ITS AGENTS, SUBCONTRACTORS, SUPPLIERS, OR EMPLOYEES' DELAY OR FAILURE TO FURNISH COMPLETE, CORRECT, COORDINATED SHOP DRAWINGS IN A TIMELY MANNER. DELAYS INCURRED DUE TO REJECTION OF INCOMPLETE AND/OR NON-CONFORMING SHOP DRAWINGS SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR, AND NO ADDITIONAL CONTRACT COST OR TIME SHALL BE ALLOWED ON ACCOUNT OF SUCH DELAYS.

m. The Owner will furnish such information as is available at the time of contract award as to control points, benchmarks, recent surveys, or soundings concerning the worksite, and adjacent facilities, utilities, or structures. The Contractor, not the Owner, shall be responsible for any and all verifications required, extensions of survey control for the Work, ancillary surveying, location of centerlines, baselines, additional benchmarks, and any other measurements necessary for construction or design purposes, as appropriate.

Any markers or stakes set by the Owner or its representatives for control, inspection, or reference purposes during construction shall be preserved and left intact and undisturbed by the Contractor, unless in the way of construction. Prior to removal or relocation of any such marker by the Contractor, when necessary, the Contractor shall so inform the Owner's

representative at the jobsite. Any such markers negligently destroyed or disturbed by the Contractor shall be restored at his expense.

2. Execution of the Work.

a. General. The Contractor shall preserve and protect from damage all property along the line of work, or which is in the vicinity of, or is in any way affected by the Work, the removal or destruction of which is not called for by the plans. This applies, but is not necessarily limited to public and private property, public and private utilities, trees, shrubs, signs, monuments, fences, guardrails, pipe and underground structures, wharves, railroads, bridges, roadways (except natural wear and tear resulting from legitimate use thereof by the Contractor etc.), and whenever such property is damaged due to the activities of the Contractor, it shall be immediately restored to a condition similar or equal to that existing before such damage or injury was done by the Contractor, and at his own expense, or he shall make good such damage or injury in a manner acceptable to the Owner. In case of failure on the part of the Contractor to restore such property or to make good such damage or injury, the Owner may upon 48 hours' notice proceed to repair, rebuild or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any monies due or which may become due the Contractor under the contract.

b. Superintendence. The Contractor shall provide a qualified Superintendent on the Work throughout its progress, and shall specifically require that the Superintendent be present on the site at all times when any Work is being performed by itself or any of its subcontractors. Qualified Superintendent shall have a minimum of 10 years of construction experience, five of which are on similar projects in that capacity. All communications given to the Superintendent shall be as binding as if given to the Contractor. Once assigned, the Contractor's Superintendent shall not be replaced without prior written notice to the Owner. The Owner reserves the right to reject the assignment or reassignment of the Contractor's Superintendent. The Superintendent shall have full authority to execute the orders or directions of the Project Manager and to obtain or supply promptly any materials, tools, equipment, labor, and incidentals which may be required. The Contractor must provide on-site supervision at all times when work is being done. If, in the event that it is absolutely necessary for the Superintendent to be absent from the site, the Contractor shall notify the Project Manager, in writing, the assignment of the person on-site who will act in its place and be responsible for the project. This person must be an employee of the Contractor. Such superintendence shall be furnished regardless of the amount of Work sublet.

c. Design Engineering. Where design engineering is the responsibility of the Contractor, the Contractor must assure that the engineer who certifies the design is appropriately authorized to do so according to the regulations and laws of the local community and the State of Florida.

d. The Contractor shall have a responsible person available reasonably near the worksite and "on-call" on a 24-hour basis, 7 days a week; in order that it may be contacted in emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that might arise. The designated individual shall have full authority to take actions necessary to resolve such situations as previously described. For compliance with this requirement the furnishing of a local telephone number (non-toll) where such person can be directly reached will suffice.

e. Except in the interest of safety or protection of persons, or the Work, or property at the site or adjacent thereto, and except as may otherwise be indicated in the "Special Conditions", all Work at the site shall be performed during regular working hours, and Contractor shall not permit overtime Work or the performance of Work on Saturday, Sunday, or any legal holiday without Owner's consent given after prior written notice to Owner's Project Manager. In general, all Work shall be performed during daylight hours. For special operations, night Work may be done if so authorized in writing. No night Work shall be performed unless adequate artificial lighting has been provided and has been approved by the Inspector.

f. The Contractor shall not begin new items of Work to the prejudice of Work already started. The Owner may require the Contractor to finish a section or area on which Work is in progress before Work is started on an unrelated or additional section or area, unless the Contractor can clearly demonstrate to the Project Manager on a sound, rational, and convincing basis that its intended action is in the best interest of the Project.

g. The Contractor shall at all times conduct the Work in such a manner and in such sequence as to insure the least practicable interference with traffic. The Contractor's vehicles and other equipment shall be operated in such a manner that they will not be a hazard or hindrance to the public. Materials stored on the worksite shall be placed so as to cause as little obstruction as possible.

h. The Contractor shall arrange his work and dispose of his materials so as not to interfere with the operations of other contractors engaged upon adjacent work, and to join his work to that of others in a proper manner in accordance with the spirit of the plans and specifications, and to perform his work in the proper sequence in relation to that of other contractors, all as may be directed by the Owner. Each contractor will be held responsible directly to the Owner or any other contractor for any damage done by him, his agents, or his subcontractors to the work performed by another contractor. The Owner shall not be liable for damages caused between contractors.

i. The Contractor shall so conduct his operations and maintain the Work in such condition that adequate drainage will be in effect at all times. Existing functioning storm sewers, gutters, ditches, and other run-off facilities shall not be unnecessarily obstructed.

j. Heavy equipment shall not be operated close enough to new or previously existing structures to cause damage, disturbance or displacement.

k. The Contractor shall provide qualified and acceptable personnel to organize, schedule, manage, layout, and construct the Work as required by the contract documents and shall assure that all Project executives, superintendents, and foremen employed by it on this Project are competent, knowledgeable in the Work, conscientious, attentive to the Project, and reliable. All workers must have sufficient skills and experience to properly perform the work assigned them. Welder qualification records will be furnished by the Contractor at no cost to the Owner. All workers engaged on specialty work or detailed (highly skilled) work, or in any recognized trade shall have had sufficient experience in such work to perform it properly and satisfactorily and to operate the equipment involved, and shall make due and proper effort to execute the Work in the manner prescribed in the specifications, or the Owner may take appropriate action as prescribed below.

   The Contractor shall at all times maintain good discipline and order at the site. Whenever the Project Manager has determined that any person employed by the Contractor is incompetent, unfaithful, malevolent, intemperate, disorderly or insubordinate, such person shall, upon notice to the Contractor's Superintendent, be promptly removed from the Work and shall not again be employed on it except with the written consent of the Project Manager. Should the Contractor upon due notice fail to remove such person or persons, the Owner may withhold all monies which are or may become due to the Contractor, or may suspend the Work until such orders to remove said person or persons have been accomplished as set forth in Article 8(i). The Contractor shall protect, defend, indemnify and hold the Owner, its agents, officials, and employees harmless from any and all claims, actions or suits arising from such removal, discharge, or suspension of unsuitable employees of the Contractor.

l. The Contractor shall at all times keep the premises free from accumulation of waste materials and rubbish caused by the Work, and at the completion of the Work shall remove all rubbish, waste, salvage and surplus materials which resulted from the Work. The Contractor shall also remove all tools, construction equipment and machinery and shall leave the Project "broom clean", unless otherwise specified. All surplus and salvage material shall become the property of the Contractor unless otherwise specified in the contract documents.

m. The Owner shall have the authority to suspend the Work wholly, or in part, for such period or periods as may be deemed necessary due to unsuitable weather or other conditions which are considered unfavorable for the prosecution of the Work; to accommodate actions, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given, or to comply with any or all provisions of the contract. Such suspension shall be ordered in writing by the Project Manager giving the

Contractor, in detail, the reasons for the suspension and under what circumstances or conditions the Work may be permitted to resume.

Whenever the Work is suspended by the Owner for reasons other than the fault of the Contractor, an extension of time for completion of the Work due to such suspension may be made as allowed for in other sections of this contract.

Time extension shall be the Contractor's sole remedy unless otherwise agreed upon in writing prior to the commencement of work.

The Contractor shall not suspend operations or remove equipment or materials necessary for the completion of the Work without the prior permission of the Owner.

n. Cooperation with Port Operations.

(1) The Contractor understands that the Work will be performed on, or in the near vicinity of an operating marine terminal. The Contractor acknowledges that ship schedules and terminal operations take precedence over the Contractor's activities. Contractor shall provide upon request, manpower and equipment loading schedule for the project.

(2) The Owner will, insofar as possible, schedule berthing of ships, and general terminal operations, so as not to interfere with the Work of the Contractor. The Owner will review the schedule presented by the Contractor at the Preconstruction Conference and advise the Contractor of any known conflicts that may exist with terminal operations. The Contractor shall adjust its schedule to avoid those conflicts and ensure that its activities will not interfere or cause interference with terminal operations, at no cost to the Owner.

(3) Considering that ship schedules are not precise due to weather and delays at other ports, the Contractor will be notified a minimum of 24 hours prior to the expected arrival of a ship that will be berthed in, or affect the area of the Contractor's Work. The Contractor may be required to curtail its activities in the area affected to the satisfaction of the Project Manager until the construction site is available again at no cost to the Owner.

(4) The Contractor's Superintendent, however, during the course of the Work, shall contact the Terminal Director designee by telephone or personal contact, twice each day (early morning and late afternoon) concerning ship traffic schedules and cargo handling activities so as to minimize Contractor's "downtime" and improve his scheduling efforts.

(5) When the Work is stopped by the Authority for its convenience, or vessels are berthed in locations so as to impede the Contractor's Work, the total number of calendar days of delay shall be added

to the time allowed for the completion of the Project which shall be the sole remedy available to the Contractor.

(6) When it is necessary that a change or interruption be made in terminal operations in order to carry out a construction operation, the Contractor shall submit a request electronically in E-Builder with full details including a pre-approved schedule at least 72 hours prior to the time the change or interruption is required. The Owner shall make all reasonable efforts to comply with the request of the Contractor. The Contractor shall not proceed with such Work until it has received written notice from the Owner to so proceed.

o. Failure of Contractor to Maintain Satisfactory Progress.

(1) Time is of the essence in this contract, and as delay in the prosecution of the Work will adversely impact the Owner's business, it is important that the Work be prosecuted to completion. Moreover, the cost to the Owner for the administration of the contract, including engineering, inspection, and supervision, will be increased as the construction period is lengthened.

(2) The Contractor may be declared delinquent because of unsatisfactory progress under this contract when the contract time allowed has not been entirely consumed, but the Contractor's progress at any check period does not meet at least one of the following two tests:

(a) The percentage of dollar value of completed Work with respect to the total amount of the contract is within 15 percentage points of the percentage of contract time elapsed.

(b) The percentage of dollar value of completed Work is within 15 percentage points of the dollar value which should have been performed according to the Contractor's own progress schedule previously approved by the Owner.

(3) The Contractor will be declared delinquent because of unsatisfactory progress under this contract should either of the following circumstances occur:

(a) The contract time allowed has been consumed and the Work has not been completed.

(b) The contract time allowed has not been entirely consumed, but the Contractor’s progress at any check period does not meet either of the two tests described under Sub-article (2) above.

(4) A Contractor determined delinquent will be disqualified from further bidding by the Manager of Procurement and also will not be approved as a subcontractor so long as the delinquency status exists. Also, any individual, firm, partnership or corporation

affiliated with a delinquent Contractor to the extent that it is dependent upon the delinquent Contractor for either personnel, equipment, or finances shall likewise be disqualified. The Owner additionally reserves all rights and options pertaining to available legal remedies for such delinquency. A Contractor disqualified under the requirements of this Article will be removed from a delinquent status upon receipt of satisfactory evidence by the Owner's Project Manager and approval of Procurement that its progress is no longer delinquent, provided the contract time has not lapsed.

(5) The principal progress verification will occur monthly and will generally coincide with receipt by the Owner's Project Manager of the Contractor's monthly Application for Payment and Work Progress Schedule.

(6) Preliminary notices of delinquency will be sent to the Contractor by facsimile mail immediately thereafter, and confirmed by certified mail. The Contractor, once given such a preliminary notice of delinquency, will not be finally declared delinquent until a period of 10 calendar days after the preliminary notice has elapsed. During this 10-day period, the affected Contractor may request an extension of time or present other considerations that would affect its delinquency to which it feels it is entitled. Final notification of delinquency will be made by certified mail after the expiration of this 10-day period provided no extensions of time or other considerations are deemed proper by the Owner, and provided the delinquency status has not been corrected. Contractor shall provide an acceptable recovery schedule to Owner for approval.

Owner's failure to terminate for delinquency shall not serve as a waiver by the Owner.

(7) The Owner may grant extensions of time during the prosecution of the Work, as allowed under the contract provisions regardless of the Contractor's delinquency status. The contract will be considered complete when all Work has been completed and accepted by the Owner, and final payment has been issued to the Contractor.

3. Substantial Completion

The Substantial Completion, as defined in the "Definitions" of Section I.1. g, will be initiated in writing by the Contractor and/or the Owner for the purpose of making available the stated Work, or a specified part thereof, for its intended use. The Owner and the Contractor will conduct an inspection of the stated Work for compliance with the contract documents. The Owner will have prepared a written Punch List of all items and/or the deficiencies for the Work covered by the

Certificate of Substantial Completion. The Punch List shall become a part of the Certificate of Substantial Completion and must be completed prior to final acceptance of the Work. If the Owner agrees that the Work is ready for occupancy, a Certificate of Substantial Completion will be prepared by the Owner on the form included in the contract documents. The Statement shall be completed in its entirety and shall be signed by the Engineer, Contractor, Tenant and Owner, where applicable. Final payment and any retainage may be withheld until completion of the Punch List items by the Contractor, and accepted by the Owner. The Owner may supplement the Punch List at any time based on the disclosure of defective or incomplete work.

4. Tests and Inspections

a. Except as specifically stated in writing by the Owner, the Contractor shall establish and conduct its own quality testing program for materials and other Work performed thereon under this contract. Testing may include but not be limited to soils, aggregates, compaction, masonry, concrete, asphalt, painting, metals, pressure tests, welding, coatings, insulation, water quality, electrical circuitry, machinery, equipment or other applicable items. The Contractor shall, prior to the Preconstruction Conference, furnish electronically in E-Builder to the Owner a listing or schedule of testing it proposes to conduct for informational purposes. Results of such tests as performed by the Contractor shall be furnished electronically in E-Builder to the Owner within 48 hours of such testing, for information. No separate payment will be made by the Owner for any testing accomplished by the Contractor but the cost thereof will be considered as included in the overall contract price for the related items of Work.

b. The Owner may employ, at its expense, an independent testing laboratory for the purpose of performing such tests as may be deemed necessary by the Owner.

   If any Work or materials are found to be deficient as a result of such tests, the Contractor shall promptly correct same, or replace, in accordance with the specifications, and it may be required to revise and upgrade both construction and quality control procedures. If the Owner deems it necessary that additional testing shall be made of such correction or replacement, the Contractor shall pay the costs thereof.

c. The Owner reserves the right to inspect any and all parts of the Work underway for conformance with the contract requirements. The making of tests by the Contractor, regardless of their indication, shall not relieve the Contractor of sole responsibility for Work that is defective or not in accordance with the requirements of the contract.

d. Should the cost of remediation of deficient work be commercially wasteful, the Owner at its sole option may retain the nonconforming work for no cost to the Owner for that work.

5. Time

a. All time limits stated in the contract documents shall be consecutive calendar days unless otherwise stated.

b. The contract completion time shall be as shown in the "Special Conditions". Timely completion is an essential element of this contract. Prevailing conditions of weather and environment at the worksite and the Owner's continuing port operations in the vicinity have been taken into account in establishing the contract time allowed for the Work.

c. The Notice to Proceed will not be given until after receipt of evidence of insurance (in the manner specified) and contract bonds, and following the Preconstruction Conference. If the Preconstruction Conference is waived by the Owner, the Notice to Proceed will be issued immediately upon receipt of the required bonds and certificates by the Owner.

6. Warranties and Guarantees.

a. The Contractor shall correct any Work that fails to conform to the requirements of the contract documents where such failure to conform appears during the progress of the Work, and shall remedy any defects due to faulty materials, equipment or workmanship which appears within the warranty period. The Warranty Period is as specified in the "Special Conditions", unless the Technical Specifications require a longer warranty period for all or portions of the Work. The provisions of this condition apply to work done by subcontractors, as well as to work done by direct employees of the Contractor. The Contractor shall insure that its subcontractors/suppliers are bound by this requirement.

b. The Contractor shall furnish all written warranties/guarantees for any materials or equipment electronically in E-Builder, which are required under this contract, or separately warranted by the manufacturers. Final payment shall be withheld from the Contractor until all warranty documents have been furnished to the Owner. All warranties shall be issued consistent with the requirements of these contract documents.

SECTION III.: CHANGES AND DISPUTES

1. Changed Conditions.

The Contractor shall promptly and before such conditions are disturbed, notify the Owner in writing of: a) subsurface or latent physical conditions at the site differing materially from those indicated in the contract documents, b) previously unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in this contract, or c) underground utilities or other obstructions not shown on the plans or reasonably expected to exist in the way of the Work at such location(s).

Notification shall be within 5 calendar days of discovery by the contractor. The Owner shall promptly investigate the conditions, and if it finds that such conditions do so materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for performance of this contract, an equitable adjustment may be made, and the contract modified in writing accordingly by Change Order. Any claim by the Contractor for adjustment under this clause shall not be allowed unless timely notification has been made by the Contractor, or unless the Owner has granted a further period of time for determination of the extent of delay, magnitude of changed conditions, or determination of corrective action required.

2. Changes in the Work.

a. Change Orders - General. JAXPORT does not anticipate the issuance of Change Orders to the contract. The Contractor should not anticipate Change Orders; nor view any Change Orders that should occur as the opportunity for windfall profit. The Owner may authorize changes in the work consisting of additions, deletions or modifications to scope or schedule and the contract price or time (or both) being adjusted accordingly. All such changes in the Work shall be authorized by a written Change Order which shall document the change and specify any contract modifications such as price or schedule. No changes to the Work are authorized until the Contractor and the Owner have executed a formal Change Order. Verbal instructions do not constitute a Change Order.

(1) Either the Owner or the Contractor may initiate a Change Order request. In either event, the Contractor shall promptly prepare and submit electronically in E-Builder to the Owner a detailed justification for the Change Order request (when initiated by the Contractor) and a detailed quotation for the changed work, both time and money. The detailed quotation shall be complete and definitive as to the true costs of the changed work. The Owner will also require a complete breakdown of all costs that will be experienced by Contractor and all sub-tier contractors. Single line statements are not acceptable. The breakdown of costs may include, but are not limited to:

- Labor Hours (broken down by craft)
- Materials (broken down by units)
- Equipment (broken down by units)
- Transportation (specify)
- Supervision (specify)
- Taxes (specify)
- Permits (specify)
- Insurance and Bonding (specify)
- Mobilization (show detail of cost)
- Demobilization (show detail of cost)
- Any other information requested by the Owner
- Mark-up for Profit and Overhead (see Section III 2.a.2.)

The breakdown of time shall include a thorough justification for any extension of the contract completion date which may include a time impact analysis, if requested by the Owner. Only those items of Work that directly affect the "critical path" of the Project will be considered for time extension.

Additional equipment costs on change orders: For any machinery or special equipment (other than Small tools), including fuel and lubricant, the Contractor will receive 80% of the "Rental Rate Equipment Watch or an amount less than" for the actual time that such equipment is in operation on the work, and 40% of the "Rental Rate Equipment Watch or an amount less than" for the time the equipment is directed to standby and remain on the project site, to be calculated as indicated below. The equipment rates will be based on the latest edition (as of the date the work to be performed begins) of the "Rental Rate Equipment Watch for Construction Equipment" or the "Rental Rate Equipment Watch for Older Construction Equipment or an amount less than," whichever is applicable, as published by Equipment Watch, Penton Media, Inc. (version current at the time of bid), using all instructions and adjustments contained therein and as modified below. On all projects, the Engineer will adjust the rates using regional adjustments and Rate Adjustment Tables according to the instructions in the Equipment Watch.

Allowable Equipment Rates will be established as set out below:

(I) Allowable Hourly Equipment Rate = Monthly Rate/176 x Adjustment Factors x 80% or an amount less than.

(II) Allowable Hourly Operating Cost = Hourly Operating Cost x 80% or an amount less than.

(III) Allowable Rate per Hour = Allowable Hourly Equipment Rate x 80% + Allowable Hourly Operating Cost or an amount less than.

(IV) Standby Rate = Allowable Hourly Equipment Rate x 40% or an amount less than.

The Monthly Rate is The Basic Machine Rate plus Any Attachments or

an amount less than.

Standby rates will apply when equipment is not in operation and is directed by the Engineer to standby at the project site when needed again to complete work and the cost of moving the equipment will exceed the accumulated standby cost. Standby rates will not apply on any day the equipment operates for eight or more hours. Standby payment will be limited to only that number of hours which, when added to the operating time for that day equals eight hours. Standby payment will not be made on days that are not normally considered work days on the project.

JAXPORT will allow for the cost of transporting the equipment to and from the location at which it will be used. If the equipment requires assembly or disassembly for transport, JAXPORT will pay for the time to perform this work at the rate for standby equipment or an amount less than.

Equipment may include vehicles utilized only by Labor, as defined above.

(2) The percentage mark-up for those items listed in Section III, Paragraph 2.a.1. shall be limited to 15 percent. All subcontract costs will be limited to 5 percent mark-up per tier, with a maximum of 10% regardless of the number of tiers.

(3) All submissions of costs shall be in a form that is acceptable for verification by the Owner. Vendor quotations or Purchase Orders shall support material costs. Labor and supervision costs shall be supported by typical certified payroll documents. Equipment costs must be within the norm of published equipment rental rates for the Jacksonville area.

(4) The pricing of Change Orders shall be determined in one of three ways:

(a) For changes in Work for which unit prices were already established in the contract, the established unit prices shall also apply to work performed under the Change Order. Established contract unit prices are all inclusive of costs, overhead and profit and shall not incur any additional mark-up.

Force Account: Upon written directive of the Owner, the Contractor shall perform the work utilizing the "time and materials" method of pricing, under which all costs are auditable and payment to the Contractor will be limited to those actual expenses, plus the mark-ups allowed in Section III. 2.a. (2). The Change Order will be limited to an estimated cost not-to-exceed amount for fiscal control. Should this amount be reached due to unforeseen conditions, an additional Change Order will be sought.

(b) By agreement of both parties of a lump sum amount for the change to the contract. Determination of the lump sum amount will require submission of a breakdown of costs as detailed in Section III.2.a.(1) and mark-ups applied from Section III. 2.a.(2), and any other information reasonably requested by Owner.

b. Change Order Form. All Change Orders shall be executed on the form approved by JAXPORT. Execution of a Change Order resolves all issues of time and compensation. No other method of reservation of rights shall be recognized.

c. The Contractor shall keep and present in such form as the Owner may direct, a correct and current account of all direct costs of the Work performed. All documentation shall be maintained according to generally accepted accounting practices (GAAP), in such form and detail as to be audited for accuracy and content. JAXPORT'S Project Manager shall periodically check and certify the costs. Payments shall be made to the Contractor based upon the certified costs of the Contractor, with mark-ups, as set forth in Section III.2.a.(2).

d. Bond Liability. Any changes made in the specifications for the work by Change Order (whether such changes increase or decrease the amount thereof) or any change in the manner or time of payments made to the Contractor, or any change in the contract completion date occasioned by changed Work shall not, in any way, annul, release or affect the liability on the bond provided by the Contractor. The Contractor is solely responsible for notification of Surety of any Surety changes.

Notwithstanding the foregoing, it is understood and agreed that the Owner may, at any time, issue written instructions to the Contractor requiring changes within the scope of the work or schedule that are consistent with the general intent of the contract documents, at no extra cost to the Owner.

3. Claims.

a. Claims for Extra Work. If the Contractor considers that any written instructions, acts, or omissions of the Owner or any of the Owner's agents, employees, consultants, contractors, subcontractors or suppliers have caused or will cause the Contractor to incur extra costs or time not included in the contract documents, the Contractor shall give written notice to Owner of such claim within 5 calendar days after the initial date of such acts, omissions, instructions or occurrence, and shall not proceed with the Work until receipt of the Owner's written directive to do so. Upon receipt of such a directive, the Contractor shall proceed in accordance therewith even though agreement may not have been reached as to whether said instructions require work that is within or outside of the scope of the

contract documents or, if outside, the amount of the equitable price or time adjustment to which the Contractor is entitled for the performance thereof.

No claim for such extra costs or time shall be allowable in the absence of the written directive of the Owner and the timely written notice by the Contractor. In the absence of either or both, the Contractor's claim for extra costs or time on account thereof shall be deemed to have been waived.

b. Claims for Damages. Should the Contractor suffer injury or damage to any other party because of any act or omission of the other party or of any of its employees, agents, or others for whose acts it is legally liable, claim shall be made in writing to the Owner within 5 calendar days after the first observance of such injury or damage.

(1) Should the "no damages for delay" clause not be enforced by the court, the Contractor waives any claim for extended home office overhead that may result from any delay on the project.

(2) The Contractor specifically waives any right to seek attorney's fees and construction claim preparation costs from the Owner.

(3) The Contractor shall not present nor recover on any claim from the Owner based on any formula(s), hypothetical or statistical methodologies used in damage computation. The Contractor may only recover if it can provide documented pay records specifically indicating any alleged damage, loss, or cost.

4. Completion of Work by Owner

Upon declaration of default, the Owner shall have full power and authority to appropriate and/or use any or all materials and equipment on the site which are suitable and acceptable, and may enter into an agreement with others for the completion of the Work under the contract, or may use other methods which in the opinion of the Project Manager are required for the completion of the Work in an acceptable manner. All costs and charges incurred by the Owner because of the Contractor's default, including the costs of completing the Work under the contract, shall be charged against the Contractor and its Surety. In case the expense so incurred by the Owner is less than the sum which would have been payable under the contract if it had been completed by the defaulting Contractor, the defaulting Contractor shall be entitled to receive the difference.

Owner reserves their right to supplement, with additional workers and equipment, the Contractor's forces if Contractor is not reasonably projected to complete the project in a safe and timely manner. Owner shall give the Contractor 10 day's written notice of its intent to utilize supplemental forces. The Contractor shall have the primary responsibility to coordinate all work on the project and shall fully cooperate with all other forces.

In case the expense incurred by the Owner pursuant to this Section exceeds the sum which would otherwise have been payable under the contract, then the Contractor and its Surety shall be liable and shall pay the Owner the amount of the excess.

If, after the 10-day default notification period, and prior to any action by the Owner to otherwise complete the Work under the contract, the Contractor should convincingly establish its intent and ability to prosecute the Work in accordance with the Owner's requirements, the Owner may elect to permit the Contractor to resume the Work in which case any costs to the Owner incurred by the delay or from any reason attributable to the delay will be reimbursed by the Contractor or Surety.

5. Default and Termination

a. If the Contractor fails to begin the Work under the contract promptly upon receipt of the Notice to Proceed, or fails to perform the Work with experienced and effective supervision, sufficient workers, sufficient equipment, or sufficient materials to assure the prompt completion of the contract (i.e., the Contractor is declared delinquent), or performs the Work unsuitably, or neglects or refuses to remove materials or to perform anew such Work as may be rejected as unacceptable and unsuitable, or discontinues the prosecution of the Work, or fails to resume Work which has been discontinued, or becomes insolvent or is declared bankrupt, or files for reorganization under the bankruptcy code, or commits any act of bankruptcy or insolvency, either voluntarily or involuntarily, or allows any final judgment to stand against them unsatisfied for a period of 10 calendar days, or makes an assignment for the benefit of creditors, or fails to comply with contract requirements regarding minimum wage payments, E.E.O. or DBE requirements, or for any other cause whatsoever fails to carry on the Work in an acceptable manner, or if the Surety executing the bond for any reasonable cause becomes unsatisfactory in the opinion of the Owner, the Owner will give notice in writing to the Contractor and its Surety of such delay, neglect, delinquency or default.

b. If the Contractor, within a period of 10 calendar days after written notice of default from the Owner delivered to the Contractor's representative on the jobsite, or by facsimile transmission and confirmed by certified mail, does not proceed to correct the conditions of which complaint is made, the Owner shall, upon written notification from its Project Manager of such delay, neglect, or default and the Contractor's failure to correct such conditions, have full power and authority without breaching the contract to take the prosecution of the Work out of the hands of the Contractor and to declare the contract in default and make demands upon the Surety consistent with the rights set forth in the Performance Bond attached herein.

c. The Owner may, after written notice to the Contractor, terminate the contract or a portion thereof for just cause such as default or for other reasons which are determined to be in the interest of the Owner. Such reasons for termination may include but are not necessarily limited to national defense or national emergency which creates a serious shortage of materials, orders from duly constituted authorities relating to energy conservation, and restraining order or injunctions obtained by third-party

citizen action resulting from national or local environmental protection laws or where the issuance of such order or injunction is primarily caused by acts or omissions of persons or agencies other than the Contractor and unacceptable interference with Operations.

d. When a contract or any portion thereof is terminated before completion of all items of Work in the contract, payment will be made for the actual number of units or items of Work completed at the contract unit price, or as mutually agreed for items of Work partially completed or not started. No claim for loss of anticipated profits shall be allowed and are specifically waived by Contractor.

e. Reimbursement for mobilization expenses (when not otherwise included in the contract) including moving equipment to the job will be considered where the volume of Work completed is too small to compensate the Contractor for these expenses under the contract unit prices; the intent being that an equitable settlement will be made with the Contractor.

f. Acceptable materials procured by the Contractor for the Work that have been inspected, tested, and approved by the Owner, and that are not incorporated in the Work may be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Project Manager.

g. Termination of a contract or a portion thereof under the provisions of this sub-article shall not relieve the Contractor of its responsibilities for the completed portion, nor shall it relieve its Surety of its obligation for and concerning any claims arising out of the Work performed.

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

In the event of termination for convenience, JAXPORT will pay the Company for all disbursements and expenses that the Company has incurred, or those for which it becomes obligated prior to receiving JAXPORT's notice of termination. JAXPORT will also pay the Company costs incurred less the reasonable resale value, of materials or equipment that the Company has already ordered, obtained or fabricated in connection with the Contract.

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 JAXPORT may reasonably request, including all reasonable efforts to provide for a prompt and efficient transition as directed by JAXPORT.

JAXPORT 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.

6. Delays and Extensions of Time

In the event that the Contractor, in the performance of the Work, encounters inefficiencies, disruptions, or delays as a result of the partial suspension or resequencing of work thereof, or incidental interference therewith by the Owner or its other contractors, or as a result of other unforeseeable causes beyond the control and without fault or negligence of the Contractor such as, but not limited to, Acts of God, fire, flood, war, governmental priority controls, railcar shortages, general strikes, and labor work stoppages, the Contractor shall notify the Owner in writing within 5 calendar days of the commencement of the delay that he intends to request additional time for contract completion. Such requests for additional time shall be decided by the Owner within 5 working days of receipt of notification and if a time extension is approved, it shall be authorized by Change Order. In the event of a continuing delay having a single cause, notification as above is required, however, a determination by the Owner as to time extension allowed will not be made until the Contractor has submitted electronically in E-Builder complete facts as to the reason and total extent of the delay, including such documentation as may be reasonably required by the Owner. No time extension shall be granted for delays occurring more than 5 calendar days before written notification is made to the Owner, and no time extension shall be granted for any delay caused or occasioned by fault, negligence, omission, or failure to timely prosecute the Work, including procurement delays on the part of the Contractor, its agents, suppliers, employees, or subcontractors. The Contractor shall also take immediate action upon incurring such delay to minimize the effects of that delay. The allowability and length of any such time extension shall be determined in writing. In making that determination, no extension of time will be allowed the Contractor for delays encountered in one or more phases of the Work that can be overcome by reasonable readjustments of the Contractor's planned progress on other phases of the Work. Only critical path delays will be recognized for an extension of time. All requests for an equitable time extension shall be accompanied with a time impact analysis.

a. Time extensions may also be allowed on the same terms and conditions as set forth above, in the event that the Contractor over the course of the Work encounters unusually adverse weather in excess of the norm for the locality. The Contractor expressly agrees that in undertaking to complete the Work within the time specified, it has made allowance for all hindrances including adverse weather and delays which might normally be expected to occur in performing the Work. No claims shall be made for money by the Contractor for such hindrances and delays.

b. The Contractor's sole and exclusive remedy for delays and inefficiencies as described herein shall be an equitable extension of time. The Contractor shall not be entitled to any additional compensation or payment for extra costs or damages incurred by them due to hindrances of, or delays to, the progress of the Work. Any claim related to delay shall be in writing and include a time impact analysis.

c. No extensions of time will be granted due to Contractor's failure to protect

the site, materials, or working conditions from adverse weather conditions including, but not limited to site drainage, storage, and temporary enclosures as needed.

d. No extensions of time will be granted due to Contractor's failure to diligently prosecute the contract, including, but not limited to, procurement delays.

e. Under no circumstances shall any claim for additional costs be accepted based upon a hypothetical formula, Means or other estimated costs. All claims shall be presented utilizing discrete data evidencing direct costs to project.

f. Contractor waives any claims for attorney fees and claims consultant costs.

7. Disputes

Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement with the Project Manager shall be decided by appeal to the Chief Executive Officer of JAXPORT. The Chief Executive Officer shall, within 30 days of receipt of the written appeal, reduce its decision to writing, and mail or otherwise deliver a copy to the Contractor. The 30-day period may be extended in 30-day increments by written order of the Executive Director, or its designee, when and if it determines that additional studies or investigations are necessary to render a decision. This decision shall be final and conclusive, unless within 30 days after receipt thereof by the Contractor, the Contractor mails or otherwise delivers to the Chief Executive Officer a written appeal addressed to the Chairman of JAXPORT. In connection with the appeal proceeding under this clause, the Contractor shall be given an opportunity to be heard and to offer supportive evidence to its appeal. Pending final decision on the dispute should the project be ongoing, the Contractor shall proceed diligently with the performance of the contract in accordance with the Chief Executive Officer's decision. The decision on the appeal shall be rendered by JAXPORT's Governing Body and shall be final and conclusive unless determined by subsequent judicial review to have been fraudulent, capricious, so grossly erroneous as to imply bad faith, or not supported by any substantial evidence.

Compliance with this process shall be a condition precedent before any litigation can be brought to appeal any decision.

8. Recovery Rights, Subsequent to Final Payment

The Owner reserves the right should an error be discovered in the partial or final Applications for Payment, or should proof of defective Work or materials used by or on the part of the Contractor be discovered after the final payment has been made to claim and recover from the Contractor or its Surety, or both, by process of law, such sums as may be sufficient to correct the error or make good the defects, errors, or omissions in the Work and materials.

All records pertaining to the Project shall be retained by the Contractor for a period of three years from the date of final acceptance of the Project, unless additional time for retention is requested in writing by the Owner. Upon request, all such records shall be made available to the Owner or its representative. For the purpose of this Section, records shall include all books of account, supporting documents, both paper and electronic, and papers deemed necessary by the Owner to assure compliance with the contract provisions, photographs, videos, video tapes and project pictures stored electronically. Contractor shall reasonably cooperate with the Owner in obtaining and reviewing all documentation herein.

SECTION IV.: ADMINISTRATIVE

1. "As-built" Drawings and Equipment Manuals

a. At the completion of the Work under this contract, the Contractor shall prepare and deliver electronically in E-Builder to the Owner one complete set of the construction drawings indicating As-Built conditions. Final As-built drawings submissions shall consist of:

(1) Adobe Acrobat format (.pdf) – 1 complete set

(2) Latest version of AutoCAD format (.dwg) to include external references

Final payment shall be withheld from the Contractor until acceptable "As-built" drawings are furnished to the Owner.

b. The Contractor shall furnish electronically in E-Builder a complete set of operations and maintenance instructions together with the repair parts lists for all mechanical and electrical equipment. Those instructions shall be prepared and published by the manufacturer, and shall be delivered to the Owner prior to the final inspection. Final payment shall be withheld from the Contractor until such documents are furnished to the Owner.

2. Conferences

a. Unless waived by agreement of both parties, a Preconstruction Conference will be held at a mutually convenient time as soon as is practicable following award of this contract; normally, within 21 calendar days thereafter. The Preconstruction Conference shall be attended by responsible representatives of the Owner, and the Contractor and its subcontractors. The Contractor, its subcontractors and its suppliers are expected to be fully familiar with the contract documents and specific Project requirements by the time set for the Preconstruction Conference and the Owner may reasonably presume such notwithstanding paragraph "c" of the "Contract Documents" Section I of these General Conditions. The Contractor shall then present for discussion at the meeting any questions, concerns, discrepancies, need for clarifications and any other significant issues which may in any manner affect the project schedule or its performance of the Work for these issues discussed after the award of contract. Written clarifications and/or interpretations of the contract documents shall be furnished to the Contractor without unreasonable delay. Written "Minutes" of the Preconstruction Conference will be prepared by the Owner, with copies provided to all attendees and which the "Minutes" shall be retained.

The Contractor shall deliver to the Owner at the Preconstruction Conference the specified copies of:

- Schedule of Values (where applicable).
- Quality control program.

- List of project subcontractors.
- List of Contractor's project management team with telephone numbers.
- Identification of major suppliers and/or manufacturers to be used on the project.
- Schedule for, and listing of, shop drawing submittals.
- Other documents as may be required elsewhere in these specifications.

b. The Contractor or Owner may request conferences for other useful purposes at convenient times throughout the contract period. Representatives of all concerned parties shall receive reasonable notice of any such meeting.

3. Payments

Unless otherwise specified in the section of "Special Conditions" and upon receipt electronically in E-Builder of the Contractor's Application for Payment (Forms AFP-1 and AFP-2), payment for this Work will be made as follows:

a. Payment will be made once each month in the amount of 95 percent of the value of completed Work, based on contract prices of labor and materials incorporated in the Work and of materials suitably stored at the site thereof for incorporation in the Work, as estimated or approved by the Owner's representative less the aggregate of previous payments. At such time as the Work is substantially complete and is available for beneficial use/occupancy, the Project Manager may, at his/her discretion, release the retainage, except that a sufficient amount may be withheld to cover the cost of any claims by the Owner, incomplete items, until final settlement of the contract. Final payment, including retainage will be made after closeout of the Work has been satisfactorily completed and all requirements of the contract documents have been fulfilled.

b. The Contractor shall submit electronically in E-Builder to the Project Manager a proposed Schedule of Values of the various portions of the Work, including line item quantities aggregating to the total contract sum, through E-Builder and prior to the Preconstruction Conference. This schedule, when approved by the Project Manager, shall be used as a basis for the Contractor's application for payments. The Contractor shall update this schedule each time a Change Order affecting the contract total price is approved. The contract price will be adjusted to provide payment for the actual quantities of unit price items as they are completed and accepted. The following items are required with each AFP:

1. Form AFP-1 Application for Payment
2. Form AFP-2 Schedule of Values
3. Progress Schedule
4. DBE Form 5
5. Narrative Report that addresses:
    a. Work Performed

b. Work Planned

c. Problems

d. Open Issues

6. Photographs (See Section SC, Item 11 for detailed requirements.)

c. Payments may be withheld for failure of the Contractor to comply with the provisions of the contract documents, including but not limited to:

(1) Defective work not remedied.

(2) Failure of the Contractor to make payments properly to subcontractors or for labor, materials, or equipment.

(3) Any delay or damage to another Contractor, upon certification by injured Contractor, of the cause and amount of any said damage.

(4) Unsatisfactory prosecution of the Work by the Contractor.

Payments may also be withheld if claims have been filed or there is reasonable evidence indicating the probable filing thereof, or if Contractor's Surety for this Project so requests in writing.

Withholding of payments is a remedy in addition to all other remedies available to the Owner. Where pursuant to condition (2) of this paragraph, a contractor certifies to the Owner the necessity to withhold progress payments to another contractor, the certifying contractor shall defend, indemnify, and hold harmless the Owner from any and all claims or suits arising from such action, which is discretionary with the Owner.

d. Whenever Mobilization and Demobilization are a part of the bid items, Mobilization will account for and be paid out at sixty percent (60%) and Demobilization will account for and be paid out at forty percent (40%).

e. Whenever any change or combination of changes in the Work results in an increase or decrease in the original estimated contract quantities, and the Work added or eliminated is of the same general character as that shown on the original plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantities of work done, and no allowance will be made for any loss of anticipated profits because of increases or decreases in quantities provided, however, that any increased or decreased work covered by a Change Order shall be paid for as stipulated therein.

f. Final payment shall not be made until the Contractor has delivered to the Owner any required submittals, the Certificate of Substantial Completion (Form SUBCOM); Contractors Affidavit to Owner (Form FCC); Consent of Surety to Final Payment (Form CONSUR), including valid Power of Attorney, and DBE Form 5.

g. No payment by the Owner shall be construed to be acceptance of defective Work or improper materials. Contractor warrants and guarantees that title to ll work, materials, and equipment covered by any Application for Payment, whether incorporated into the Project or not will pass to the Owner at time of final

payment, free and clear of all liens, claims, security interests and encumbrances.

h. Payments will be made within 20 business days after receipt of Contractor's properly documented invoice(s), unless returned for correction of invoice(s), or submission of additional substantiation.

i. The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those specifically preserved according to the provisions of these contract documents.

j. The Owner may at any time have access to the Contractor's records for the purpose of auditing the financial and contractual performance of the Contractor. The Owner may obtain copies of all financial and scheduling computer disks at any time from the Contractor, and shall have reasonable access to all other documents throughout the duration of the project and for three (3) years following substantial completion except those that would be privileged under Florida law. The Owner may audit the financial records of the Contractor at any reasonable time, at its own expense.

4. Progress Schedule

The Contractor shall prepare for the Owner's approval a progress schedule for the Project showing the dates for the starting and completion of the various items of construction. The schedule shall be prepared in Microsoft Project (or equivalent) format, unless the Technical Specifications provide for a more detailed progress schedule.

Four (4) copies shall be furnished to the Owner's representative at the Preconstruction Conference. This schedule, after approval, shall be used by the Owner as the primary means of determining satisfactory execution of the Work by the Contractor. No payments will be made to the Contractor until the schedule is approved. All proposed Change Orders will include a revised schedule.

Should the Contractor fall behind the approved schedule, it shall provide a recovery schedule and be required to revise methods or operations, increase its forces (labor and equipment), work extra hours per day, and/or work extra days per week as necessary until the scheduled progress is acceptable, at no extra compensation by the Owner. Failure on the part of the Contractor to take necessary and sufficient actions in this regard and to put the Project back on schedule within a reasonable time, not to exceed 30 calendar days after notification by the Owner of such delinquency, shall be considered sufficient grounds for termination of the contract. The decision by the Owner not to terminate shall not constitute a waiver or preclude the termination for default as appropriate.

Any delays encountered during the construction which may be excusable under the provisions of these "General Conditions" shall be brought to the Project Manager's attention in accordance with the provisions. The approved Project schedule may, depending on the Project Manager's decision, be adjusted accordingly.

SECTION V.: INSURANCE AND BOND

1. Insurance and Indemnification.

a. The Contractor shall not commence Work until the Contractor has procured the insurance required under this Section and such insurance has been approved by the Owner. The Contractor shall provide evidence of such insurance in the following manner:

(1) Contractor agrees, at its sole expense, to maintain on a primary, non-contributory basis during the life of this Contract or performance of Work hereunder, insurance coverages, limits, and endorsements unless otherwise noted herein. Contractor agrees to provide evidence of Commercial General Liability, Contractor's Professional Errors and Omissions Liability and Commercial Umbrella/Excess Liability coverages at execution of the Contract. The other coverages required herein for Business Auto Liability, Contractor's Pollution Legal Liability, Inland Marine Builder's Risk Insurance, and Workers' Compensation. In the event the Contractor performs any site work, other than testing, then all insurance required herein will need to be evidenced prior to commencement of said site work.

(2) The Contractor agrees the insurance requirements herein as well as JAXPORT's review or acknowledgement, is not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor under this Contract.

(3) As evidence of compliance with the insurance required by Paragraph "c.", Subparagraphs 1 (Workers' Compensation/Employers' Liability), 2 (Commercial General Liability) and 3 (Business Auto) below, the Contractor shall furnish the Owner with a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of the insurer(s) providing the coverage. The specified form must be used; no substitutions will be permitted.

(4) As evidence of compliance with the insurance required by Paragraph "c.", Subparagraph 4 (Protection for Owner) below, the Contractor shall furnish the Owner with either the original of the Owner's and Contractor's Protection Liability Policy(ies) or a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of the insurer(s) verifying inclusion of the Additional Insured endorsement in the Commercial General Liability Coverage.

(5) If this contract includes construction of, or additions to aboveground buildings or structures, or the installation of machinery or equipment into an existing structure as evidence of compliance with the insurance required by Paragraph "c.", Subparagraph 5 (property insurance) below, the Contractor shall furnish the Owner with the original of the policy or policies of insurance required and a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of

the insurer(s).

(6) With respect only to the insurance required by Paragraph "c.", Subparagraph 4 (Protection for Owner) and Subparagraph 5 (property insurance) below, and then only for a maximum of sixty (60) days from the date of inception of the policy or policies in lieu of the original of any required policy or policies of insurance, the Contractor may furnish an original binder or binders of the insurance signed by an authorized representative of the insurer(s) and a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of the insurer(s).

(7) Until such time as the insurance is no longer required to be maintained by the Contractor, the Contractor shall provide the Owner with renewal or replacement evidence of the insurance in the manner described by Paragraph "a.", Subparagraphs 1, 2, 3 and 4 below, no less than thirty (30) days before the expiration or replacement of the insurance for which previous evidence of insurance has been provided.

(8) Neither approval by the Owner for failure to disapprove the insurance furnished by the Contractor shall relieve the Contractor of the Contractor's full responsibility to provide the insurance as required by this contract.

b. Insurers providing the insurance required by this contract must meet the following minimum requirements:

(1) Such insurers must be licensed to write insurance of the required class(es) in the State of Florida, either: a) authorized by subsisting certificates of authority issued to the companies by the Department of Insurance of the State of Florida, or b) with respect only to the coverage required by Paragraph "c.", Subparagraph 1 (Workers' Compensation/Employers Liability) authorized as a group self-insurer pursuant to Florida Statutes 440.57.

(2) In addition, such insurers other than those authorized by Florida Statutes 440.57 shall have and maintain throughout the period for which coverage is required a Best's Rating of "A-" or better and a Financial Size Category of "VII" or better according to A. M. Best Company.

(3) If, during the period when an insurer is providing the insurance required by this contract, an insurer shall fail to comply with the foregoing minimum requirements, as soon as the Contractor has knowledge of any such failure, the Contractor shall immediately notify the Owner and immediately replace the insurance provided by the insurer, with an insurer meeting the requirements. Until the Contractor has replaced the unacceptable insurer with an insurer acceptable to the Owner, the Contractor shall be in default of this contract.

c. Without limiting any of the other obligations or liabilities of the Contractor, the Contractor shall, at the Contractor's sole expense, procure, maintain and keep in force the amounts and types of insurance conforming to the minimum requirements set forth in this Paragraph "c." Except as otherwise specified in this contract, the insurance shall commence prior to the commencement of work by the Contractor and shall be maintained in force until the contract completion date.

(1) Workers' Compensation/Employers' Liability:

(a) The Contractor's insurance shall cover the Contractor and its subcontractors of every tier for those sources of liability which would be covered by the latest edition of the standard Workers' Compensation Policy, as filed for use in Florida by the National Council on Compensation Insurance, without restrictive endorsements. In addition to coverage for the Florida Workers' Compensation Act, where appropriate, coverage is to be included for the Longshoremen's and Harbor Workers' Compensation Act, Maritime, including Jones Act, Federal Employers' Liability Act and any other applicable Federal or State laws.

NOTE: If the project is to be accomplished on the face of the wharf, the concrete area where crane rails are located to the edge of the wharf and underneath the wharf (piling, deck repairs, etc.), Longshoremen's and Harbor Workers' Compensation will be required.

(b) Subject to the restrictions of coverage found in the standard Workers' Compensation Policy, there shall be no maximum limit on the amount of coverage for liability imposed by the Florida Workers' Compensation Act, the Longshoremen's and Harbor Workers' Compensation Act, or any other coverage customarily insured under Part One of the standard Workers' Compensation Policy. The minimum amount of coverage for those coverage's customarily insured under Part Two of the standard Workers' Compensation (inclusive of any amounts provided by an umbrella or excess policy) shall be those amounts stated in Required Limits of Insurance (Form 100-87).

(2) Commercial General Liability:

The Owner shall be named an additional insured on the CGL Policy as well as Umbrella and or Excess policy or policies. The Owner shall not be responsible to pay any deductible sum. This is not meant to extend the Owner's liability beyond Section 768.28, Florida Statutes.

(a) The Contractor's insurance shall cover the Contractor for those sources of liability which would be covered by the latest occurrence form edition of the standard Commercial General Liability Coverage Form (ISO Form CG 2010 07 04 or GC 2010

04 13 Additional Insured – Owners, Lessees, or Contractors-Schedule Persons or Organization, in combination with the GC 2037 10 01) or similar endorsements providing equal or broader Additional Insured Coverage. Commercial General Liability must be filed for use in the State of Florida by the Insurance Services Office, without the attachment of restrictive endorsements other than the elimination of Coverage C., Medical Payments and the elimination of coverage for Fire Damage Legal Liability.

(b) If the contract value of this Project exceeds $100,000, the Contractor shall maintain separate limits of coverage applicable only to the work performed under this contract. The minimum limits to be maintained by the Contractor (inclusive of any amounts provided by an umbrella or excess policy) shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (designated Project or Premises) endorsement (ISO Form CG 25 01) to a Commercial General Liability Policy with the minimum amounts stated in the Required Limits of Insurance (Form 100-87).

(c) The Contractor shall continue to maintain Products/Completed Operations Coverage for a period of three (3) years after the contract completion date. The insurance shall cover those sources of liability which would be covered by the latest occurrence form edition of Coverage A of the Commercial General Liability Form (ISO Form CG 00 01) or Coverage A of the occurrence form Products/Completed Operations Liability Coverage Form (ISO Form CG 00 37), as filed for use in the State of Florida by the Insurance Services Office, without restrictive endorsements. The minimum limits to be maintained by the Contractor (inclusive of any amounts provided by an umbrella or excess policy) shall be the amounts stated in the Required Limits of Insurance (Form 100-87).

(d) Contractor agrees it's coverage will not contain any restrictive endorsement(s) excluding or limiting Products/Completed Operations, Independent Contractors, Broad Form Property Damage, X-C-U Coverage, Contractual Liability, Cross Liability or Separation of Insured's. The Contractor agrees that any self-Insured Retention or deductible shall not exceed $25,000.

(3) Business Auto Policy:

(a) The Contractor's insurance shall cover the Contractor for those sources of liability which would be covered by Part IV of the latest occurrence edition of the standard Business Auto Policy (ISO Form CA 00 01), including coverage for liability contractually assumed, as filed for use in the State of Florida by the Insurance Services Office, without the attachment of

restrictive endorsements. Coverage shall include owned, non-owned and hired autos.

(b) The minimum limits to be maintained by the Contractor (inclusive of any amounts provided by an umbrella or excess policy) shall be the amounts stated in the Required Limits of Insurance (Form 100-87).

(4) Protection for Owner Coverage:

(a) The Contractor shall provide the Owner with an Owner's and Contractor's Protective Liability Policy (OCP Policy). If the Contractor is unable to procure the minimum amounts of insurance in a single policy, the Contractor may provide the minimum limits through a combination of a primary OCP policy and one or more excess policies. The policy or policies shall cover the Owner for all sources of liability which would be covered by the latest occurrence edition of the standard Owner's and Contractor's Protective Liability Coverage Form, Coverage for Operations of Designated Contractor (ISO Form CG 00 09), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of restrictive endorsements.

(b) The Owner shall also be a named an unconditional insured on the OCP Policy and, if applicable, the excess policy or policies. This coverage extends to any act or omission by the Owner, its employees, directors, and agents related to this project. The policy or policies shall be endorsed to include the Owner's officials, officers, agents and employees as insured's. The policy or policies shall include the Contractor and the Contractor's subcontractors of every tier as the contractor designated in the declarations. The coverage is not meant to waive any limits set by Section 768.28, Florida Statutes.

(c) The minimum OCP Policy limits per occurrence and if subject to an aggregate, annual aggregate to be provided by the Contractor (inclusive of any amounts provided by excess policies) shall be the same as the amounts shown in the Required Limits of Insurance (Form 100-87) as the minimum per occurrence and general policy aggregate limits respectively required for the Commercial General Liability Coverage. The limits afforded by the OCP Policy and any excess policies shall apply only to the Owner and the Owner's officials, officers, agents and employees and only to claims arising out of, or in connection with, the Work under this contract.

(d) The OCP Policy and, if applicable, the excess policy or policies, must be specifically endorsed to provide the Owner with 45 days' written notice of cancellation, non-renewal or restriction.

(e) As an alternative to the OCP policy, the Contractor may include the Owner and the Owner's officials, officers, agents, consultants and employees as Additional Insured's on the Commercial General Liability Coverage required pursuant to Subparagraph "c.2". If the Additional Insured alternative is selected, the coverage afforded such Additional Insured's shall be no more restrictive than that which would be afforded by adding the Owner and the Owner's officials, officers, agents, consultants and employees as Additional Insured's using the latest Additional Insured - Owners, Lessees or Contractors (Form B) endorsement (ISO Form CG 2010). Certificate of Insurance Compliance shall be clearly marked to reflect use of this alternative.

(5) Property Insurance:

(a) If the contract includes construction of, or additions to aboveground buildings or structures, Contractor shall provide all risk Builder's Risk Insurance on a form which is no more restrictive than that afforded by the latest editions of Insurance Services Office Forms CP 00 20 and CP 10 30. If the contract does not include construction of, or additions to aboveground buildings or structures but does involve the installation of machinery or equipment, Contractor shall provide an all risk installation Floater including installation and transit.

(b) For Builder's Risk, the amount of insurance is to be 100 percent of the completed value of such addition(s), building(s) or structure(s). For Installation Floater, the amount of insurance is to be 100 percent of the installed replacement cost value. For Builder's Risk, the recovery shall be based on completed replacement cost. For Installation Floater, the recovery shall be based on the installed replacement cost.

(c) The Builder's Risk Policy must be specifically endorsed to eliminate any "occupancy clause" or similar warranty or representation that the building(s), addition(s) or structure(s) in the course of construction shall not be occupied without specific endorsement of the policy. The policy must be endorsed to provide that, subject to the notice of cancellation requirement, the Builder's Risk coverage will continue to apply until final acceptance of the building(s), addition(s) or structure(s) by the Owner. The Installation Floater Policy must be specifically endorsed to provide that, subject to the notice of cancellation requirement, the policy shall remain in force until final acceptance of the machinery or equipment by the Owner.

(d) The maximum deductible shall be $5,000.00 per occurrence.

(e) The Owner must be included as a named insured for any liability arisen from its acts relating to the project.

(f) The policy must be specifically endorsed to provide the Owner with 45 days' written notice of cancellation, non-renewal or restriction.

(g) If the contract includes construction of, or additions to, aboveground buildings or structures which are located in a special flood hazard area as defined by the National Flood Insurance Program, flood insurance must be afforded for the lesser of the total insurable value of such buildings or structures, the maximum amount of flood insurance coverage available under the National Flood Program or, the total compensation due Contractor under the contract. If the contract does not include construction of, or additions to, aboveground buildings or structures but does include the installation of machinery or equipment in a building or structure which is located in a special flood hazard area as defined by the National Flood Insurance Program, flood insurance must be afforded for the lesser of the total insurable value of the machinery or equipment or the maximum amount of flood insurance coverage available under the National Flood Program.

d. The insurance provided by Contractor pursuant to this contract shall apply on a primary basis and any other insurance or self-insurance maintained by the Owner or an Owner's official, officer, agent or employee shall be excess of and not contributing with the insurance provided by or on behalf of the Contractor.

e. Except with respect to the Property Insurance, the coverage maintained by the Contractor shall apply on a first dollar basis without application of a deductible or self-insured retention.

f. Compliance with the insurance requirements of this contract shall not limit the liability of the Contractor, its subcontractors, employees, or agents to the Owner or others. Any remedy provided to the Owner or the Owner's officials, officers, agents and employees by the insurance shall be in addition to and not in lieu of any other remedy available under this contract or otherwise.

g. Indemnification.

(1) The Contractor shall indemnify, defend and hold harmless the JPA, its employees and elected officials, from all liabilities, damages, losses, costs and expenses of whatsoever kind or nature, including, but not limited to, reasonable attorney's fees, reasonable expert witness fees and court costs (all of which are collectively referred to as "Damages") to the extent such Damages are caused by the negligence, recklessness or intentional wrongful conduct of the Contractor and/or persons employed or utilized by the Contractor in the performance of this Agreement.

(2) In any and all claims against the Owner or its members, directors, officers, employees, representatives and agents by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, this indemnification under this Sub-article "g." shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

(3) In addition to those indemnities previously described, the obligations of the Contractor under this Sub-article "g." shall extend to the liability of the Consultant or Consultants, if any, on this Project, and the Consultant's members, directors, officers, employees, representatives or agents in the same manner as applicable to the Owner. Provided, however, the obligations of the Contractor under this Sub-article "g." shall not extend to the liability of the Consultant, its members, directors, officers, employees, representatives or agents arising out of: 1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or 2) the giving of or the failure to give directions or instructions by the Consultant, its members, directors, employees, representatives or agents provided such giving or failure to give is the primary cause of the injury or damage.

(4) The remedy provided to the Owner and the Consultant and their respective members, directors, officers, employees, representatives and agents by this indemnification shall be in addition to and not in lieu of any other remedy available under this con-tract or otherwise. This indemnification obligation shall not be diminished or limited in any way to the total limits of insurance required in this contract or otherwise available to Contractor or any sub-contractor.

(5) To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner its officers, agents, volunteers, and employees from and against all claims, damages, losses, and expenses, including but not limited to all fees and charges of engineer(s), architect(s), attorney(s) and other professional(s), court costs, or other alternative dispute resolution costs arising out of, resulting from, or otherwise but for the performance or furnishing of Proposer's work or services under this Invitation to Bid; provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease, death or personal injury, or property damage, including the loss of use or diminution in value resulting there from; but only to the extent caused in whole or in part by the actual or alleged negligent acts, errors, or omissions of Contractor,

Contractor's Subcontractor(s) or anyone directly or indirectly employed or hired by Contractor, or anyone for whose acts Contractor may be liable. The Owner reserves the right, but not the obligation, to participate in defense without relieving Contractor of any obligation hereunder.

h. Contractor's Pollution Liability

(1) As evidence of compliance with the insurance required by Paragraph "c.", Subparagraphs 6 (Contractor's Pollution Liability), the Contractor shall furnish the Owner with a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of the insurer(s) providing the coverage. The Contractor agrees the policy shall include a minimum three (3) year Discovery (tail) reporting period, and a retroactive date that equals or precedes the effective date of the Contract, or the performance if Work hereunder. This coverage can be provided on a Per-Project basis.

2. Surety Bonds.

a. General. All bonds shall be written through a reputable and responsible Surety bond agency licensed to do business in the State of Florida and with a Surety company or corporation meeting both Subparagraphs (1) and (2) below. All bonds, including bid bonds and contract bonds shall have affixed to them a certified copy of current Power of Attorney of the Attorney-in-Fact who executed the bond on behalf of the Surety. Bond requirements in excess of $500,000, including bid bonds and contract bonds, shall be written with a Surety company meeting the specifications of both Subparagraphs (1) and (2). In the event the bond requirement does not exceed $500,000, bonds written with a Surety company meeting either a) the requirements of Subparagraphs (1) and (2) or, alternatively, b) the requirements of Subparagraph (3) shall be acceptable.

(1) Having a minimum rating in the latest revision of Best's Insurance Reports of:

Contract Amount	Policyholder	Financial
Under $250,000	B+	Class III
$250,000.01 to $2,500,000	B+	Class IV
$2,500,000.01 to $5,000,000	A-	Class IV
Over $5,000,000.01	A	Class V

(2) Holding a current certificate of authority as acceptable Surety on federal bonds in accordance with U. S. Department of Treasury, Circular 570, current revision. If the amount of the bond exceeds

the underwriting limitations set forth in the Circular, in order to qualify, the net retention of the Surety Company shall not exceed the underwriting limitation in the Circular and the excess risk must be protected by co-insurance, reinsurance, or other methods. Further, the Surety Company shall provide the Owner with evidence satisfactory to the Owner that such excess risk has been protected in an acceptable manner.

(3) In the event the bond requirement does not exceed $500,000, bonds with a Surety Company in compliance with the following requirements shall be acceptable:

(a) The Surety Company holds a certificate of authority authorizing it to write Surety bonds in Florida.

(b) The Surety Company has twice the minimum surplus and capital required by the Florida Insurance Code at the time the invitation to bid is issued.

(c) The Surety Company is otherwise in compliance with the provisions of the Florida Insurance Code.

(d) The Surety Company holds a currently valid certificate of authority issued by the United States Department of the Treasury under Section 9304 to 9308 of Title 31 of the United States Code.

In order to qualify as an acceptable Surety company under this Subparagraph (3), a Certificate and Affidavit for Surety Bond Insurer (Form CASBI included in the contract documents) shall be executed by an officer of the Surety bond insurer as evidence that a Surety Company is in compliance with the foregoing requirements and shall be submitted with the bond.

b. Agent. The name of the agent for the Surety Company shall be listed in the prescribed space on both the bid bond and the contract bond.

c. Bid Bonds. Refer to "Supplemental Instructions to Bidders," Article 6 "Bid Guaranty." Provisions of this Article apply to bid bonds. Surety's standard bond form for State of Florida is acceptable.

d. Contract Bonds. The Contractor, at its own expense, shall furnish a Performance Bond, and a Statutory Payment Bond as security for the faithful performance under the contract documents. The bonds shall be in an amount at least equal to the contract price, in the form provided in these contract documents, and with such Surety as is acceptable to the Owner. Such bonds shall indemnify the Owner for damages associated with unexcused late delay of the project.

e. Additional Bond. It is further mutually agreed between the parties hereto that if, at any time during the contract period, the Surety or Sureties upon the bonds ceases to meet the specified minimum criteria or otherwise become financially unsatisfactory, or if for any reason, such bond ceases to

be adequate to cover the performance of the Work, the Contractor shall immediately, and at its expense, furnish an additional bond or replacement bond in such form, amount, and with such Surety or Sureties as shall be satisfactory. In such event, no further payments to the Contractor shall be deemed to be due under this contract until such new or additional security for the faithful performance of the Work shall be furnished in manner and form satisfactory to the Owner.

SPECIAL CONDITIONS

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SPECIAL CONDITIONS

The "General Conditions," Section I through Section V, and the articles of this section shall apply to the Contractor and all Subcontractors. The "Special Conditions" supplement and/or amend the "General Conditions" and other contract documents as necessary for this project. Any article, paragraph, or subparagraph in the "General Conditions" or other contract documents not so supplemented or amended by this section shall remain in effect.

1. Time for Completion

The Contractor shall totally and finally complete all work not later than **260** calendar days after receipt of Notice to Proceed.

2. Liquidated Damages

a. The parties agree that at the time of entering into this Agreement the parties cannot determine the precise amount of damages that JAXPORT will suffer in the event Contractor is unable to perform its obligations under this Agreement. The parties agree that the damages suffered by JAXPORT under such circumstances are uncertain and difficult to ascertain. Therefore, the parties agree that this sum is fair and reasonable and represents liquidated damages and is not a penalty.

b. Should the Contractor or, in case of its default, the Surety fail to complete the work within the time stipulated in the contract, or within such extra time as may have been granted by the Owner, the Contractor or, in case of its default, the Surety shall pay to the Owner not as a penalty but as Liquidated Damages the amount so due as determined below.

c. For each calendar day that any part of the work remains uncompleted after the expiration of the contract time, the sum per day specified below shall be deducted by the Owner from monies due the Contractor, not as a penalty but as agreed Liquidated Damages representing loss to the Owner for additional cost of contract administration, inconvenience and additional cost of operations only due the Owner as a result of the Contractor's late completion. If no money is due the Contractor, the Owner shall have the right to recover said sum or sums from the Contractor, from the Contractor's Surety, or from both. The assessment of Liquidated Damages shall be in addition to actual damages or claims to the Owner except for inconvenience, administrative costs, and additional costs of operation.

d. Liquidated Damages for failure to complete the work within the time specified for the completion of the work shall be:

$1,699 per calendar day

e. Permitting the Contractor to continue and to finish the work, or any part of it, after the expiration of the contract time allowed including extensions of time granted to the Contractor shall, in no way, act as a waiver on the part of the Owner, of the Liquidated Damages due under the contract.

f. In case of default of the contract and the completion of the work by the Owner, the Contractor and its Surety shall be liable for the Liquidated Damages and delay under the contract, but no Liquidated Damages shall be chargeable for any delay in the final completion of the work by the Owner due to any unreasonable action or delay on the part of the Owner.

3. Warranty

The Contractor agrees to correct or replace any defective materials or workmanship for a period of **One (1) Year** from execution of Certificate of Contract Completion and Contractor's Affidavit to Owner. The Technical Specifications may require a longer warranty period for all or portions of the Work.

4. Permits

The Contractor shall secure permits and licenses as specified in paragraph "f" of the "Contractor's Responsibility" section of the "General Conditions". The Owner will obtain State and Federal permits for permanent construction, and has applied for Federal and State dredge and fill permits and other local permits for this project, if applicable.

The Contractor shall obtain the City Building Permit and any permits required for the construction of temporary structures, and temporary dredging and filling which may be necessary to facilitate its construction scheme and operations.

5. Owner's Minimum Project Work Rules

See FORM PWR

6. Existing Soil Conditions

The Owner has, for its own use, made borings at or near the site of the Work. Any boring data shown in these contract documents is presented only as information which indicates certain conditions found and limited to the exact locations and on the dates indicated. Any interpretations or conclusions drawn by the Contractor from such data shall be its own and the Owner makes no representation or guarantee concerning the accuracy or completeness of such data. The Contractor shall be responsible for making its own determination of subsurface conditions prior to bidding and shall not assume that any of the aforesaid boring data will necessarily be found or maintained.

7. Site Conditions

The Contractor shall visit the location of the Work and make such investigations of existing 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 field measurements, soil investigations, laydown areas, interferences and general logistics. No oral representations by any persons regarding such

conditions either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

8. Structure over Navigable Waters

Where structures are erected in, adjacent to, or over navigable waters, the Contractor shall observe all regulations and instructions of Federal and other authorities having control over such waters. The Contractor shall not obstruct navigation channels without permission from the proper authority and shall provide and maintain navigation lights and signals in accordance with the Federal requirements for the protection of the structure, or falsework, and of navigation.

9. Welding, Burning, and Hot-work Regulations

The U. S. Coast Guard requires JAXPORT to maintain "welding and hot-work" permits valid for 3-year periods that allow JAXPORT and its Contractors to complete any such work on its marine terminal docks. The area of the terminal covered by this program extends landward from the face of the wharf 150 feet. Beyond 150 feet is covered by rules and regulations of the Jacksonville Fire Marshal's Office, and does not require permitting.

a. The Contractor must contact the designated JAXPORT terminal representative who will inspect the project area in accordance with, and issue the JAXPORT Cutting-Welding-Hot-work Authorization Form.

b. Once JAXPORT representative has issued the Authorization Form, he will give the Contractor a copy of the U. S. Coast Guard permit, which must be posted by the Contractor in the vicinity of the Contractor's project.

c. After receiving the completed Authorization Form and posting the U. S. Coast Guard permit in the job area, the Contractor must then contact the U. S. Coast Guard Marine Safety Office, Jacksonville, FL, supplying the following information:

   (1) U. S. Coast Guard Hot-work permit number

   (2) The types of hot-work to be accomplished

   (3) The exact location of the hot-work at the facility.

   (4) Anticipated duration of the hot-work

   (5) Type and location of any dangerous cargo on the facility.

   (6) Name/phone number of the point of contact at the facility.

   (7) The name of the Contractor.

d. The Marine Safety Office of Jacksonville will issue a reference number allowing the Contractor to use the JAXPORT Welding and Hot-work Permit" for up to a period of 7 days.

e. Steps a. through d. must be repeated each 7-day period thereafter until the welding and hot-work portions of the contract is complete.

It is the Contractor's responsibility to comply with all federal, state and local laws.

10. Tax Savings Program, General.

Goods and services purchased directly by the Contractor are subject to all State and/or local taxes. All items, materials, supplies and/or equipment incorporated and/or used in the construction of the project and paid for by the Contractor are, consequently, subject to all applicable taxes.

It is the Contractor's sole responsibility to incorporate any and all applicable taxes into the bid proposal including all railroad materials and equipment for this project without regard to the optional purchasing procedures hereinafter defined. JAXPORT is not a Railroad Company or Railroad Operator, therefore the railroad tax exemption rules do not apply to JAXPORT.

JAXPORT Tax Exemption

Chapter 212 of the Florida Statutes, however, provides JAXPORT with an exemption from the payment of sales taxes for all procurements made directly by JAXPORT.

This section contains the specific administrative and/or purchasing procedures that the Contractor shall follow for the purpose of facilitating JAXPORT's procurement of major items to the extent that JAXPORT may so elect and thereby obtain any benefit that may accrue to JAXPORT from the sales tax exemption permitted by the Florida Statutes.

Administrative and/or Purchasing Procedures.

The following procedures are hereby established to permit JAXPORT to purchase in its own name and for its own account some of the items, equipment, materials and supplies which will form part of the work for which the Contractor is obligated to construct under this contract.

Within a period of time that will not adversely impact the orderly progression of the Project, agreed upon by both JAXPORT and Contractor following notice of contract award, the Contractor shall prepare and submit to the Project Manager an itemization of all items, materials, supplies and/or equipment that will be incorporated into this Project for which the Contractor has a firm quotation and as hereinafter specified. If the Contractor does not have a firm quotation for any items at the time the initial list is prepared, the Contractor shall update the previously submitted list immediately upon obtaining the necessary quotation.

This list shall include all items identified on the plans or in the "Products" section of each Technical Specification that individually or collectively cost $10,000 or more and would normally be ordered from one supplier under a single Purchase Order. Items that are purchased on an "as needed" basis over time under multiple Purchase Orders, each of which are less than $10,000, may be excluded from this list even though the aggregate total cost of all items in this category exceeds the $10,000 minimum.

a) The list must contain the following:

1. A description of item, material, supplies and/or equipment to be procured. This description shall be by common name and be referenced to the technical specification and CSI code under which it is defined.

2. The quantity of the item, material, supplies and/or equipment to be procured, the unit cost applicable to each, and the appropriate State of Florida and local (Duval County) sales tax rate in which the procurement is delivered.

b) Within five (5) working days following receipt of the proposed purchasing list or supplemental firm quotation from the Contractor, the Project Manager will notify Contractor of JAXPORT's decision as to which items will be purchased directly by JAXPORT.

c) Purchase Orders for the selected items will be requested from the Purchasing Department using the Contractor's Letter of Quotation to identify the Vendor name, Contractor, and Not to Exceed amount of Purchase Order. Each Purchase Order will be assigned a number based on the project number and sequence number of Purchase Orders issued.

It shall be understood by the Contractor that these Purchase Order Forms will be issued for the sole and specific purpose of procuring the selected items for incorporation in the Work for which the Contractor is obligated to construct under this contract.

d) Purchase Orders issued with Letter of Quotation attached, will be forwarded by Project Manager to Contractor with request to complete Purchase Order as to item(s) ordered, delivery instructions, and signature of Contractor.

The Purchase Order, however, shall omit any Florida State or local sales tax. In lieu thereof, JAXPORT's Consumer's Certificate of Exemption No. 85-8012543323C-8 shall be attached to the Purchase Order prior to distribution.

Each Purchase Order shall be completed and countersigned by the Contractor. The Contractor shall be responsible for assuring that the requirements for the procurement, as detailed on the plans and in the Technical Specifications, are satisfied.

e) Contractor will then return the completed Purchase Order(s) to JAXPORT for countersignature by the Project Manager approving purchase as to conformity to specifications; and to the Purchasing Department for countersignature by the Purchasing Manager.

f) After obtaining all signatures, the Project Manager shall simultaneously distribute the original to the Vendor or supplier with copies to the Purchasing Department, the Contractor, and the Finance Department.

g) The Contractor and Owner agree that it is to their mutual benefit that prosecution of the Work proceed with due diligence and without interruption. Vendors of selected items shall therefore make deliveries as directed by the

Contractor, when needed, to enable the Contractor to perform his scheduled obligations.

h) JAXPORT and Contractor agree that the Contractor will receive, receipt for, inspect, accept and to the extent necessary, unload, store, and protect the selected items at either the jobsite or other place as the Contractor may deem appropriate until brought to the worksite by the Contractor.

   The Contractor shall accept delivery of selected items from the appropriate Vendor as conforming to both the terms and conditions of the Purchase Order and applicable Technical Specifications.

i) Upon receipt of an invoice for selected items delivered, the Contractor will write on the face of the invoice that it is "okay for payment", sign, and date invoice. The invoice is then submitted in E-Builder to JAXPORT's Project Manager for authorization for payment.

j) Upon receipt of a properly approved invoice, JAXPORT shall pay the Vendor of the selected items the amount due as defined by the Purchase Order but without any Florida State or local sales tax.

   Where the Contractor has special terms with a Vendor to receive a discount if paid within a 10, 30 days' time and if the invoice is received within that time frame, invoices will be processed and the discount taken of which JAXPORT will receive the benefit. The Contractor will be advised by mail when an invoice is forwarded to the Finance Department for payment and the amount to be paid, showing discounts taken by JAXPORT, if any. Otherwise, invoices will be paid within 30 days from date on invoice.

k) In preparation of its Monthly Progress Payment request, the Contractor shall show on Line 3 of the Application for Payment the total amount of purchase orders issued under this Tax Savings Program. On Line 4 of the Application for Payment, the Contractor will show the amount of tax savings. Line 5 of the Application is the total of Lines 3 and 4.

l) An adjustment shall be summarized by reporting at the end of the contract and a Change Order to the contract will be made to close out any remaining balances on purchase orders based on the total of payments against each purchase order made for selected items, plus the total sales tax computed. A final reconciliation change order will be issued on all tax savings purchase orders remaining balances based on payments plus sales tax.

m) Notwithstanding JAXPORT's payment for selected items, as provided for above, the Contractor assumes full responsibility for any change in price and liability associated with selecting and ordering the proper quantity and type of materials and equipment for scheduling the appropriate delivery date, selection of the appropriate Vendor or supplier, the correctness of the Purchase Order and receipt report and the storage, delivery, and protection of the equipment and/or material.

n) The Contractor shall use Owner approved Purchase Orders only for purchasing goods, equipment, materials and supplies previously designated or selected by JAXPORT. The Contractor shall immediately notify and consult with JAXPORT relative to any change or modification to any previously approved selected item(s). The Contractor shall account for every Purchase Order including those voided for any reason, and shall return all voided and unused Purchase Order Forms prior to the final contract payment.

o) If the Contractor enters into one or more subcontracts with respect to any portion of the Work, the Contractor will require that each subcontractor allow, under the terms of their respective subcontracts, JAXPORT to purchase selected item(s) in the same manner as provided above with respect to the Contractor.

The Contractor shall sign all Purchase Orders for selected item(s) required by the subcontractor to complete the portion of the Work required by the subcontract.

11. Progress Photographs

Monthly Applications for Payment (see Section IV, Paragraph 3. of the "General Conditions") shall be accompanied by not less than 5 color photographs, approximately 3 inches by 5 inches in size showing current status of various areas and components of the Project. Photographs are to be mounted in a report form with descriptive captions, and sequentially numbered and uploaded in E-Builder as an attachment to each AFP. The Progress Photograph Report shall contain the following certification on its front cover which requires signature of the Contractor's responsible official.

THIS IS TO CERTIFY THAT THE ATTACHED PHOTOGRAPHS ACCURATELY REPRESENT THE ACTUAL STATUS AND CONDITION ON ___[DATE]_____ OF THE _____[CONTRACT TITLE]_____ BEING CONSTRUCTED FOR THE JACKSONVILLE PORT AUTHORITY UNDER CONTRACT NO. ___[CONTRACT NO.]_____.

FIRM: _____

SIGNATURE: _____

NAME TYPED: _____

TITLE: _____

DATE:_____

REQUIRED LIMITS OF INSURANCE

The minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy) shall be as follows:

1. WORKERS' COMPENSATION/EMPLOYERS' LIABILITY

Part One - There shall be no maximum limit (other than as limited by the applicable statute) for liability imposed by the Florida Workers' Compensation Act, the Longshoremen's and Harbor Workers' Compensations Act or any other coverages required by the contract documents which are customarily insured under Part One of the standard Workers' Compensation Policy.

Part Two - The minimum amount of coverage for those coverages required by the contract documents which are customarily insured under Part Two of the standard Workers' Compensation Policy shall be:

- $1,000,000 (Each Accident)
- $1,000,000 (Disease-Policy Limit)
- $1,000,000 (Disease-Each Employee)

NOTE: If the project is to be accomplished on the face of the wharf, the concrete area where crane rails are located to the edge of the wharf and underneath the wharf (piling, deck repairs, etc.) the Longshoremen's and Harbor Workers' Compensation will be required.

2. COMMERCIAL GENERAL LIABILITY

The limits are to be applicable only to work performed under this contract and shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (Designated Project or Premises) endorsement (ISO Form CG 25 01) to a Commercial General Liability Policy with the following minimum limits:

General Aggregate	Three Times the Each Occurrence Limit
Products/Completed Operations Aggregate	$1,000,000
Personal and Advertising Injury, Each Occurrence	$1,000,000
Fire Damage (any one fire)	Nil
Medical Expense (any one Person)	Nil

3. BUSINESS AUTO POLICY

Each Occurrence - Bodily Injury and Property Damage Liability Combined	$1,000,000
Annual Aggregate (applicable only if Contractor's form of insurance is subject thereto)	Three Times the Each Occurrence Limit

4. OWNERS PROTECTIVE LIABILITY COVERAGE

The minimum OCP Policy limits per occurrence and, if subject to an aggregate, annual aggregate to be provided by the Contractor shall be the same as the amounts shown above as the minimum per occurrence and general policy aggregate limits respectively required for the Commercial General Liability Coverage. The limits afforded by the OCP Policy and any excess policies shall apply only to the Owner and the Owner's officials, officers, agents and employees and only to claims arising out of or in connection with the work under this contract.

5. PROPERTY INSURANCE

If this contract includes construction of or additions to above ground buildings or structures, Contractor shall provide Builder's Risk insurance with the minimum amount of insurance to be 100 percent of the completed value of such addition(s), building(s) or structure(s). If the contract does not include construction of or additions to above ground buildings or structures but does involve the installation of machinery or equipment, Contractor shall provide an Installation Floater with the minimum amount of insurance to be 100 percent of the completed value of such addition(s), building(s), or structure(s).

6. RAILROAD PROTECTIVE LIABILITY COVERAGE

The minimum Railroad Protective Liability Policy limits per occurrence and, if subject to an aggregate, annual aggregate to be provided by the Contractor shall be a minimum of $1,000,000 per occurrence. The limits afforded by the Railroad Protective Liability Policy and any excess policies shall apply only to the Owner and the Owner's officials, officers, agents and employees and only to claims arising out of or in connection with the work under this contract.

CERTIFICATE OF INSURANCE COMPLIANCE

ADDRESSEE	**NAME INSURED**
Jacksonville Port Authority	**Name and Address of Insured:**
Post Office Box 3005	_____
Jacksonville, FL 32206-0005	_____
Attn: Engineering Services	_____
Contract Specialist	_____

By executing this Certificate of Insurance Compliance, the contractor warrants to the addressee that: (1) the undersigned is an authorized representative of the insurers identified in the certificate, (2) the policies or binders described in the certificate have been issued to the above named insured and are in force at this time, (3) the policies or binders as issued provide coverage in full compliance with the insurance requirements contained in the contract documents for the above referenced project with the minimum limits of coverage as specified in the Required Limits of Insurance (Form 100-87) and the contract documents, and (4) the policies or binders will not be changed, cancelled, non-renewed, or renewed with more restrictive terms and conditions so as to affect this certificate until at least thirty (30) days after written notice of such change, cancellation or nonrenewal has been received by the addressee.

Compliance with these insurance requirements shall not relieve or limit the Contractor's liabilities and obligations under this contract. Failure of Addressee to demand such Certificate of Insurance or other evidence of full compliance with these insurance requirements or failure of Addressee to identify a deficiency from evidence provided will not be construed as a waiver of the Contractor's obligation to maintain such insurance.

DESCRIPTION OF INSURANCE POLICIES SUBJECT TO THIS CERTIFICATE

Complete the following section for each of those coverages for which the contractor is making the above warranty. The sum of the limits shown for the primary and excess insurers must equal or exceed the minimum limits required by the contract.

Employer's Liability/Workers' Compensation Limits	**Primary Issuer ID:** _____	**First Excess ID:** _____	**Second Excess ID:** _____
Part One	$	$	$
Part Two (Each Accident	$	$	$
Disease-Policy Limit			
Disease-Each Employee	$	$	$

Longshoremen's and Harbor Workers'	**Primary Issuer ID:**	**First Excess ID:**	**Second Excess ID:**

Compensation	_____	_____	_____
	$	$	$

Commercial General Liability Limits	**Primary Issuer ID: _____**	**First Excess ID: _____**	**Second Excess ID: _____**
General Aggregate	$	$	$
Products/Completed Operation Aggregate	$	$	$
Personal and Advertising Injury, Each Occurrence	$	$	$
Body injury and property damage	$	$	$
Fire damage (any one fire)	$	$	$
Medical expense (any one person)	$	$	$

Business Auto Liability Limits	**Primary Issuer ID: _____**	**First Excess ID: _____**	**Second Excess ID: _____**
Each Occurrence	$	$	$
Annual Aggregate	$	$	$

Protection for Owner's Liability Limits	**Primary Issuer ID: _____**	**First Excess ID: _____**	**Second Excess ID: _____**
Each Occurrence			
Annual Aggregate			
Or Commercial General Liability Coverage Contains the Described Additional Insured Endorsement YES____ NO____			

Property Insurance Risk	**Primary Issuer ID: _____**	**First Excess ID: _____**	**Second Excess ID: _____**

Builder's Risk			
Installation Floaters			
Railroad Protective Liability Coverage			

POLICY AND INSURER INFORMATION

ID	Name of Insurer	Policy Number	Expiration Date	Best's Rating	Authorized in Florida (Y/N)?

Authorized Representative's Name: _____

(Print and then sign)

Date: _____

Name of Insurance Company: _____

Address of Insurance Company: _____

JACKSONVILLE PORT AUTHORITY

SUMMARY AND CERTIFICATION

APPLICATION FOR PAYMENT NO.

PROJECT NAME:
PROJECT LOCATION: DATE:
JPA CONTRACT NO: C-1791R A/E PROJECT NO.:
CONTRACTOR:
APPLICATION PERIOD: TO:

1. ORIGINAL CONTRACT SUM..... $

2. MODIFICATION BY CHANGE ORDERS..... $

3. LESS: Purchase Orders issued by JPA for material selected for tax savings..... $
4. LESS: State and Local Tax savings on material purchase orders..... $
5. LESS: TOTAL PURCHASE ORDERS & TAX SAVINGS..... $
(Line 3 plus Line 4)
6. CURRENT CONTRACT VALUE..... $

7. TOTAL COMPLETED & STORED TO DATE..... $

8. RETAINAGE WITHHELD:
_____% of Completed Work
_____ % of line 7)..... $

10. TOTAL EARNED LESS RETAINAGE WITHHELD..... $

11. LESS PREVIOUS PAYMENTS RECEIVED..... $

12. AMOUNT DUE THIS PAYMENT..... **$**

SUMMARY OF APPROVED CHANGE ORDERS			SUMMARY TAX SAVING'S PURCHASE ORDERS		
No.	Date Appd.	Value (+ -)	No.	Date Appd.	Value (+ -)
TOTALS: $			TOTALS: $		

CONTRACTOR'S CERTIFICATION

The undersigned CONTRACTOR certifies that: (1) all items and amounts shown above are correct; (2) all Work performed and materials supplied fully comply with the terms and conditions of the Contract Documents; (3) all previous progress payments received from JAXPORT on account of Work done under the Contract referred to above have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with Work covered by prior Applications for Payment; (4) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to JAXPORT at time of payment free and clear of all liens, claims, security interests and encumbrances; and (5) if applicable, the CONTRACTOR has complied with all provisions of Article V of the Specification documents including the payment of a pro-rata share to JSEB, MBE, WBE, DBE and/or SBA Firms of all payments previously received by the CONTRACTOR.

State of Florida, County of Duval
Subscribed and sworn to **before me this**
_____**day** of _____ 20_____-

By:_____-
Title._____ Date:_____
who is/are personally known to me or has/have produced
_____ (type of identification)
as identification.
Notary Signature:_____-
Commission No.:_____-
_____
(Name of Notary typed,
Printed or Stamped)
My Commission Expires:_____-(SEAL ABOVE)

BY THE OWNER'S CONSULTANT

I hereby certify that, to the best of my knowledge, and belief, based in part on actual site observations, the Contractor has satisfactorily completed the work represented in this Application for Payment in accordance with requirements of the contract documents, and payment of the current amount due to the Contractor is recommended.

Firm:-_____

By:-_____

Title: Date:_____

JPA APPROVAL FOR PAYMENT

By:_____

Date:_____

Project Acct.:_____

FORM AFP-1 REVISED 11/01/2022

R/08/06

CONTINUATION SHEET

FORM AFP-2 REV 10/2013

CONTRACTOR NAME:	APPLICATION NO:
CONTRACTOR'S CONTRACT NO:	APPLICATION DATE:
PROJECT NAME:	DATE OF NOTICE TO PROCEED:
PERIOD FROM / TO:	CONTRACT COMPLETION DATE:

PERCENT OF TIME USED TO DATE: ________% PERCENT COMPLETE TO DATE: ________%

A	B	C	D	E	F	G	H	I	J	K
DELIVERABLES	ITEM NO. CSI CODES	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED FROM PREVIOUS APPLICATION (E + F)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN E OR F)	TOTAL COMPLETED AND STORED TO DATE (E+F+G)	% (H ÷ D)	BALANCE TO FINISH (D - H)	RETAINAGE
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
							$0.00	#DIV/0!	$0.00	$0.00
CHANGE ORDERS ISSUED TO DATE										
						N/A	$0.00	#DIV/0!	$0.00	$0.00
						N/A	$0.00	#DIV/0!	$0.00	$0.00
						N/A	$0.00	#DIV/0!	$0.00	$0.00
						N/A	$0.00	#DIV/0!	$0.00	$0.00
						N/A	$0.00	#DIV/0!	$0.00	$0.00
						N/A	$0.00	#DIV/0!	$0.00	$0.00
		GRAND TOTALS					$0.00	#DIV/0!	$0.00	$0.00

SUMMARY LINE ITEM DEDUCTIONS FOR TAX SAVINGS PURCHASE ORDERS ISSUED AND PAID TO DATE REPORT

A	B	D	E	F	G	H	I	J	K	L
DATE OF REPORT	TOTAL # OF TSPO'S ISSUED TO DATE	SUB-TOTAL MATERIAL TSPO'S ISSUED - SCHEDULED VALUE DEDUCT	TOTAL ESTIMATED SALES TAX	TOTAL TAX SAVINGS P.O. DEDUCTION (D + E)	VENDORS PAID TO DATE PREV. PERIOD	THIS PERIOD	TOTAL SALES TAX DEDUCTION TO DATE	TOTAL MATERIALS & TAXES RECEIVED AND STORED TO DATE (G + H + I)	BALANCE TO FINISH (F - J)	% OF PURCHASED MATERIALS COMPLETED (J ÷ F)
		($)								
		TOTALS (SEE TSPO REPORT)	$0.00	$0.00	$0.00	$0.00	$0.00	#DIV/0!	$0.00	$0.00

FORM AFP-2 REV 10/2013

C-1791R
Request for Information

Date Created:

Answer Company	Answer By	Author Company	Authored By

Co-Respondent **Author RFI Number**

Subject	Discipline	Category

Question **Date Required**

Submitted By: _____ **Date:**_____

Suggestion

Answer **Date Answered:**

Submitted By: _____ **Date:**_____

AGREEMENT BETWEEN OWNER AND CONTRACTOR

This Agreement is entered into as of this _____ day of _____, 2023 by and between:

The OWNER:	**Jacksonville Port Authority** **2831 Talleyrand Avenue** **Post Office Box 3005** **Jacksonville, FL 32206-0005** **(904) 357-3065** **ATTN: Procurement Services**
And the CONTRACTOR:	**Awarded Contractor Name** **Awarded Contractor Address** **Awarded Contractor Phone Number** **Insert Vendor Number**
For the following WORK:	**Contract No.: C-1791R** **Project No.: B2021.10** **INSTALL RAIL GATES AT CROSSINGS TWO (2) LOCATIONS (RE-BID)** **BLOUNT ISLAND MARINE TERMINAL**
Designed by CONSULTANT:	**JACOBS ENGINEERING**

The OWNER and CONTRACTOR agree as set forth below:

ARTICLE 1. SCOPE OF WORK

The Contractor agrees to furnish all materials, equipment, supervision and perform all labor and services for Contract No. **C-1791R** as shown on the contract drawings and described in the project specifications, each document of which is incorporated herein by reference and listed under Article 2 hereof.

ARTICLE 2. CONTRACT DOCUMENTS

The contract documents, which constitute the entire Agreement between the Owner and the Contractor, are enumerated below and all are as fully a part of the contract as if attached to this Agreement Form or repeated herein.

1. Agreement between Owner and Contractor.
2. Exhibits and Attachments to this Agreement.
3. Contractor's Bid, Performance Bond, and Statutory Payment Bond.
4. Contractor's Bid Form.
5. Invitation to Bidders.
6. Supplementals Instruction to Bidders.
7. Conflict of Interest Certificate.
8. General Conditions of the contract.
9. Supplementary Conditions of the contract.
10. Special Conditions of the contract.
11. Technical Specifications.
12. Drawings entitled:_____
13. Addenda Nos. _____through_____, inclusive.
14. Change Orders, duly authorized and delivered after execution of this Agreement.
15. Notice of Award.
16. Notice to Proceed.
17. Certificate of Contract Completion and Contractors Affidavit to Owner.
18. Certificate of Substantial Completion.
19. Approved Contractor's Construction Schedule for the Work.
20. Contractor's Schedule of Values for the Work.
21. Contractor's Request for Information Form.
22. Owner's Minimum Project Work Rules.
23. Required Limits of Insurance.
24. Certificate of Insurance Compliance.
25. Application for Payment Forms.
26. Form of Consent of Surety Company to Final Payment.
27. SEB Participation Goal – (**ENCOURAGED _0_**%)

ARTICLE 3. CONTRACT TIME

1. Contract Time. Time is of the essence for all Work in this contract. The Contractor shall totally and finally complete the Work within **260** calendar days from Notice to Proceed date.
2. Liquidated Damages. Refer to "Special Conditions", Item 2.

ARTICLE 4. CONTRACT SUM

For the performance of the Work and in accordance with the terms of the contract documents, the Owner will pay to the Contractor, subject to additions and deductions by Change Order, the Contract Sum of:

$_____

ARTICLE 5. PROGRESS PAYMENTS

See "General Conditions", Section IV.3.a.

ARTICLE 6. FINAL PAYMENT

The Owner shall cause to be paid, to the Contractor, a final payment constituting the entire unpaid balance of the Contract Sum, when the Work has been completed, the Contract and closeout procedures are fully performed, and the Project Manager has reviewed and approved the final application.

ARTICLE 7. MISCELLANEOUS PROVISIONS

1. Terms. Terms used in this Agreement which are defined in the Conditions of the contract shall have the meaning designated therein.
2. Contract Bonds. The Contractor shall furnish a Performance Bond, and Statutory Payment Bond for 100 percent of the Contract Sum as security for the faithful performance and payment of all obligations under the contract documents.
3. Indemnity. In addition to the indemnity provisions of General Conditions Section V.1.g., the Contractor shall hold harmless, indemnify and defend the JPA, its board of directors, officers, employees, representatives and agents against any claim, action, loss, damage, injury, liability, cost and expense of whatsoever kind or nature, including but not limited to attorney's fees and court costs arising out of any injury, whether mental or corporeal, to persons, including death, or damage to property to the extent caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor, its employees, representatives, or any one acting on the Contractor's behalf in the performance of this contract, or any claim or damage or claim damage related to alleged breach of contract.
4. Access to Documents. The Owner shall be provided daily reports in possession of the Contractor. Owner shall also have access to any other documents related to the project, upon reasonable notice.
5. Subcontracting or Assigning of Contract. The Contractor 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 Owner's prior written consent.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

OWNER	CONTRACTOR
JACKSONVILLE PORT AUTHORITY	
BY: _____	BY: _____
TITLE: _____	TITLE: _____
ATTEST:	ATTEST:
_____	_____

ACKNOWLEDGEMENT AND ACCEPTANCE OF E-VERIFY COMPLIANCE

E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION

In accordance with the Governor of Florida, Executive Order Number 11-02 (Verification of Employment Status), whereas, Federal law requires employers to employ only individuals eligible to work in the United States; and whereas, the Department of Homeland Security's E-Verify system allows employers to quickly verify in an efficient and cost effective manner;

The Contractor agrees to utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of the contract. Contractors must include in all subcontracts the requirement that all subcontractors performing work or providing goods and services utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term. The Contractor further agrees to maintain records of its participation and compliance and its subcontractor's participation and compliance with the provisions of the E-Verify program, and to make such records available to JAXPORT upon request. Failure to comply with this requirement will be considered a material breach of the contract.

By signing below, I acknowledge that I have reviewed, accept and will comply with the regulations pertaining to the E-Verify program.

Company Name | Name of Official (Please Print)

Signature of Principal | Title: | Date

CERTIFICATE OF CONTRACT COMPLETION
AND CONTRACTOR'S AFFIDAVIT TO OWNER

CONTRACT: **C-1791R**

STATE OF ( )

COUNTY OF ( ) Before me, the undersigned authority,

Personally appeared _____, who being by me
First duly sworn, depose(s) and say(s):

1. He is (they are)_____, (a corporation) (a partnership) (an individual) doing business as _____, hereinafter called "Contractor".

2. Contractor heretofore entered into a contract with the Jacksonville Port Authority, hereinafter called "Owner", to furnish material, labor, and services for the construction of a certain building; or repairs or alterations as more specifically described in said contract, on the land and property of the Owner, located at _____, Duval County, Florida.

3. Contractor has fully completed construction in accordance with the terms of the contract and all creditors have been paid in full, except:

Name of Creditor	Amount Due and Unpaid
_____	$_____
_____	$_____

4. All Workers' Compensation claims have been settled and no liability claims are pending in connection with, arising out of or resulting from, the contract.

5. Receipt by the Contractor of the final payment, under the aforementioned contract, shall constitute a full release and discharge by the Contractor to the Owner of any and all claims of the Contractor against the Owner arising out of, connected with, or resulting from performance of the obligations of the Contractor pursuant to the contract documents.

6. The term "Creditor" as used in this Affidavit means subcontractors, laborers, material men, architects, engineers, landscape architects, surveyors, and all other persons, firms, corporations and activities supplying , performing, or otherwise providing anything of value used for or in connection with the contract.

7. This Affidavit is given pursuant to the provisions of the contract and applicable law, if any. Signed and Sealed in the presence of:

_____ _____

_____ _____

Sworn to and subscribed before me this _____day _____, 2023.

_____
Notary Public, State of _____
My Commission Expires: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Distribution to:
OWNER ☐
ENGINEER ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

PROJECT:

ENGINEER:

ARCHITECT'S PROJECT NO.:

TENANT:

PROJECT NO.:
CONTRACT NO.:

TO (Owner):

JACKSONVILLE PORT AUTHORITY
POST OFFICE BOX 3005
JACKSONVILLE, FL 32206-0005

ATTN: ENGINEERING SERVICES

CONTRACTOR:

CONTRACTOR FOR:

DATE OF ISSUANCE:

CONTRACT DATE:

PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as _____, **2023** which is also the date of commencement of applicable warranties required by the Contract Documents, except at stated below.

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Engineer when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

A list of items to be completed or corrected, prepared by the Contractor and verified and amended by the Engineer, is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The date of commencement of warranties for items on the attached list will be the date of final payment unless otherwise agreed to in writing. Attached Punch List prepared by dated .

ENGINEER BY DATE

The Contractor will complete or correct the Work on the list of items attached hereto within **(_____calendar)** days from the Date of Substantial Completion.

CONTRACTOR BY DATE

The Tenant accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at (time) (date).

TENANT BY DATE

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at (time) (date).

Jacksonville Port Authority
OWNER BY DATE

FORM SUBCOM
R/08/06

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

OWNER ☐
ENGINEER ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

PROJECT:
(name, address)

TO (Owner)

JACKSONVILLE PORT AUTHORITY
POST OFFICE BOX 3005
JACKSONVILLE, FL 32206-0005

ATTN: ENGINEERING SERVICES

CONTRACTOR:

PROJECT NO.

CONTRACT NO.:

ARCHITECT'S PROJECT NO.

CONTRACT FOR:

CONTRACT DATE:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the

(here insert name and address of Surety Company)

SURETY COMPANY,

On bond of (here insert name and address of Contractor)

CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to (here insert name and address of Owner)

OWNER,

as set for in the said Surety Company's bond.

IN WITNESS WHEREOF,
The Surety Company has hereunto set its hand this day of 20

_____
Surety Company

_____
Signature of Authorized Representative

Attest:
(Seal):

_____
Title

OWNER'S MINIMUM PROJECT WORK RULES

Project Name: **INSTALL RAIL GATES AT CROSSINGS 2 LOCATIONS (RE-BID)**

Location: **BLOUNT ISLAND MARINE TERMINAL**

Contract No(s).: **C-1791R**

1. Normal project working hours are as follows:

8:00 A.M.	Starting Time
12:00 Noon - 1:00 P.M.	Lunch
5:00 P.M.	Shift Ends

   Other working hours and shift work will be considered by the Owner upon submission by the Contractor.

2. No employee will enter Port Authority operating areas without a specific work assignment.
3. Personal vehicles will be parked in the area(s) specified for construction personnel.
4. No personal vehicles will be permitted inside the security gate controlled area without the written permission of the Terminal Director.
5. Contractor shall provide its employees with a designated eating, drinking area subject to approval of the Project Manager. Cleanliness will be maintained in all areas at all times. The parking lot is not an authorized eating area.
6. The following is a list of violations which are considered unsatisfactory conduct on JPA property and can result in the employee being denied access to the jobsite.
   a. Refusal to submit to security inspection.
   b. Smoking in prohibited areas.
   c. Possession and/or use of intoxicants on JPA property.
   d. Possession and/or use of narcotics or controlled substance on JPA property.
   e. Possession of firearms on JPA property.
   f. Contact with any new vehicles on JPA property.
7. Owner's facilities (such as, but not limited to, elevators, washrooms, vending machines, lunch rooms, etc.) are not to be used by Contractor's employee.

8. Employees shall be provided with visible means of identification, showing Contractor's identification. Employees are required to wear this identification where plainly visible.

9. The Contractor will be responsible for all its employees, suppliers, vendors, and all others on-site providing services to the Contractor.

10. All vehicles, persons, packages, lunch pails, and tool boxes entering or leaving JPA property are subject to security inspection.

11. All vehicles on-site for the Contractor's use must have company identification clearly visible at a minimum distance of 100 feet.

EMPLOYEE SIGNATURE: _____

EMPLOYEE NAME: _____

NAME OF CONTRACTOR: _____

DATE: _____

OWNER'S SAFETY GUIDELINES

Project Name: **INSTALL RAIL GATES AT CROSSINGS 2 LOCATIONS (RE-BID)**

Location: **BLOUNT ISLAND MARINE TERMINAL**

Contract No(s).: **C-1791R**

The safety items listed below is not intended as an exhaustive list of safety requirements but serves as a general guideline.

Safety Manual

The contractor is responsible to provide JAXPORT with an electronic copy of their jobsite specific safety manual that provides safety guidance on day to day work activities to reduce potential safety incidents at the jobsite.

Regulatory Requirements

The contractor and subcontractors will be responsible to:

- Comply with OSHA 29 CFR parts 1917 marine terminals, 1926 construction, 1910 general, 1926.59 hazardous communication standards "right-to-know".
- Post Material safety data sheets (MSDS) in work locations where contractor uses, or stores hazardous chemicals or substances as required by law.
- Contractor and subcontractor will comply with all environmental protection laws and regulations applicable to the jobsite, including those relating to the use of water, the release, discharge or disposal of wastes, the control of drainage, and the protection of vegetation, wildlife, habitats, or surroundings. Contractor and subcontractor shall also observe and comply with any environmental requirements made by JAXPORT in securing any permit or authorization for the jobsite.
- Communicate and wear OSHA required personal protective equipment when on the job site (i.e. reflective vests with Company's identification, gloves, hard hats, safety glasses, steel toe shoes, etc.).
- If applicable ensure that platforms and scaffolding conform to OSHA specifications and have decking, toe boards, mid and top rail, cross bracing, level pads and/or wheels and appropriate ladders for platform access. Ensure the use of continuous fall protection equipment (scaffolds and/or harnesses) when activities take place more than 6'-0" above a lower level or at such lower elevations as may be established for the work site.
- If it becomes necessary to have access to any openings or shafts or to remove handrails, contractor and or subcontractor shall ensure that the openings or shafts are protected in accordance with generally accepted practices and any applicable federal, state or local safety standards while the work is in progress, and that any covers or handrails previously removed by the contractor and or subcontractor are replaced before leaving the area.

Jobsite Requirement

- Contractor will provide safety barriers to clearly identify the working area to prevent others from accessing the work area. The safety zone shall be sufficiently sized to prevent damage to others or existing facilities and structures. Upon completion of the work, Contractor shall remove the safety barriers from the work area.
- Maintain clean work areas and secure and protect all work materials in accordance with safety requirements of generally recognized industry standards.
- Additional safety rules and/or measures may become necessary at any time due to near misses, change in jobsite location, etc.
- Familiarize and abide by JAXPORT safety rules for the jobsite.
- Communicate frequency of safety meeting with its employees and list the topics discussed with signatures of attendees. Such list shall be made available to JAXPORT upon request.
- Perform self-audits (safety assessments) at least monthly and document and provide findings to JAXPORT project management and Risk and Compliance manager upon request.

Incident/Emergency Response Plan

- As soon as possible, but no longer than 2 hrs. after the time of incident, advise JAXPORT of any incident resulting in injury or damage to any property. A written report of the incident will be submitted to the supervising JAXPORT Project Manager and JAXPORT's Manager of Risk and Compliance (904) 357-3083 within 24 hours. Daily updates will be provided to JAXPORT until an investigation is completed.
- Provide JAXPORT on-site management with an "emergency list" showing contractor's preferred company doctor, hospital, workers' compensation insurance company, and any other health care providers, such list to be updated within 24 hours of any change in the information provided. Contractor shall furnish its employees with first aid or refer employees with first aid injuries to its company doctor.

Audit and Training

- Contractor's responsibility is to train, manage, supervise, monitor, and inspect contractors and subcontracted jobsite work activities enforcing compliance with all applicable federal, state, local laws and JAXPORT safety rules and requirements.
- Documentation of required training must be readily available and in compliance with OSHA requirements.
- JAXPORT personnel may audit contractors and subcontractor's safety processes/programs at the jobsite at any time and empowered to take necessary corrective action up to and including work stoppage for serious safety hazards.

EMPLOYEE SIGNATURE: _____

EMPLOYEE NAME: _____

NAME OF CONTRACTOR: _____

DATE: _____

PERFORMANCE BOND

BOND NO.: _____

As to the Contractor/Principal:

Name: _____

Principal Business Address:_____

_____

Telephone:_____

As to the Surety:

Name: _____

Principal Business Address:_____

_____

Telephone:_____

As to the Owner of the Property/Contracting Public Entity:

Name: _____

Principal Business Address:_____

_____

Telephone:_____

Description of project including address and description of improvements:

_____

_____

Contractor and Surety are each held and firmly bound unto the Jacksonville Port Authority, a body politic and corporate in Duval County, Florida, as Obligee (hereinafter called "JAXPORT"), in the amount of _____DOLLARS **($_____),** lawful money of the United States of America, for the payment whereof Contractor and Surety bind themselves, their respective heirs, executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these

presents.

WHEREAS, Contractor has by written agreement dated the____ day of _____, 20___, entered into a contract with the JAXPORT for _____

_____

_____

all of said work to be done in strict accordance with any advertisement for bids for said work and done in strict compliance with the drawings and specifications for said work and requirements of the JAXPORT proposal and award therefore and of the contract and all documents included as a part of the contract (hereinafter referred to collectively as the "Contract"), all of which are by reference made a part hereof to the same extent as if fully set out herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall: (1) Promptly and faithfully perform said Contract; and (2) perform the guarantee of all work and materials furnished under the Contract for the time specified in the Contract; and (3) pay the JAXPORT all losses (including delay and disruption damages), expenses and costs, that the JAXPORT sustains because of a default by Contractor under the Contract; then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED that, the Surety hereby waives notice of any alteration or extension of time made by the JAXPORT, and any changes in or under the Contract and compliance or noncompliance with any formalities connected with the Contract or the changes shall not affect Surety's obligation under this bond.

PROVIDED further that, whenever Contractor shall be, and declared by the JAXPORT to be in default under the Contract, the JAXPORT having performed the JAXPORT's obligations hereunder, the Surety shall, at the JAXPORT's sole option, either:

(1) Within fourteen (14) days of notice of elected option by the JAXPORT, remedy the default and pay the JAXPORT all losses, actual damages (including delay and disruption damages), expenses, costs, and statutory attorney's fees, including appellate proceedings, pursuant to Section 627.756, Florida Statutes, that the JAXPORT sustains because of a default by Contractor under the Contract and will save the JAXPORT harmless on account of all claims and damages to persons, property or premises arising from delay in meeting either milestone dates or the Contract completion date; or

(2) Award a bid contract with a completion contractor and issue notice to proceed within twenty-one (21) days of notice by the JAXPORT to the Surety of the default of Contractor and demand by the JAXPORT for Surety to complete the Contract. Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible qualified bidder, or, if the JAXPORT elects, upon determination by the JAXPORT and the Surety jointly of the lowest

bidder and the JAXPORT, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the responsible qualified bidder, arrange for a contract between such balance of the contract price, including other losses, actual damages (including delay and disruption damages), expenses, costs and statutory attorney's fees, including appellate proceedings, pursuant to Section 627.756, Florida Statutes, for which the Surety may be liable hereunder. The term balance of the contract price" as used in this paragraph, shall mean the total amount" payable by the JAXPORT to Contractor under the Contract and any amendments thereto, less the amount properly paid by the JAXPORT to Contractor; or

(3) Within fourteen (14) days of notice of elected option by the JAXPORT, tender to the JAXPORT the full amount necessary in order for the JAXPORT to completely perform and carry out completion of the Contract in accordance with its terms and conditions and in order to save the JAXPORT harmless on account of all claims and damages to persons or property, and pay the JAXPORT for all losses, actual damages (including delay and disruption damages), including those arising from delay in meeting either milestone dates or the Contract completion date, expenses, costs and statutory attorney's fees, including appellate proceedings, pursuant to Section 627.756, Florida Statutes.

PROVIDED further that, the Surety shall save the JAXPORT harmless from any and all damages, including expenses, costs, contractual damages, injury, negligence or default, patent infringement and actual damages (including delay and disruption damages) and assessments which may arise by virtue of any defects in work or materials within a period of one (1) year from the date on which the JAXPORT makes final payment under the Contract.

PROVIDED further that, during any interim period after the JAXPORT has declared Contractor to be in default but Surety has not yet remedied the default in the manner chosen by the JAXPORT, Surety shall be responsible for securing and protecting the work site including, but not limited to, the physical premises, structures, fixtures, materials, and equipment, and shall be responsible for securing and protecting materials and equipment stored off-site.

PROVIDED further that, no right of action shall accrue on this bond to or for the use of any person or corporation other than the JAXPORT named herein or the heirs, executors, administrators or successors of the JAXPORT.

IN WITNESS WHEREOF, the said Principal and the said Surety have duly executed this bond the ____ day of _____, 2023.

ATTEST: **ATTEST:**

By:_____ **By:_____**
Its **Its**
AS PRINCIPAL

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

ATTEST: **ATTEST:**

By:_____ **By:_____**
Its **Its**
AS SURETY

NAME OF AGENT:_____

ADDRESS:_____

TELEPHONE NO: (___)_____ FACSIMILE NO: (___)_____

Countersigned:

By:_____ Bond I.D. No:_____
State of Florida

Name of Firm:_____

Address:_____

NOTE: DATE OF BOND MUST NOT BE PRIOR TO DATE OF CONTRACT.

CONTRACT NUMBER_____
PAYMENT BOND
CONTRACT BOND REQUIRED
BY SECTION 255.05, FLORIDA STATUTES

Bond No._____

As to the Contractor/Principal:

Name: _____

Principal Business Address:_____

_____

Telephone:_____

As to the Surety:

Name: _____

Principal Business Address:_____

_____

Telephone:_____

As to the Owner of the Property/Contracting Public Entity:

Name: _____

Principal Business Address:_____

_____

Telephone:_____

Description of project including address and description of improvements:

_____

_____

Contractor and Surety are each held and firmly bound unto the Jacksonville Port Authority, as a group, and each member individually, as Obligee (hereinafter called Owner), in the amount of _____ DOLLARS ***($_____)***, lawful money of the United States of America, for the payment whereof Contractor and surety bind themselves, their respective heirs, executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor and Owner have by written agreement dated the _____ day of _____, 20___, entered into a contract for **_C-1791R_ INSTALL RAIL GATES AT CROSSINGS 2 LOCATIONS (RE-BID)**, **BLOUNT ISLAND MARINE TERMINAL** all of said work required to be done in strict compliance with the drawings, plans and specifications prepared by the Jacksonville Port Authority Engineering and Construction Department for said work and in strict compliance with the requirements of the contract and all documents included as a part of the contract (hereinafter referred to collectively as the Contract), all of which are by reference made a part hereof to the same extent as if fully set out herein.

Promptly makes payments to all lienors or claimants supplying labor, materials and supplies used directly or indirectly by Contractor in the prosecution of the work provided for in the Contract, including any authorized extensions or modifications thereof, then this bond is void; otherwise, it remains in full force and effect.

PROVIDED, that the Surety hereby waives notice of any alteration or extension of time made by the Owner, and any changes in or under the Contract and compliance or noncompliance with any formalities connected with the Contract or with the changes do not affect Surety's obligation under this bond.

PROVIDED, further, that no action shall be instituted or prosecuted against the Contractor or the Surety on the bond after one (1) year from the performance of the labor or completion of delivery of the materials or supplies, or the date the rental equipment was last on the jobsite available for use.

IN WITNESS WHEREOF, the said Principal and the said Surety have duly executed this bond the _____ day of _____, 20__.

ATTEST: **ATTEST:**

By: _____ **By:_____**

Its **Its PRINCIPAL**

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF:

ATTEST: **ATTEST:**

By: _____ **By:_____**

Its **Its SURETY**

NAME OF AGENT: _____

ADDRESS: _____

TELEPHONE NO. (___)_____ **FACSIMILE NO: (___)_____**

Countersigned:

By: _____ **Bond I.D. No: _____**

State of Florida

Name of Firm: _____

Address: _____

NOTE: DATE OF BOND MUST NOT BE PRIOR TO DATE OF CONTRACT.

SCOPE OF WORK

FOR

INSTALL RAILROAD CROSSING GATES 2 LOCATIONS (RE-BID)

Project No.: B2021-10

Contract No.: C-1791R

BLOUNT ISLAND MARINE TERMINAL

JAXPORT

JACKSONVILLE PORT AUTHORITY

GRADE CROSSING IMPROVEMENTS C-1791R

SCOPE OF SIGNAL WORK

A. The Work to be performed under this Contract consists of providing (designing, furnishing, installing, testing and placing in service) an upgrade to Automatic Highway Crossing Warning System (AHCW) at locations specified herein and shown on the Contract Drawings.

B. It is the sole responsibility of the Contractor to perform all the Work in conformance with the Contract Documents, to complete the work on time and to the satisfaction of the Owner.

C. The Contractor shall remove and dispose of all retired crossing warning system equipment and other out-of-service facilities as described on the Contract drawings in the vicinity of the grade crossing within the Railroad right-of-way and return to the Railroad unless directed otherwise.

D. The Work includes preparation of the new as-built and record drawings as specified herein.

E. The Contractor shall coordinate all work with the Operating Railroad, local municipalities and utilities as required for the track outages, traffic management including roadway and sidewalk shutdowns and/or detours as required. Testing and placing in service of signal equipment shall be witnessed and accepted by the Operating Railroad.

F. The Contractor shall develop and obtain approval of an overall Project construction schedule. Any updates and revisions to the approved Project construction schedule shall be submitted for approval at once.

G. The Contractor shall provide a weekly look-ahead schedule based on the latest approved overall Project construction schedule a minimum of three (3) days in advance of preforming the work.

H. The Contractor shall provide all miscellaneous or ancillary parts, products and materials that may not be specifically identified, but which are required to provide a complete fully functional grade crossing warning system. All work elements described herein shall be the responsibility of, and the part of Work provided by the Contractor.

I. The Contractor shall provide for timely and secure transportation of all equipment and material to the installation location. The Contractor shall complete all necessary work in preparation of each site prior to delivery and installation of equipment to eliminate off site storage as much as practicable. The Contractor shall be responsible for all labor and equipment required for safe storage, safe transporting, delivery to and installation of signal equipment without damage.

J. The Contractor shall be responsible for coordinating with all utility owners for the purpose of locating, protecting, and preserving all existing overhead or underground utilities, conduits, cabling, including any ground mounted crossing signals or other structures within the grade crossing construction work limits.

K. The Contractor shall protect existing facilities from damage for the duration of construction. Any equipment, cables, structures or other facilities damaged during construction shall be replaced with identical material, tested and placed in service by the Contractor in accordance with these Specifications

and as approved by the Engineer. All additional material, labor or other costs, including impacts to the Project schedule, costs and impacts to the Railroad operations as results of equipment damage shall be full responsibility of the Contractor.

L. All drawings submitted for approval shall be prepared using the latest version of MicroStation CAD software and shall be submitted for approval as PDF files. As-built and record drawings resultant from the work performed under this Contract shall be submitted as the latest version of MicroStation and as PDF files.

M. The Contractor shall replace existing cables with new as shown on the Contract Drawings. Cables under roadway and under tracks shall be installed inside existing conduits after removal of retired cables.

N. Where existing conduits cannot be located or reused, the Contractor shall furnish and install new conduits as specified herein. The Contractor shall be responsible for all costs associated with installation of the new conduits under the roadway and under the tracks. Conduits under track shall be Rigid Galvanized Steel.

O. The Contractor shall provide general clean-up during on-going construction, maintain temporary barriers required for safe prosecution of the work. The Contractor shall be responsible for the removal of all trash, packing materials, construction debris and all other project-related equipment and supplies from the right-of-way and adjacent areas at the end of each shift and upon completion of the project work.

P. The Contractor shall schedule and coordinate the Work with other contracts and Railroad maintenance activities that are concurrent with and adjacent to the limits of this Contract. Specifically, the Contractor shall closely coordinate signal work with grade crossing surface and track replacement work to utilize the street closure provided for that work as much as practicable.

Q. The Contractor shall provide enclosed and secure facilities for storage of materials delivered by his vendors for installation under this Contract in accordance with approved schedule. It is responsibility of the contractor to have all material, labor and equipment ready for performing work during the grade crossing street closure. The Contractor shall be responsible for any loss or damage to the material and equipment stored in these facilities. The Contractor shall remove storage facilities and restore the site to its original conditions after completion of work

R. The Contractor shall be responsible for all required mobilization and de-mobilization activities.

S. The Contractor shall protect existing track structure from damage and shall avoid track contamination by construction and excavation debris and shall restore track to its original condition by the end of each workday. The Contractor shall restore track structure and the construction site to its original condition whenever it was affected as results of his activities.

T. The Contractor shall provide material, equipment, tools, and labor to upgrade grade crossing facilities in accordance with the requirements of Technical Specifications and Contract Drawings. All material and equipment proposed for installation shall be submitted and approved prior to furnishing in accordance with the requirements of Submittals Section of the Technical Specifications.

U. Where the new train detection equipment is required, the Contractor shall ensure that response time specific for the proposed equipment is included in calculations of warning time and approach distance length.

V. The Contractor shall ensure that calculations of warning time and approach distance length are based on the Maximum Authorized Speed established over the grade crossing territory at the time of placing AHCW in service. The Contractor shall relocate shunts or other approach length limiting facilities if existing approach distances require revision.

W. The Contractor shall ensure that new or relocated shunts or other approach length limiting facilities do not affect operation of adjacent crossings.

LOCATION SPECIFIC SUMMARY OF SIGNAL IMPROVEMENTS

A. CHANNEL VIEW BLVD

1. Wayside Facilities:
   a. Remove Type C (AC/DC) track circuits including but not limited to:
      i. Track Diode (RING-10)
      ii. Track leads
      iii. Insulated joints
   b. Install New:
      i. Narrow Band Shunt
      ii. Gate 3 layout complete with:
         - foundation,
         - 5" dia. mast,
         - gate mechanism
         - 28' arm and arm flashers
         - spring loaded gate saver
      iii. Island track leads and gate cable from Dave Rawls bungalow.

B. DAVE RAWLS BLVD

1. Wayside Facilities:
   a. Remove Type C (AC/DC) track circuits including but not limited to:
      i. Track Diode (RING-10)
      ii. Track leads
      iii. Insulated joints
   b. Install New:
      i. Narrow Band Shunt
      ii. Gate 1A complete with:
         - Foundation
         - 5" dia. mast
         - gate mechanism
         - spring loaded gate saver
         - 24' arm and arm flashers

- gate cable

iii. Gate 1B complete with:
- Foundation
- 5” dia. mast
- gate mechanism
- spring loaded gate saver
- 18’ arm and arm flashers
- gate cable

iv. Gate 2A complete with:
- Foundation
- 5” dia. mast
- gate mechanism
- spring loaded gate saver
- 30’ arm and arm flashers
- gate cable

v. Gate 2B complete with foundation, mast, gate mechanism, spring loaded gate saver, 24’ arm and arm flashers and cable
- Foundation
- 5” dia. mast
- gate mechanism
- spring loaded gate saver
- 24’ arm and arm flashers
- gate cable

vi. New island track circuit cable.

2. Control Facilities
   a. Two (2) Biased- Neutral relays
   b. Motion Detection Surge Arrestor (MDSA)
   c. PMD-4 Motion Detector
   d. Two (2) Solid State Crossing Controllers (SSCC)
   e. Two (2) surge protection panels
   f. Additional battery cell.

C. INTERMODAL DRIVE (Owners Option)

1. Wayside Facilities:
   a. Four (4) narrow band shunts
   b. Two (2) complete flasher and gate layouts A and B including:
      i. Foundation
      ii. Two (2) 5” dia. mast
      iii. One (1) one-way 12” LED flasher layout
      iv. One (1) two-way 12” LED flasher layout

v. Two (2) gate mechanisms,
vi. Two (2) spring loaded gate savers
vii. 36’ gate arm and 33’arm, arm flashers
viii. 33’gate arm and arm flashers
ix. One (1) electronic bell

c. Three (3) complete flasher layouts C, D and E each including:
i. Foundation
ii. 4” dia. mast
iii. One (1) one-way 12” LED flasher layout
iv. One (1) electronic bell

d. Four (4) RGS conduits under tracks
e. All required cable for gates, flashers and track circuits

2. One (1) signal instrument housing complete with all required AHCW control and power equipment.
3. Power cable from the power case. Power case provided by others.

TECHNICAL SPECIFICATIONS

FOR

INSTALL RAILROAD CROSSING GATES 2 LOCATIONS (RE-BID)

Project No.: B2021-10

Contract No.: C-1791R

BLOUNT ISLAND MARINE TERMINAL

Division 34 Transportation

SECTION 341125 - RAILROAD TRACK BALLAST

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes the requirement for grading and other significant physical properties of mineral aggregates for prepared track ballast. The suppliers governed by this specification, shall have, or establish a quality system that complies with DOT, AAR Specification for Quality Assurance, M1003 (AAR M-1003), or International Quality Standard ANSI 9000 Series (ISO 9001).

B. Related Requirements:

1. Section 012100 "Allowances" for products selected under an allowance.

PART 2 – PRODUCTS

2.1 TYPES OF BALLAST

A. Quarried Granite, Trap Rock, and Dolomite Limestone produced in a crushing-screeningplant designed to satisfy the specifications listed herein.

2.2 GENERAL REQUIREMENTS

A. The type and sizes of prepared ballast shall be designated by the Owner in conformance to approved standards. The mineral aggregate shall be clean, hard, durable, free from any frozen lumps, deleterious matter, and harmful adherent coatings. No materials subject to regulation as hazardous wastes as defined in the administrative code of the state where thematerial will be used shall be allowed.

2.3 HANDLING

A. Processed ballast shall be handled at the producing plant in such a manner that it is kept free from segregation. It shall be loaded only into trucks/railcars which are clean and freefrom rubbish or any substance that would foul or damage the ballast. The producer shouldnot make repeated passes of equipment over the same levels in stockpiled ballast.

B. Track ballast shall be washed prior to loading in truck/railcars.

PART 3 - EXECUTION

3.1 INSPECTION

A. The Owner reserves the right to reject any car of ballast arriving at the site for unloading that does not conform to the specification as determined by methods of test.

B. If material loaded does not conform to these specifications, the Chief Engineer must notifythe supplier to stop loading until the fault has been corrected and to dispose of all defectivematerial without cost to the Owner.

3.2 TESTING

A. Determinations of deleterious substances resistance to abrasion and soundness shall bemade at a testing laboratory approved by the Chief Engineer. These tests will be conducted when adding a new supplier, renewing contract, opening a new quarry or strata, and at least annually. It is the supplier's responsibility to furnish copies of the annual test results and AAR M-1003, ISO 9001, or DOT certification to Chief Engineer.

B. Visual inspections and gradation test shall be made at the place of production prior to shipment as often as considered necessary. (Minimum of 1 sample per 1000 tons of ballast produced but may be reduced if material consistently meets specification.) Gradation test results will be transmitted by e-mail to Owner's Chief Engineer for validation. The reports shall be forwarded in a consolidated monthly summary of testsin an electronic format such as Excel. The supplier shall retain the details of gradation for a minimum of one year after the test is performed.

C. Railroad retains the right to conduct on-site inspection for compliance to this specification. Deviation from these requirements will require the supplier to utilize anOwner prescribed five step corrective action process designed to identify and permanently eliminate the root cause(s) of the problem.

- Define the problem.
- Fix the problem.
- Identify the root cause of the problem.
- Implement corrective action to eliminate the root cause.
- Establish a follow-up plan to assess effectiveness and permanence.

Ineffective corrective action plans can result in the supplier being removed from the Owner approved supplier list.

D. Samples of the finished product for all tests shall be representative and of sufficient weight for testing.

3.3 QUALITY ASSURANCE REQUIREMENTS

A. Deleterious substances shall not be present in prepared ballast in excess of the following amounts:

1. Material finer than No. 200 sieve (Track ballast only) = 1%Clay lumps and Soft or Friable pieces = 0.5%

2. (If clay lumps and soft or friable pieces exceeds 0.5%, the supplier must test and certify that clay lumps do not exceed 0.5% and soft or friable pieces do not exceed2%. Action plan must be submitted to reduce this material.)

B. The percentage of wear of prepared ballast tested in the Los Angeles Machine shall not be greater than:

Granite = 32%

Dolomite = 28%

Except as otherwise specified by Owner.

C. Granite ballast is predominately considered the Owner Standard. Any deviation mustbe approved by the Owner's Chief Engineer. The following guidelines should be followed in determining the type of ballast application for each territorial location:

1. Granite ballast should be used on lines having tonnage in excess of 10 MGT annually.

2. Dolomite Limestone will not be used on Owner owned tracks without adeviation approved by the Owner's Chief Engineer. Dolomite Limestone ballast with maximum 28% loss (L.A. abrasion) can be used on lines having less than 10 MGT annually.

3. Dolomite = $MgCo^3$ More Than 36% - Approved Dolomite Limestone = $MgCo^3$ 28-36% - Approved Limestone = $MgCo^3$Less Than 28% - Not Approved Slag Ballast - Not Approved

D. It is the Chief Engineer's responsibility to evaluate annual tonnage application when ordering weekly ballast requirements (based on the above guidelines). The Owner's Chief Engineer's office will determine the best solution to be administered.

E. The soundness of prepared ballast for use in regions where freezing temperatures are expected shall be such that when tested:

1. In the sodium sulfate soundness test, the weighted average loss shall not be in excess of 7% after 5 cycles; or

2. In the magnesium sulfate soundness test, the weighted average loss shall not bein excess of 11% after 5 cycles.

3.4 GRADING REQUIREMENTS

A. The grading of prepared track ballast shall be determined by test with laboratory sieves having square openings and conforming to current ASTM Specifications, Designation E- 11.

3.5 PREPARED RAILROAD TRACK BALLAST AND SUB-BALLAST FOR OWNERSHALL CONFORM TO THE FOLLOWING GRADING REQUIREMENTS

SCREEN SIZE	MAIN LINE AREMA #4A	YARD AREMA #5
2-1/2"	100%	
2"	90 - 100%	
1-1/2"	60 - 90%	100%
1"	10 - 30%	90 - 100%
3/4"	0 - 10%	40 - 75%
1/2"		15 - 35%
3/8"	0 - 2%	0 - 15%
NO. 4		0 - 5%
NO. 8		
NO. 10		
NO. 60		
NO. 200		

3.6 METHODS OF TEST

A. The supplier shall certify the ballast delivered to the Owner is typical of that upon which specified tests have been made.

B. Samples shall be secured in accordance with the current ASTM methods of sampling. Designation D-75.

C. Sieve analysis shall be made in accordance with current ASTM method of test. Designation C-136.

D. Material finer than the No. 200 sieve shall be determined in accordance with the current ASTM of test. Designation C-117.

E. The percentage of clay lumps and soft particles shall be determined in accordance with the current ASTM method of test. Designation C-142.

F. The resistance to abrasion shall be determined in accordance with the current ASTM method of test. Designation C-131, or C-535, using the standard grading most nearly representative of the size of ballast specified.

G. Soundness test shall be made in accordance with the current ASTM method of test. Designation C-88.

H. The weight per cubic foot shall be determined in accordance with the current ASTM method of test. Designation C-29.

3.7 SUBMITTALS

A. Submittals will be reviewed for general conformance with the intent of the Contract Documents. This review will not relieve the Contractor of final responsibility for the means, methods, procedures, and sequences to be utilized.

B. Submit name and location of proposed ballast supplier.

C. Submit name and qualifications of testing laboratory.

SECTION 341126 - WELDING OF RAIL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Contractor shall be responsible for all aspects of the rail de-stressing process, including, but not limited to: thermal expansion calculations, rail cutting and removal, marking and recording quarter points and rail temperatures, thermal expansion of rail, furnishing and installing temporary 6-hole joint bars, furnishing, furnishing and installing thermite welding of all joints, testing and documentation related to thermite welding and CWR heat records for installation/de-stressing documentation of CWR.

B. Related Requirements:

1. Appendix A – MWI 801-09 Welding Manual

2. Appendix B – Continuous Welded Rail

1.3 GENERAL

A. The work specified in this section shall include the fabrication of continuous welded rail (CWR) strings and all other welding of running rail, including testing, inspection, transportation of rail andCWR, and qualification of welding and welders. Rail welds shall be of two types:

1. Electric Flash-butt Welds: Tee rail for tracks outside the limits of special trackwork shall be welded into continuous strings using the electric flash-butt welding process.

2. Thermite Welds: Thermite welds shall be used only where it is impractical to perform Electric Flash-butt Welds, usually in the following locations: joining continuous welded rail strings; joining rails of different rail sections (compromise welds).

B. Electric Flash-butt welding may be performed using either a fixed electric flash-butt welding plant or a mobile welding machine designed for rail welding.

C. Electric flash-butt welds may be substituted for thermite welds, where applicable.

1.4 REFERENCE STANDARDS

A. CSX Maintenance of Way Regulation and Instruction Maintenance of Way, Welding Manual MWI801-09

B. American Railway Engineering and Maintenance of Way Association (AREMA) Manual for Railway Engineering, Vol. 1A, Chapter 4, Part 3:

1. Section 3.10 - Specification for the Quality Assurance of Electric-Flash Butt Welding of Rail

2. Section 3.11 - Specification for Fabrication of Continuous Welded Rail

3. Section 3.12 – Inspection and Classification of Secondhand Rail for Welding

4. Section 3.13 - Specification for the Quality Assurance of Thermite Welding of Rail

C. American Society for Testing and Materials (ASTM International):

1. ASTM E164 – Standard Practice for Contact Ultrasonic Testing of Weldments

2. ASTM E1032 - Standard Test Method for Radiographic Examination of Weldments

3. ASTM E709 - Standard Guide for Magnetic Particle Testing

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

E. American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A Personnel Qualification and Certification in Nondestructive Testing

1.5 SUBMITTALS

A. General:

1. Ultrasonic inspection procedure, equipment description and calibration methods and procedure for dry powder magnetic particle inspection.

2. Magnetic particle and ultrasonic inspection records for each weld.

3. Inspection records of each weld for straightness as per AREMA requirements.

4. Daily calibration of ultrasonic inspection equipment.

5. Certification of ultrasonic and magnetic particle test personnel.

6. Testing Laboratory: Employ an independent testing laboratory which shall perform all indicated weld testing.

7. Quality Control procedures to be followed.

B. Electric Flash-butt Welds:

1. A list of all equipment and calibration methods, method of rail end alignment, method of rail straightening, and a schedule of lengths of rail strings to be fabricated. The schedule of lengthsof rail strings shall include the location of any insulated joints within the string.

2. Welding Machines Performance: Submit Electric Flash-butt welding machine performance standards as provided by the manufacturer. During welding production, a recorder shall be attached to each welding machine to record platen movement and current impulses on the form"Record of Field Welds", a copy of which is attached to the end of this Specification. A recordof machine performance for each weld shall be submitted to the Design Engineer. If the record indicates performance which is not in conformance with the approved standards, the weld willbe considered defective and shall be rejected.

3. Details of the equipment and procedure proposed for straightening welds if required.

C. Thermite Welds:

1. The method and procedure specified shall comply with that of the weld kit manufacturer and shall include the name of the manufacturer and details of the operations. The manufacturers recommended procedure for welding high strength rail if different from requirements for standard rail.

2. Submit detailed procedure specification of the step-by-step methods to be employed in making the welds for review and approval by Engineer. Include complete description of each of the following items:

   a. Manufacturer's trade name for the welding process.

   b. Method used for cutting and cleaning the rail ends.

   c. Minimum and maximum allowable = rail gap between ends prior to welding.

   d. Methods used for cleaning multiple-use crucibles and removing moisture, and the procedures for tracking the number of welds made. Cleaning methods and moisture removal procedures for single-use crucibles are not required.

   e. Method used for pre-heating, including time and temperature.

   f. Method used for removing the upset metal and finishing the weld to the final contour, including am description of special tools and equipment.

   g. Quality control procedures.

3. Submit welder qualifications and certification from weld-kit manufacturer for Engineer's approval.

4. Record of Thermite Welds: Maintain a complete and current record of all thermite welds and their locations.

PART 2 – PRODUCTS

2.1 RAIL FOR CONTINUOUS WELDED RAIL

A. Rail for the Work shall be furnished in accordance with the CSX Maintenance of Way Regulation and Instruction Maintenance of Way, Welding Manual MWI 1101-05 CSX Maintenance of Way Regulation and Instruction Maintenance of Way, Welding Manual MWI 801-09

2.2 THERMITE WELDING MATERIALS

A. Thermite type rail welds shall be formed utilizing one of the following brands of rail welding kits oran approved equal.

1. Thermit - as manufactured by Orgo-Thermit, Inc., Manchester, New Jersey.

2. Boutet - as manufactured by Railtech Boutet, Inc., Napoleon, Ohio.

B. The rail welding kits used when welding fully heat treated (or head hardened) rail shall conform to the process manufacturer's recommended standard for such work.

PART 3 - EXECUTION

3.1 QUALITY CONTROL

A. Rail Straightness: Check rail for end straightness before welding. Examine both ends and tops of allrails using a 3 foot metal straightedge. Deviations from straight shall be measured with a metal tapergauge. Rails which are at or exceed the tolerances in AREMA Chapter 4, Part 2, Specifications forSteel Rails, Sections 2.1.13.1.c through 2.1.13.1.e shall not be welded.

B. Qualification of Testing Technician: Testing shall be performed by a technician certified to have met ASNT procedure SNT-TC-1A, Level II or III qualifications.

C. Field Testing: Production flash-butt and/or thermite welds shall be visually, magnetic particle and ultrasonically tested in the field for defects in accordance with paragraphs D and E below. Visual testing will be in accordance with AREMA standards. Any rail weld showing surface cracks will be rejected.

D. Magnetic particle testing shall be performed in accordance with ASTM E709. Testing shall be conducted with the rail temperature below 800oF. Acceptance Criteria: Particles shall form a regular longitudinal pattern indicating homogeneity of the weld and freedom and defects, surface irregularities and internal discontinuities.

E. Ultrasonic Testing:

1. Ultrasonic inspection of welds shall be performed in accordance with ASTM E164. Prior to testing of welds, the technician certified in accordance with ASNT procedure SNT-TC-1A, Level II or III shall be tested to ensure his ability to detect defects in rail. The test shall be conducted with the calibration rail as specified below serving as the test specimen. The technician shall locate all the holes in the calibration rail by ultrasonic testing. This test will beobserved by an independent technician, certified in accordance with ASNT procedure SNT-TC-1A, Level II or III and experience in ultrasonic examination of rail welds. Failure to pass this test will result in the disqualification of the technician.

2. The following equipment shall be used for ultrasonic testing:

   a. Ultrasonic, pulsed echo, instrument normally used for inspection of rails with calibrated decibel gain control of minimum 2db increments, operating in the range 1-5 MHz, with CRT screen and scale. Equipment shall be capable of detecting a 3/64-inch discontinuity 6-1/2 inches below top of rail.

   b. Calibrated paper tape recording attachments to record accurately the CRT screen indications when a non-complying weld is located.

   c. 2.25 MHz angle beam transducers 1/2" x 1" at 70 degrees and 45 degrees.

   d. Suitable high viscosity couplets of good wetting characteristics.

   e. Standard IIW calibration blocks of rail steel for primary reference response and to construct distance-amplitude correction curve, and DSC Blocks of rail steel for calibration checks.

f. A "calibration rail", a piece 136RE rail, 18 inches long with a 3/64-inch diameter round bottom hole 6-1/2 inches below top of rail and in which other 1/8-inch diameter flat bottomhole patterns have been drilled.

3. Incorporate the following in the test procedure:

a. Scanning level shall be +20 dB minimum.

b. Scan the rail in a zigzag pattern twisting probe, on one side of the weld only at a rate not exceeding 6 inches per second, so that the full weld is scanned. Each pass will overlap a minimum 10 percent and the scanning is carried out longitudinally to the rail.

c. Calibrate the equipment at the start and end of each day's work, and at least every four hours during examination, and hourly checks with DSC blocks. If any point on the distance-amplitude curve has been changed by more than 20 percent, all results since last calibrationcheck shall be void and all welds re-examined. If the curve has moved on the sweep line bymore than five percent, all non-complying welds since last calibration check shall be re- examined.

d. When a reflection of greater amplitude than the acceptance criteria is found, scan around thefull perimeter of the weld from both sides, to ensure full weld coverage and determination of size, type, and location of discontinuity.

e. Make permanent trace recording of discontinuity indications.

f. Paint the rail web at non-conforming welds on both sides across the weld.

4. All welds shall be free from defect or flaw giving a reflected display of greater than 20% of distance-amplitude correction curve at calibration level or will be as listed in Table 1.

B. TABLE 1

C. MINIMUM ACCEPTANCE LEVELS (DECIBELS)

D. WELD THICKNESS (in.) AND TRANSDUCER ANGLE

REFLECTOR	**5/16 TO 3/4**	**3/4 TO 1-1/2**	**1-1/2 TO 2-1/2**		**2-1/2 TO 4**		**4 TO 6**	
SEVERITY	**70°**	**70°**	**70°**	**45°**	**70°**	**45°**	**70°**	**45°**
Large Reflectors	+8	+3	-1	+4	-4	+1	-7	-2
Small Reflectors	+9	+4	+1	+6	-2	+3	-5	0
Minor Reflectors	+10	+5	+3	+8	0	+5	-3	+2

1. Use an ultrasonic test report form that records 20 inspected welds per sheet. The form shall include the location of the weld in track, the results of the ultrasonic inspection including size of defects found in the head, web or base of rail, shape identity and location of all reflections, trace record, the results of the visual inspection, name of inspector, and other information as needed. Welds found defective by ultrasonic, magnetic particle, or visual inspection shall be replaced at no expense to Owner/Railroad.

3.2 PREPARATORY WORK FOR ALL WELDS

A. Rail, which must be cut for any reason shall be cut square and clean by means of rail saws or abrasive, cutting wheels in accordance with AREMA Chapter 4, Part 2, Specifications for Steel Rails. Torch cutting of rails is prohibited. Rail ends not within 1/32 inch of square shall be cut square.

B. Rails shall conform to the AREMA Chapter 4, Part 2, Specifications for Steel Rails, for straightness. Rail ends shall show no steel defects, dents, or porosity before welding.

C. Clean rails to be welded of grease, oil, dirt, loose scale, and moisture to a minimum of six (6) inchesback from the rail ends, including the railhead surface. Use a wire brush to completely remove dirtand loose oxide, and use oxygen-acetylene torch to remove grease, oil, and moisture.

D. Rails shall be straightened cold in a hydraulic press or roller machine to remove twists, waves, andkinks until they meet the surface and line requirements specified herein before. The method of permanent straightening shall be submitted to Engineer for approval.

E. Rail that cannot be straightened permanently shall be cut back a sufficient distance to achieve the required alignment. Burrs shall be removed. The method of end finishing rails shall be such that therail end shall not be metallurgically or mechanically damaged.

F. Align the rail ends using a rail beam specifically designed for this purpose or a 36-inch straight edge.

G. Use a power grinder with an abrasive wheel to remove scale, rust, burrs, lipped metal, and mill brands which would interfere with the fit of the mold for two (2) inches on each side of the ends. Rail ends shall show no steel defects, dents, or porosity before welding.

3.3 FABRICATION OF CONTINUOUS WELDED RAIL (CWR) STRINGS

A. Welded rail strings shall be of the longest lengths practical to fabricate and handle. String length shall not be less than 700 feet except as required by the joint location, etc.

B. The schedule shall indicate which strings or which portions of strings will be high strength rail. The schedule shall indicate which strings or portions of strings will be "A" rails, if applicable.

C. The schedule shall indicate the locations of the proposed field cuts, if any. The rail schedule shall minimize thermite welds between standard rails and high strength rails.

D. No rail string containing "A" rails shall be fabricated until all rail has been received. All "A" rails shall be used in one string and shall be used in tangent sections of track.

3.4 ELECTRIC FLASH-BUTT WELDING

A. Electric Flash-butt welding shall be in accordance with the AREMA Chapter 4, Part 3, Specificationfor the Quality Assurance of Electric-Flash Butt Welding of Rail and Specification for Fabrication of Continuous Welded Rail except as modified hereinafter.

B. Mismatched or jagged rail ends shall be either sawed or cut with an abrasive rail cutter. Mating railends by flashing shall not be accepted.

C. Rails shall have the scale removed down to bright metal in areas where the welding current-carrying electrodes contact the rail. Grind down raised rail brands in electrode areas. The weld and adjacentrail for a distance clearing the electrodes shall be rejected if in the areas of electrode contact there isnot more

than 95 percent of the mill scale removed. Electrode contact areas shall be examined forevidence of electrode burn. Where metal is displaced or where the oxidized areas exhibit checks orsmall cracks the weld shall be rejected, and the rail cut back clear of the electrode burn.

D. Welds shall be forged to point of refusal to further plastic deformation and shall have a minimum upset of 1/2-inch, with 5/8 inch as standard.

E. If flashing on Electric Flash-butt welds is interrupted, because of malfunction or external reason, with less than 1/2-inch of flashing distance remaining before upsetting, rails shall be reclamped in the machine and flashing initiated again.

F. Whenever possible, grinding shall be accomplished immediately following welding at an elevated temperature. When grinding must be done at ambient temperature, care shall be taken to avoid grinding burns and metallurgical damage.

G. Alignment of rail in the welding machine shall be at the head of the rail.

1. Vertical alignment shall provide for a flat running surface. Any difference of height of the railshall be in the base.

2. Horizontal alignment shall be accomplished in such a manner that any difference in the width ofheads of rails shall be divided equally on both sides of the head. Where the difference, when divided, exceeds 0.040 inches, 0.020 inches of the difference shall be placed on the gauge sideand the remaining differences in the width of heads shall be on the field side.

3. In any case horizontal offsets shall not exceed 0.040 inch at the head and/or 0.125 inch at the base.

H. Surface and Gauge Misalignment Tolerances: Shall meet the alignment tolerances given in the AREMA Manual, Chapter 4, Part 3, Specification for Fabrication of Continuous Welded Rail.

I. If, at any time, 7 or more of a series of 12 consecutive welds made on one machine exceed 75 percent of the stated surface misalignment tolerances that machine shall be shut down and adjustedbefore work continues.

J. Re-welds shall be cut out beyond the heat affected zone of the previous weld.

K. Weld Finishing:

1. A finishing deviation of the parent section of the rail head surface shall not exceed plus 0.010inch of the lowest rail.

2. The sides of the rail head weld shall be finished to plus or minus 0.010 inch of the parent section. The top and bottom of the rail base shall be finished to within 0.010 inch of the lowestrail.

3. The web zone including the underside of the head, the web, and both fillets on each side, shallbe finished to within plus 0.090 inch to plus 0.010 inch of the parent section. Finishing grindingshall eliminate all cracks.

4. Notches created by minor offset conditions, twisted or misshapen rails shall be eliminated by minimal grinding to blend the variations.

5. Fins on the weld due to grinding or shear drag shall be removed prior to final inspection.

L. One handling hole may be made in each end of a CWR string. Rail ends containing such holes shallbe cut off during track construction as indicated.

3.5 PRODUCTION, INSPECTION, AND TESTING OF ELECTRIC FLASH-BUTT WELDS

A. A chart recorder shall be used to monitor all significant welding parameters. The recorder shall identify each weld in each string. In addition, the rail schedule designation for each string shall beincluded on the recording with a notation to indicate the beginning and ending of each CWR string.Each recorder employed shall be calibrated daily. Recordings shall become the property of owner atthe time the welded rail is released for installation.

B. Inspect all electric flash butt welds by the dry powder magnetic particle method in accordance with ASTM E 709. Subsequently, inspect all electric flash butt welds ultrasonically in accordance withthese specifications.

C. Inspect all electric flash-butt welds in accordance with the AREMA Specifications.

D. Defective electric flash-butt welds shall be repaired immediately during production. Other defectiveweld findings shall be repaired as specified in the Repair of Defective Welds Section of this Specification.

E. Hardness - The hardness of the weld measured on the head of the rail in the center of the weld shallbe equal to the Brinell hardness of the parent metal with a tolerance of plus or minus 20 Brinell hardness numbers. Brinell hardness testing shall be conducted only on test welds by an approved Testing Technician.

F. Weld testing shall be carried out by an independent testing laboratory. The testing service and their testing program and procedures are subject to approval as specified herein.

G. The testing service shall certify whether or not each weld meets the quality acceptance criteria detailed and shall submit reports. At the time of testing the testing service shall mark their findingsas to acceptability or rejection on the weld itself.

H. Identifying Electric Flash-butt Welds and Rail Strings: At the completion of welding each string of CWR, a record shall be submitted documenting production of the string. Included shall be the heat numbers of the first and last pieces of rail in the string, the number of welds in the string, the heat numbers of rail on each side of welds which have been cut out and re-welded, a record of machine performance for each weld, and reports for all magnaflux and ultrasonic testing. Reports shall be bound in pad or notebook form for ease of handling and retention as permanent record.

3.6 THERMITE WELDING

A. CWR rail sections in track shall be joined in the field by thermite welding. Electric flash-butt weldsmay be substituted for thermite welds.

B. Except at Special Trackwork locations, thermite welds shall not be located within the following location:

1. Within 15 feet of a field weld in the same rail.

2. Within 15 feet from the center of any bolted or bonded (glued) joint.

3. Within 10 feet of a transition from embedded or direct fixation track to ballasted track.

4. Within 5 feet of an electric flash-butt weld.

C. Bolt holes and handling holes shall not be permitted to remain in the ends of the rail to be welded.Rail ends containing such holes shall be cut off during track construction.

D. Preparation of Rail Ends: Rail ends shall be either saw-cut or ground at right angles to the rail to provide a smooth and clean surface. The surface of the rails for a length of approximately 6 inchesfrom the end of the rails shall be cleaned by grinding to remove all grease, dirt, loose oxide, oxidized metal, scale, and moisture. All burrs and lipped metal which would interfere with the fit of the moldshall be removed.

E. Weld Gap: At the time of thermite welding, the rails shall have the rail gap recommended by the manufacturer of the weld kit and shall be aligned to produce a weld which, with respect to alignment, shall comply with the AREMA Specifications. Would the rail gap be larger than the manufacturer's recommended gap after the rails have been adjusted for zero thermal stress, then sufficient rail shall be removed from one or both rails to permit insertion of a rail not less than 19 feet long which shall provide the recommended gaps at each end for field welding. At a location where the rail gap is smaller than the manufacturer's recommended gap, the recommended gap shallbe obtained by sawing a piece from one rail.

F. Thermite Weld Pre-heating - The rail ends shall be pre-heated prior to welding to a sufficient temperature and for sufficient time as indicated in the approved welding procedure to ensure full fusion of the weld metal to the rail ends without cracking of the rail or weld.

G. Thermite Weld Post-heating - The molds shall be left in place after tapping for sufficient time to permit complete solidification of the molten metal and proper cooling to prevent cracking and provide a complete weld with proper hardness and ductility.

H. Weld Finish: Rail shears shall be used to trim upset weld metal from the rail after removal of the mold. Trimming and grinding of the weld shall result in the weld being within the following tolerances:

1. The top, field and gauge side of the rail head shall be finished to within plus or minus 0.010 inchof the parent section.

2. Notches created by offset conditions shall be eliminated by grinding to blend variations. Protrusions and gouges in the welded area shall be removed, and the weld area shall be blendedinto the rail contour by grinding in a manner which will eliminate fatigue crack origins. Defectsvisible to the unaided eye shall be removed by grinding, except that if removal by grinding cannot be accomplished without damaging the rail, the weld shall be removed. Grinding pressure which would overheat the rail surface shall not be permitted.

3. Heavy grinding of the weld shall be completed while the weld is still hot from welding.

I. Inspect one out of every 10 thermite welds in standard track and two thermite welds in each item of special trackwork ultrasonically in accordance with AREMA Specification and CSX Maintenance of Way Regulation and Instruction Maintenance of Way, Welding Manual.

J. Defective thermite welds, as specified in section Defective Thermite Welds of this specification, shall be repaired as specified in section, Repair of Defective Welds of this specification.

K. Inspect all thermite welds utilizing magnetic particle testing procedures, testing only the head of the rail and in accordance with the Quality Control Section of this Specification; applicable AREMA specification sections; and CSX Maintenance of Way Regulation and Instruction Maintenance of Way, Welding Manual.

3.7 DEFECTIVE THERMITE WELDS

A. Defective thermite welds shall be determined as follows:

1. Weld quality, finishing alignment not in accordance with the above mentioned standards.

2. Welds showing a response at any level that is identified as a crack or lack of fusion shall not be acceptable.

3. Welds showing a response that is less than 50 percent of the primary reference level shall be acceptable.

4. Welds showing a response greater than 50 percent but that do not exceed the primary referencelevel are acceptable, provided that all of the following apply:

a. The defects are evaluated as slag or porosity.

b. The largest defect does not exceed 0.180 inch in its largest dimension.

c. The total area of the defects does not exceed 0.009 square inch.

d. The sum of the greatest dimension of defects in a line does not exceed 3/8-inch.

5. Welds showing a response that exceeds the primary reference level shall not be acceptable.

3.8 REPAIR OF DEFECTIVE WELDS

A. Electric Flash-butt welds rejected during final track inspection or testing by Rail Defect Car shall becut out and rewelded if possible or replaced with at least a 19-foot rail welded in its place by two thermite welds in accordance with this specification.

B. Thermite welds rejected during inspection or testing shall be cut out and rewelded if possible or replaced with at least a 19-foot rail welded in its place by two thermite welds in accordance with this specification.

C. Special Thermite Welds

D. Should a defective thermite weld replacement using an inserted piece of rail and two welds not be practical because of limitations due to adjacent special trackwork parts, Contractor shall cut out the defective weld and replace it with a special wide thermite weld. Prior to use in track this special weld shall be tested and accepted in accordance with applicable AREMA specification sections andCSX Maintenance of Way Regulation and Instruction Maintenance of Way, Welding Manual MWI801-09.

SECTION 341127 - EROSION AND SEDIMENTATION CONTROL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Prior to the start of work, Contractor shall furnish and install all erosion and sedimentation control devices in accordance with the Contract Plans, Scope of Work, Technical Specifications, Special Conditions, and all Local, Federal, and State DEP Regulations per the Environmental Permit requirements.

1.3 GENERAL

A. The Contractor shall install erosion control measures as required and/or determined necessary by the Engineer in order to protect Environmental Resources due to the Contractors staging areasand means of accessing the project location, in addition to protecting the Environmental Resources due to the Contractors means and methods of completing the work.

B. This Section specifies installing straw bales or compost filter tubes and silt fences for the control of erosion and sedimentation on site.

C. Straw bale siltation barrier shall consist of straw bales/silt fence or compost filter tubes as detailed in the Contract Documents.

D. This Section specifies installing turbidity curtain (staked floating siltation barrier) for the control of erosion and sedimentation on site. The type of turbidity curtain shall be determined by the manufacturer for the body of water the work is being performed in.

PART 2 - PRODUCTS

2.1 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. The silt fence fabric shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement.

B. Each roll of fabric or erosion control mat shall be labeled or tagged to provide product identification sufficient for field identification, as well as inventory and quality control purposes.

C. Each roll of fabric shall be stored in a manner that will protect them from the elements. If stored outdoors, they shall be elevated and protected with a waterproof cover.

D. Straw bales or compost filter tubes shall be stored in a manner that will protect them from the elements. If stored outdoors, they shall be elevated and protected with a waterproof cover.

E. Turbidity curtains shall be labeled or tagged to provide product identification sufficient for field identification.

2.2 MATERIALS AND EQUIPMENT

A. Straw bales or compost filter tubes shall be individually banded and staked into the ground.

1. Straw bales or compost filter tubes shall consist of straw for outdoor use banded with wire or nylon cord (minimum two bands per bale or equal per compost filter tube) and shall be stakedfor securing into the ground as shown on the Drawings.

2. Stakes for straw bales shall be standard steel pickets, 2 inch by 2 inch wood stakes, or approved equal.

3. The compost filter tubes shall be a minimum of twelve (12) inch compost filled tube of flexible netting material. It shall be a machine-produced tube containing a long term, wood fiber mulch compost that is certified weed free, by a manufacturer. The netting shall consist of seamless, high density polyethylene and ethyl vinyl acetate and contain ultra-violet inhibitors. The compost shall conform to AASHTO Standard MP 9-06 – Compost for Erosion/Sediment Control. Wood chips, bark chips and reprocessed wood products will not be acceptable.

4. Stakes shall be applied to the compost filter tubes per the manufacturer's specifications.

B. Silt fence shall consist of a self or wire supported geotextile silt fence with support posts

1. Fibers used in the manufacture of geotextiles, and the threads used in joining geotextiles by sewing, shall consist of long chain synthetic polymers composed of at least 85% by weight polyolefins, or polyesters.

2. Both the geotextile and threads shall be resistant to chemical attack, mildew, and rot.

3. Geotextiles shall conform to the following physical requirements in accordance with the acceptance criteria required by ASTM D4759. Values shown are minimum average roll values. Strength values are in the weaker principal direction.

   a. Tensile Grab Strength: ASTM D4632; 90 pounds minimum.

   b. Elongation at 50% Minimum Tensile Strength: ASTM D4632; 50% maximum for self-supported fences.

   c. Permittivity: ASTM D4491; 0.0 10 per second minimum.

   d. Apparent Opening Size (AOS): ASTM D4751; 0.84 millimeters maximum.

   e. Ultraviolet Degradation: ASTM D4759; at 500 hours exposure, 70% strength retained forall cases.

4. Posts for Silt Fence: Wood, steel, or synthetic posts may be used. Posts shall have a minimumlength of 30" plus burial depth, be of sufficient strength to resist damage during installation, and support applied loads.

5. Wire Support: 12-gauge wire supports at 6-inch maximum spacing each way shall be used when geotextile fabric is not strong enough to support applied loads as specified. Provide hogring supports as detailed.

6. Prefabricated fence systems may be used provided they meet all of the above materialrequirements.

C. Turbidity Curtain:

1. Barriers should be a bright color (yellow or “international” orange are recommended) thatwill attract the attention of nearby boaters.

2. The turbidity curtain fabric shall conform to the following minimum physical property requirements:

   a. Thickness: 45 mils minimum

   b. Weight

      1) Type I: 18 Oz./SY minimum

      2) Type II: 18 or 22 Oz./SY

      3) Type III: 22 Oz./SY minimum

   c. Grab Tensile Strength: 300 lbs. minimum

   d. Ultraviolet Inhibitor: must be included

3. Seams in the fabric shall be either vulcanized welded or sewn and shall develop the full strength of the fabric.

4. Floatation devices shall be flexible, buoyant units contained in an individual floatation sleeveor collar attached to the curtain. Buoyancy provided by the floatation units shall be sufficient to support the weight of the curtain and maintain a freeboard of at least 3 inches above thewater surface level.

5. Load lines must be fabricated into the bottom of all floating turbidity curtains. Type II and Type III must have load lines also fabricated into the top of the fabric. The top load line shall consist of woven webbing or vinyl-sheathed steel cable and shall have minimum breaking strength of 9,800 pounds. The supplemental (bottom) load line shall consist of a chain incorporated into the bottom hem of the curtain of sufficient weight to serve as ballast to holdthe curtain in a vertical position. Additional anchorage shall be provided as necessary. The load lines shall have suitable connecting devices to maintain full breaking strength in connecting to load lines in adjacent sections.

6. External anchors may consist of wooden or metal stakes (2 inch x 4 inch or 2 1/2 – inch minimum diameter wood or 1.33 pounds/linear foot steel) when Type I Installation is used; when Type II or Type III installation are used, bottom anchors should be used.

7. Bottom anchors must be sufficient to hold the curtain in the same position relative to the bottom of the watercourse without interfering with the action of the curtain. The anchor may dig into the bottom (grappling hook, plow, or fluke-type) or may be weighted (mushroom type) and should be attached to a floating anchor buoy via an anchor line. The anchor line will then run from the buoy to the top load line of the curtain. When used with Type III installation, these lines must contain enough slack to allow the buoy and curtain to floatfreely with tidal changes without pulling the buoy or curtain down and must be checked regularly to make sure they do not become entangled

with debris. As previously noted, anchor spacing will vary with current velocity and potential wind and wave action. Manufacture's recommendations should be followed. Follow the manufactures orientation ofthe external anchors and anchor buoys for tidal installation.

D. Silt sack catch basin inlet protection shall fit freely suspended inside the catch basin.

1. Silt sacks shall be made of woven polypropylene filter fabric with polypropylene boot at the top on which the grate sits to hold the silt sack in place.

2. A manufactured overflow opening shall be provided below the boot, just under the grate.

3. The silt sack filter shall have the following properties:

a. Constructed of woven polypropylene fabric

b. Maximum overflow rate of 200 GPM/SF.

c. Maximum permeability of 1.5 sec $^{-1}$

d. Minimum UV resistance @ 500 hrs. of 90%

e. Minimum tensile grab strength at 165 lbs. (ASTM 4632)

PART 3 - EXECUTION

3.1 TEMPORARY EROSION CONTROL

A. Method of stripping vegetation shall be such as to minimize erosion. Fills shall be placed and compacted in such a manner that soil sliding and erosion is minimized. Grading shall be done in such a manner as not to divert water on to the property adjoining the construction site without expressed written permission of the landowner and the local Conservation Commission. IfContractor fails to employ adequate and acceptable erosion control techniques duringconstruction, Engineer may order a suspension of the work until implementation of satisfactory techniques are agreed upon and demonstrated, and Contractor shall have no claim for damages or time extension resulting from such delays.

B. Staked straw bales/silt fences and/or compost filter tubes shall be installed at the following locations:

1. Toe of embankment construction.

2. Toe of abutments and retaining walls.

3. Across construction ditches prior to entry into any drainage system or waterway.

4. Toe of temporary earthwork stockpiles.

5. Other locations shown on the Contract Drawings or designated by Engineer.

C. Abut straw bales or overlap compost filter tubes to form a continuous barrier. Silt Fence shall be entrenched 4" minimum as shown in the Drawings. Secure straw bales or compost filter tubes in place with two stakes per bale.

D. Silt fence construction shall be adequate to handle the stress from sediment loading. Geotextile at the bottom of the fence shall be buried a minimum of six (6) inches deep in a trench as shown on the drawings so that no flow can pass under the barrier. Trench shall be backfilled, and the soil compacted over the geotextile. Fence height shall be as shown on the drawings, but in no case shall exceed thirty (30) inches above ground surface. Geotextile shall be spliced together only at asupport post with a minimum six (6) inch overlap. Posts shall be spaced as indicated on the Contract Drawings. Where a twelve (12) inch depth is not possible, the post shall be adequately secured to prevent overturning of the fence due to sediment or wind loading.

E. Sediment controls shall be in place prior to any soil disturbing activities including, but not limitedto clearing and grubbing, earthwork, dewatering, and excavation.

F. Any disturbed soils shall be stabilized, either permanently or temporarily, within two (2) weeks of disturbance.

G. Staked straw bales or compost filter tubes shall be placed at the toe of ballast in all excavation areas adjacent to existing track. Straw bales or compost filter tubes in these areas shall beinspected daily for any defects and repaired immediately.

H. Turbidity Curtain Installation

1. In the calm water of lakes or ponds (Type I installation) it is usually sufficient to merely set the curtain end stakes or anchor points (using anchor buoys if bottom anchors are employed), then tow the curtain in the furled condition out and attach it to these stakes or anchor points. Following this, any additional stakes or buoyed anchors required to maintain the desired location of the curtain may be set and these anchor points made fast to the curtain. Only then,the furling lines should be cut to the curtain skirt drop.

2. In rivers or in other moving water (Type II or Type III installations) it is important to set all the curtain anchor points. Care must be taken to ensure that anchor points are of sufficient holding power to retain the curtain under the existing current conditions, prior to putting the furled curtain into the water. Again, anchor buoys should be employed on all anchors to prevent the current from submerging the flotation at the anchor points. If the moving water into which the curtain is being installed is tidal and will subject the curtain to currents in both directions as the tide changes, it is important to provide anchors on both sides of the curtain for two reasons:

    a. Curtain movement will be minimized during tidal current reversals.

    b. The curtain will not overrun the anchors and pull them out when the tide reverses.

3. When the anchors are secure, the furled curtain should be secured to the upstream anchor point and then sequentially attached to each next downstream anchor point until the entire curtain is in position. At this point, and before unfurling, the “lay” of the curtain should be assessed and any necessary adjustments made to the anchors. Finally, when the location is ascertained to be as desired, the furling lines should be cut to allow the skirt to drop.

4. Always attach anchor lines to the floatation device, not to the bottom of the curtain. The anchoring line attached to the floatation device on the downstream side will provide support for the curtain. Attaching the anchors to the bottom of the curtain could cause premature failure of the curtain due to the stresses imparted on the middle section of the curtain.

5. There is an exception to the rule that turbidity curtains should not be installed across channel flows; it occurs when there is a danger of creating a silt build-up in the middle of a watercourse, thereby blocking access, or creating a sand bar. Curtains have been usedeffectively in large areas of moving water by forming a very long-sided, sharp "V" to deflect clean water around a work site, confine a large part of the silt-laden water to the work area inside the "V" and direct much of the silt towards the shoreline. Care must be taken, however, not to install the curtain perpendicular to the water current.

6. Contractor shall follow the manufacture's typical installation layout for the type of curtain.

I. Catch basin inlet protection silt sacks shall be placed to protect all catch basins within the work area that will be receiving any construction area runoff drainage.

3.2 MAINTENANCE AND CLEANUP

A. Maintain the integrity of staked straw bale/silt fence barriers and compost filter tubes as long as they are necessary to contain sediment runoff. Promptly repair or replace ineffective strawbale/silt fence barriers and compost filter tubes while the barrier is still necessary.

B. Inspect all temporary straw bale/silt fence barriers and compost filter tubes immediately after each rainfall and at least daily during prolonged rainfall. Any deficiencies shall be immediately corrected. Make a daily review of the location of straw bale/silt fence barriers and compost filter tubes in areas where construction activities have changed the natural contour and drainage runoff to ensure that the straw bale/silt fence barriers and compost filter tubes are properly located for effectiveness. Where deficiencies exist, additional straw bale/silt fence barriers or compost filter tubes and erosion control measures shall be installed as directed by Engineer.

C. Sediment deposits shall either be removed when the deposit reaches approximately one-half ofthe height of the straw bale/silt fence barrier or compost filter tube, or a second straw bale/silt fence barrier or compost filter tube shall be installed as directed by Engineer. Sediment shall be removed and disposed of periodically from behind straw bale/silt fence barriers and compostfilter tubes. In no case shall the accumulated sediment be allowed to rise above the mid height of the straw bale or compost filter tube. All sediment shall be disposed of in an approved manner.

D. Straw bale/silt fence barriers and compost filter tubes shall remain in place until Engineer directs that they be removed. Upon removal, remove and dispose of any excess silt accumulations, dress the area to give a pleasing appearance, and vegetate all bare areas with approved seed mix.

E. Straw bales, compost filter tubes, silt fences, and stakes will remain the property of Contractor, may be re-used at other locations provided the materials meet the requirements, and shall be removed and disposed of upon acceptance of the respective work unless directed otherwise by Engineer.

F. Turbidity curtain maintenance:

1. Contractor shall be responsible for maintenance of the turbidity curtain for the duration of the project in order to ensure the continuous protection of the watercourse.

2. Should repairs to the geotextile fabric become necessary, there are normally repair kits available from the manufacturers; manufacture's instruction must be followed to ensure the adequacy of the repair.

G. Turbidity curtain removal:

3. Care should be taken to protect the skirt from damage as the turbidity curtain is dragged from the water.

4. The site selected to bring the curtain ashore should be free of sharp rocks, broken concrete, debris, etc. so as to minimize damage when hauling the curtain over the area.

5. If the curtain has a deep skirt, it can be further protected by running a small boat along its length with a crew installing furling lines before attempting to remove the curtain from the water.

6. When the curtain is no longer required as determined by the inspector, the curtain and related components shall be removed is such a manner as to minimize turbidity. Remaining sedimentshall be sufficiently settled before removing the curtain. Sediment may be removed, and the original depth (or plan elevation) restored. Any spoils must be taken to upland area and be stabilized.

H. Inspect all silt sack inlet protection immediately after each rainfall and at least daily during a prolonged rainfall.

I. Sediment deposits in the silt sack shall be removed when the deposit reaches one inch (1”) below the overflow opening in the filter. Remove silt sack from catch basins, empty, and rinse out the filter. Reshape the silt sack and re-install into the catch basin.

SECTION 341128 - EXISTING SITE UTILITIES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Prior to the start of work, Contractor shall be responsible for coordinating with the local utility companies for maintenance, protection, and relocation of their facilities as required for the construction. The engineer assumes no responsibility for damages incurred as result of utility omitted or inaccurately shown on the plans. Contractor shall notify DIG-SAFE least 72 business hours before any construction begins.

1.3 DESCRIPTION OF WORK

A. Work Included: This Section specifies the maintenance, support, protection, relocation, reconstruction and adjustment-to-grade, restoration, and abandonment of existing utilities affected by the construction work.

B. For the purpose of this Section, utility means any public or private service, such as electric light and power systems; gas distribution systems; telephone, telegraph, cable television and other communication services; water distribution; storm drain and sanitary sewer services; police and fire communication systems; street lighting and traffic signs and signals; parking meters; and steam distribution systems.

C. Coordination and work between utility companies and Contractor will be required.

D. Coordination between Contractor and JAXPORT Signal Maintenance group shall be required to locate existing signal cables.

1.4 GENERAL

A. The location of existing underground pipes, cables, conduits, and structures as shown on thePlans have been collected from the best available sources. JAXPORT (Owner) together with its agents do not imply nor guarantee the data and information in connection with the underground pipes, cables, conduits, structures, and other parts as to their completeness nor their locations indicated. Contractor shall contact utility owners and request marking location of all their lines in the work areas. Contractor shall assume there are existing water, gas, electric andother utility connections to every building and structure, whether they appear on the Drawings or not. Any expense and/or damage to these shall be the responsibility of Contractor.

B. Foundations and lines for services, police and fire alarm boxes, street and pedestrian lights, and traffic signals may not be shown on the Drawings. The appropriate utility companies and/or agencies shall be contacted and consulted for locations of the above.

C. All utility companies, public and private, shall be notified, including those in control of utilities not shown on the Drawings prior to designing, excavating, blasting, installing, backfilling, grading, or

restoring pavement. Contractor shall premark the area of excavation or work and notify Dig Safe Center (1-888-DIG-SAFE) at least three (3) business days prior to any excavation or work. In addition, notification shall be given toall affected private and/or public utilities to permit street marking of their lines.

D. Some unknown utilities may exist in the areas to be excavated. Contractor shall take thenecessary precautions when excavated in areas of potential utility conflict. Precautions may include, but are not limited to soil vacuum excavation, hand digging, or other non-destructive means. Contractor shall further be prepared to pre-excavate or pre-trench to locate potential utility conflicts prior to performing such activities as, but not limited to jacking, tunneling, installing temporary excavation support, etc.

E. Interruptions of utilities shall not be permitted without written consent of the utility owner. Contractor shall coordinate with all utilities and provide all temporary utilities and connections to avoid interruptions.

1.5 SUBMITTALS

A. Submit working drawings and, if applicable, shop drawings showing the details, procedures, and scheduling for performance of the existing utility work. Show actual location of existing utility facilities; interferences which these facilities present to the new work; location of settlement markers; method proposed to proceed with the construction; details of proposed support systems; and, if applicable, method of testing and procedure for restoration.

B. Submit written evidence of affected utility owners' approval of the details, procedure, and scheduling.

C. Provide written notice two (2) weeks in advance of the intended date to commence operations to affected utility owners and parties having surface, subsurface or overhead structures in theconstruction area. Furnish Engineer copies of all notices.

D. If a settlement or movement monitoring system is required, submit copies of readings to Engineerand affected utility owner within 24 hours of the reading.

E. Submit to Engineer, certifications from the respective suppliers that the products to be incorporated in the work are in conformance with applicable requirements.

1.6 NOTIFICATION

A. Notify the appropriate utility agencies and Engineer at least 48 hours prior to starting any work involving or adjacent to utility service facilities.

B. Where an existing utility facility is encountered that is not indicated or that is determined to be a different utility facility than that indicated, promptly notify the Authority. Contractor is responsible for determining the owner of the facility and the disposition of the facility.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Products and materials shall be as specified in the Technical Specifications or by the utility company.

2.2 SALVAGE MATERIAL

A. Reuse materials designated to be salvaged, provided they are inspected and approved by the respective utility owner and Engineer. Salvaged material not designated for reuse or returned to utility owner shall become the property of Contractor.

B. Maintain and have available for inspection by Engineer a detailed record, including signedvouchers and receipts, of new and salvaged materials received from, used, or returned to the various utility owners.

PART 3 - EXECUTION

3.1 EXECUTION

A. Conform to the specifications and standard practices of the affected utility owners. Coordinate with utility owners, which work shall be done by Contractor and which work shall be done by utility owner at Contractor's expense. Ensure continuity of all existing utility services to all users except when the utility owner determines that temporary interruption is required.

B. Unless otherwise indicated or authorized in writing by Engineer, maintain all utility facilities complete in place.

C. Abandoned Facilities

1. Demolish and remove abandoned utility facilities in conflict with work.

2. Do not undertake demolition or removal of the service until written approval for such workhas been obtained from the utility owner. When abandoned facilities are indicated to be left in place, plug, or cap or bulkhead the ends of conduits and pipes, as indicated. Pipe or conduit greater than 15 inches in diameter shall be completely filled with Controlled Density Fill. Remove abandoned utility manholes, junction boxes, and similar structures to a minimum depth of two (2) feet below finish grade and fill the remaining void with sand or select fill, as specified in the Excavation and BackfillSection of the Technical Specifications, after the plugging, or capping, or bulkheading of conduits and pipes has been completed. Puncture or break the bottom slabs of manholes and similar structures to provide drainage. Backfill and compact excavations resulting from removal of utility facilities, as required.

3. Bulkheads for pipes greater than 15 inches in diameter shall be constructed of solid concrete masonry bricks or solid concrete masonry blocks with full mortar joints. The bulkhead shall be watertight. Recess the bulkhead ½ inch and seal with non-shrink grout.

D. Furnish, install, and maintain all temporary facilities required to provide interim utility service when a utility facility is to be relocated and when a utility facility to be replaced is abandoned prior to replacement.

E. Where an existing utility facility is encountered which is not indicated, or which is determined to be a different utility service than that indicated, promptly notify Engineer who will assist in determining the owner of the facility and the disposition of the facility.

F. If, upon exposure, the condition or location of a facility to be supported complete-in-place is found by Engineer to be unsafe for support or for maintenance of service, replace or reconstruct the facility as required, with prior approval of Engineer and the utility owner.

3.2 SETTLEMENT OR MOVEMENT

A. Provide suitable settlement or movement monitoring systems where indicated or required by the affected utility owner.

B. In case of settlement or other movement which might cause damage, take immediate remedial measures to correct the conditions and damages caused by the settlement.

3.3 RECONSTRUCTION AND ADJUSTMENT-TO-GRADE

A. Relay, reset, or otherwise reconstruct miscellaneous structures and facilities as indicated.

B. Adjust-to-grade manholes and inlets as indicated, by raising or lowering the upper portion thereof.

C. Backfill under utilities supported or exposed using controlled density fill to allow for the proper support and compaction under the utility. Contractor shall coordinate with the utility owner to determine the acceptability of the use of controlled density fill and shall work with the utility owner to develop alternate means to ensure the proper backfill and compaction under the utility.

3.4 AS-BUILT UTILITY LOCATION AND CONDITION SURVEY

A. For each new or relocated utility installed, including those installed or relocated by others in the project area, perform an as-built location survey by coordinates prior to backfilling the excavation.

B. The survey data shall be obtained by Global Positioning Survey (GPS) and certified by a Professional Land Surveyor registered in Florida. A complete digital base plan shall be provided in AutoCAD DWG format Release 2000i or later on a Compact Disk (CD), properly referenced to the coordinate system established in the contract.The following standards shall be applicable:

1. Text: Text shall be drawn using a STYLE of "L100-XX" (where XX refers to the plotted scale) and a font file of "SIMPLEX" as defined in the AutoCAD survey template provided by Engineer. The style shall be defined as a "fixed height" style and have a height of 0.10 times the drawing plotted scale. (i.e. 4.0 for 40 scale plan, 2.0 for 20 scale plan, etc.).

2. Precision and Accuracy:

   a. Horizontal Survey:

      1) Precision: Horizontal control and surveyed points shall maintain a minimum precision of 1:10,000.

      2) Accuracy: No more than 10% of the survey points shall be in error by more than 1/100 inch or 0.25 mm when viewed at the requested scale.

   b. Vertical Survey:

      1) Precision: Vertical Control shall have a maximum error of closure no greater than

      .075 feet or .02 meters.

      2) Accuracy: No more than 10% of elevations when interpolated from a Surface shall be in error of more than 1/2 a contour interval.

3. Surface Data: The data format shall conform to Autodesk AutoCAD Civil 3D Project files.If Contractor uses a different software product to create a surface, then the surface must be represented as a TIN (Triangulated Irregular Network) of 3D lines on a separate, distinctlayer within the AutoCAD drawing file. 3D faces or 2 dimensional lines are NOT acceptable.

SECTION 341129 - PROTECTION OF WORK AND PROPERTY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Contractor shall be responsible for temporarily protecting all existing site features. All damage to existing site features caused by the Contractor shall be repaired by the Contractor at NO additional cost to Client.

1.3 GENERAL

A. Work Included: This Section specifies the general requirements for the temporary protection ofwork and property during the Contract period.

PART 2 – PRODUCTS (not used)

PART 3 - EXECUTION

3.1 TEMPORARY PROTECTION

A. Protect the following:

1. Existing mainline, siding, and yard tracks from damage and impacts.
2. Existing railroad culverts, bridges, and grade crossings.
3. Existing public and private access paths and utility easements and crossings.
4. Existing overhead bridge and the private yard facilities and property.
5. Existing railroad ties, rail, turnouts, OTM, bumping posts and signal equipment.
6. Existing railroad rolling stock and railroad equipment within the work area.
7. Existing platforms, buildings, and maintenance facilities.
8. Existing track drainage ditch, drainage pipes and drainage structures.
9. Existing on site utility structures
10. Existing wetland, stream and river areas and wooded areas adjacent to the track corridor.

B. After work is properly completed, be responsible for protecting work and for repairing, replacing,and cleaning of damaged work, so that all work is complete at the time of acceptance of the work.

C. Remove all temporary protection and coverings at the completion of the Work.

SECTION 341130 - AS-BUILT CONSTRUCTION PLANS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Contractor shall be responsible for preparing As-Built plans of each crossing.

1.3 DESCRIPTION OF WORK

A. This Section specifies the general requirements and procedures for preparing As-Built Construction Plans. As-Built plans are not intended to document final quantities but are intended to show approved revisions to the contract design including, but not limited to revised profiles and cross sections; revised typical sections; revised drainage and utilities installations; revised track and signal design; revised structure details and/or any changes to the demolition andremoval items and any other changes to the original design or details.

1.4 GENERAL

A. Contractor shall document all plan changes in the field as they are approved and occur. A dedicated plan set shall be kept by Contractor on site to record all such changes and modifications.

B. Survey data shall be obtained by Global Positioning Survey (GPS) and certified by a ProfessionalLand Surveyor registered in Florida.

C. Contractor shall furnish paper “AS BUILT” plans, two (2) paper 11x17 bound copies of the completed project plans, and two (2) electronic file in AutoCAD 2018 Civil 3D on a labeled disk or portable USB drive to Engineer. These “AS BUILT” plans shall be furnished prior to the date of the final acceptance. Engineer will make the original drawings available to Contractor for the making of duplicates for use in preparing the as-built drawings.

D. The following standards shall be applicable:

1. Text: Text shall be drawn using a STYLE of "L100-XX" (where XX refers to the plotted scale) and a font file of "SIMPLEX" as defined in the AutoCAD survey template provided bythe Engineer. The style shall be defined as a "fixed height" style and have a height of 0.10 times the drawing plotted scale. (i.e. 4.0 for 40 scale plan, 2.0 for 20 scale etc.).

2. Precision and Accuracy:

    a. Horizontal Survey:

        1) Precision: Horizontal control and surveyed points shall maintain a minimum precision of 1:10,000.

        2) Accuracy: No more than 10% of the survey points shall be in error by more than 1/100 inch or 0.25 mm when viewed at the requested scale.

b. Vertical Survey:

1) Precision: Vertical Control shall have a maximum error of closure no greater than .075 feet or .02 meters.

2) Accuracy: No more than 10% of elevations when interpolated from a Surface shallbe in error of more than 1/2 a contour interval.

3. Surface Data: The data format shall conform to Autodesk Civil 3D Project files. If the Contractor uses a different software product to create a surface, then the surface must be represented as a TIN (Triangulated Irregular Network) of 3D lines on a separate, distinctlayer within the AutoCAD drawing file. 3D faces or 2 dimensional.

E. Drawings shall include approved design changes during construction. The plan sheets (or any other "job site record document") revised after award of contract shall include a complete accountand detail of the revisions and design changes. The party responsible for the revisions shall have the signed seal of a Professional Engineer (P.E.) registered in Florida on each altered plan sheet (or any other "job site record document" with a seal). This documented information is to be partof the As-Built Plan requirements.

F. As-built plans shall be neat, legible and of the correct size. Project plans shall include Plan, Profile, Cross-Section, and Detail Sheets which shall be full size. As-built plan size shall match the issued plan set size. In general, if the plan set was issued at 11"x17", theAs-Built shall be 11"x17".

G. All revisions to the original plans shall be delineated in red, located properly on the drawing, theyshall be legible and true to scale.

H. As-built plan, profile, cross section, and detail sheets shall be designated as such by note or stamp "As-Built" in black. As-built plans shall be bound in the same manner as they were issued.

I. Changes to the issued design by any outside agency shall have their plans added to the As-built plan set. This includes but is not limited to encroachment permit projects, enhancements, procurements, inter-governmental agreements (IGA), local public agency (LPA) projects and any other agency, private or public, making changes to the existing infrastructure or design. For each new or relocated utility installed, including those installed or relocated by others in the project area, perform an as-built location survey by coordinates prior to backfilling the excavation.

1.5 SUBMITTALS

A. The person or agency responsible for the work shall submit to the Engineer a set of As-built planswhich meet the requirements of this specification.

B. A complete digital base plan shall be provided in AutoCAD Civil 3D DWG format Release 2014 or later on a Compact Disk (CD) or portable USB drive, properly referenced to the proper coordinate system. The final As-built plans shall be submitted within forty-five (45) days following the substantial work complete date of the project.

PART 2 – PRODUCTS (not used)

PART 3 – EXECUTION (not used)

SECTION 341131 – TIMBERING POLICY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Surface and line all four crossing approaches to the restore the track geometry. A minimum of two (2) tamping passes required. Installed Ballast to be regulated and broomed once surfacing and lining complete.

B. Related Requirements:

1. Section 341126 - Railroad Track Ballast

1.3 GENERAL

A. The goal of this timbering policy is to ensure that the work meets all Owner Standards as well as goals for safety, quality, and cost effectiveness. Because ties are replaced in a wide variety of conditions, these instructions will define the process by which agreed upon results can be obtained. The success of this process will require a coordinated effort from a team consisting of Transportation, Maintenance of Way, and C&S.

B. The tie program will be established by request from the Roadmaster. Any changes after the program are finalized must be submitted through the change order process and have the approval of the Chief Engineer.

C. Any revisions to the program or schedule are to be distributed to all involved.

D. Tie Markings – As soon as the program is established, the other officer designated by the Chief Engineer will mark all ties and switch timber in the lot. The tie marking must be completed at least two months prior to the start of the tie team. Ties will be marked on the web of rail gage side with yellow paint.

PART 2 – PRODUCTS (not used)

PART 3 – EXECUTION

3.1 PROCEDURES:

A. PLANNING

1. Manager designated by the Chief Engineer will arrange a meeting with appropriate personnel a minimum of two months prior to the scheduled installation date of new ties to inspect the work site and to plan the work activity.

2. Personnel at the meeting must include: (1) either the Chief Engineer or Engineer Track, (2) Roadmaster, (3) Manager - Bridges, and (4) Manager – C&S, responsible for the maintenance of the section on which the project is scheduled.

3. This group will hi-rail the proposed project location to determine:

   a) Scope of work

   b) Who is responsible for various activities

4. If there are any item(s) on which agreement cannot be reached during the inspection, the Representatives will jointly discuss the item(s) with the Chief Engineer for a decision. The decision made will be added to the inspection notes.

5. Following the inspection, each individual will sign the Project Agreement (Appendix B). The pretrip packet mentioned in Paragraph II.B.2 (below) will be attached to the notes and copies forwarded to each individual making the inspection, and to the Chief Engineer.

B. PRELIMINARY WORK

1. The Chief Engineer will advise the group of the method and equipment that will be used for this project. The Roadmaster will maintain the inspection notes listing the work which needs to be done before the ties can be installed.

2. The Roadmaster, with input from the Chief Engineer, will prepare a pretrip packet of the project. Items to be in the packet include, but are not limited to the following:

   a. Straight line sketch of project area.

   b. Starting and ending locations.

   c. Storage areas for released track material.

   d. Equipment clearing and tie up points.

   e. Locations where the track gage exceeds limitations outlined in paragraph II.E.8 and out of face gaging is required. (Roadmaster to furnish the latest track geometry data)

   f. Extra spiking in existing ties.

   g. Road Crossings (refer to MWI 901 for additional information):

      1. Give locations, lengths, rail section, and surface material to be used).

      2. The street name or AAR-DOT crossing number.

      3. Identify high traffic density road crossing areas, develop plan to assist the team to maintain maximum productivity, and/or work crossings ahead of time.

      4. Ballast to be stockpiled

      5. Closure plan

   h. Ballast requirements

   i. Turnouts (switch ties to install or turnouts to retire):

1. Milepost location or name of switch. Identify switch ties to be replaced.

2. Give size, type of rail fastening system

j. Any special track material required by the C&S department

k. Wayside equipment defect detectors and other equipment; develop plan to protect (MWI 1121)

l. Locations at which the anchor pattern or spiking pattern is to be changed during timbering and amount of material needed.

m. Locations where special tie plates or positive restraint fasteners exist and if these plates and fasteners will be re-worked during timbering.

n. Identify screw spike and lock spike (hairpins) locations.

o. Check for tie plate damage or wear and rail anchor condition to assist in ordering tie plates and anchors.

p. Bridge types and lengths.

1. Inspect timber condition.

2. Removing and replacing ballast curbs.

3. Fall protection requirements and methods to be used.

q. Tunnel locations and lengths and the ventilation and lighting plan if required

r. Locations at which special track material is required, and other items that may affect timbering.

s. Team lodging

3. Roadmaster will be responsible for coordinating activities prior to the arrival of the team. This includes but is not limited to:

a. Ensuring that material is ordered and monitoring its delivery.

b. Unloading ties, switch ties, and other track material.

c. Coordinating with the Manager Material to ensure that materials arrive on time.

d. Distributing track material as stated in this instruction when it is received.

e. Discussing the proposed work and curfews with Transportation Managers to obtain the maximum possible track time, including participating in the curfew conference call.

f. Coordinating the closure of road crossings with state and local authorities.

g. Saw cutting bituminous concrete at road crossings if crossing is to be worked.

h. Preparing and furnishing to the team, upon its arrival, a local Emergency Response Plan (See page appendix A) including telephone numbers and highway directions to the nearest hospital or medical facility, police, and fire departments, and rescue service.

i. Doing any track work specified on the inspection notes.

j. Monitoring the progress of work listed on the inspection notes.

4. The Chief Engineer or Bridge Designate will be responsible for:

a. Altering ballast retention curbs to permit tie replacement and subsequent ballast retention.

b. Assist in any special needs for fall projection equipment or bridge specific systems on bridges requiring the use of fall protection.

c. Arranging for tunnel ventilation and/or lighting as needed.

C. MATERIAL DISTRIBUTION BY ROADMASTER PRIOR TO ARRIVAL OF TEAM

1. System Production Teams employ bulk delivery for much of the material required for the project to eliminate multiple handling of material items and to help eliminate waste of material. Ensure that adequate quantities of bulk material are available for the project.

2. The Roadmaster will be responsible for unloading ties in the proper quantities and locations.

3. Material unloading locations should be selected to prevent items from falling into ditches or rolling down steep banks. Keep walkways and drainage facilities clear.

4. At specific locations within the project area.

a. At designated tie up locations ensure team fuel and supply cars are spotted so that the material handling truck other mechanized system may access supplies, such as spikes, screw spikes, anchors, fuel, and plugging material, to be replenished on each machine daily.

b. At turnout locations: Appropriate length timbers. Quantities depend on the work planned.

c. At bridges and wood-to-concrete tie transition zones: Appropriate 10’ ties for transition zones. See plans 2607 and 2616.

d. At road crossings: Crossing material and hardware will be provided. Stockpile approved ballast that is sufficient to fill the track per the crossing design. If the plan calls for installation by another force, the material should be distributed at this time to take advantage of the curfew and the work train.

D. MATERIAL RELEASED

1. Old ties and track material released from the project will be stacked to facilitate removal. Walkways and ditches must be kept clear, and stacks must not impede sight distance at road crossings. Material shall not be placed beneath overhead wire lines.

2. Roadmaster, Manager Program Construction, Supervisor Program Construction, or Engineer Track will ensure proper removal of ties and designate storage locations.

3. Asphalt and other crossing materials removed from crossings must be disposed of properly.

E. TIE INSTALLATION

1. The ties to be replaced will be clearly marked with paint by the paint gage buggy operating at the front of the team. The operator will use the tie markings to make larger marks for the spike pullers and tie removers.

2. Ties should be placed in track with the heart wood face down so the tie sheds water. Tie should be square to the line of the rail. One end of the tie should be stamped, when this stamping is right side up the heart will be down. An alternate method of identifying the top of tie is by positioning the precut 1/ 8 inch deep saw cut, “kerf mark” (found 6 inches from the end of the tie) facing up.

3. Track ties will be installed square to the rails. The end of the tie on the line side will be 18” to 18-1/2” from base of rail.

4. At field welds, new ties will be spaced so that the weld does not fall on a tie or employ rubber tie plate under welds when crossties cannot be relocated.

5. Tie plates will be installed on all new and existing ties. Broken, damaged, or excessively worn plates must be replaced on ties being replaced.

6. Tie plates will be positioned so the field side shoulder bears evenly against the base of the rail and centered on the top of the tie. TIE PLATE SHOULDERS AND SPIKES WILL NOT BE LEFT UNDER THE RAIL.

7. At insulated joint locations: If a supported insulated joint tie is replaced, a new rubber tie plate will be used.

8. Ties will be spiked to existing track gage unless gage is:

    a. Greater than 57 inches on Class 1 through 4 track

    b. Greater than 56 3/4 inches on Class 5 and 6 track

    Proper gaging involves pulling spikes on old ties, plugging the holes, and spiking ties. Out of face gaging will be brought to 56 ½ inches. Spot gauging will be brought to a uniform gage compliant with the limits noted above.

    NOTE: Care must be taken with spike drivers equipped with automatic gaging devices to avoid inconsistent gage which may lead to premature gage widening and alignment problems.

9. The standard track spiking patterns are detailed in the current revision of Standard Drawings 2512, 2513, and 2514. Ties are spiked to standard spiking pattern at the time of installation.

10. If positive restraint fasteners are present, the proper tie fastener must be used (screw spike, Lewis Evergrip screw spike, or cut spike). If Pandrol plates with 6 square holes are used, insert 4 cut spikes. Refer to MWI 701 for additional instructions.

11. The standard rail anchor patterns are detailed in the current revision of MWI 703, Rail Anchoring Policy. Care must be taken to ensure that all rail is anchored to standard. Anchors in excess of present standard, except within road crossings, need not be removed. Site specific areas, approved by the Chief Engineer, where anchors in excess of standard are required to restrain rail movement are to be maintained.

12. Communication and Signal Equipment - Care must be taken during timbering operations to avoid damage to wayside C & S equipment. Refer to MWI 1121, Performing Track Work Near Equipment Defect Detectors for additional instructions.

13. The application of temporary slow orders will be governed by MWI 1109:

    a. The track is to remain restricted to a maximum of 25 MPH until surfaced.

    b. System Production Teams will completely surface all ties installed by the end of the work week. Refer to MWI 1103 for additional instructions.

    c. The Roadmaster or designated representative is responsible for changing or removing the restriction after personal inspection of the track.

14. The Roadmaster or designated representative will complete the Track Disturbance Management System on the Owner Records System on a daily basis.

15. Road Crossings:

    a. Materials unloaded for use in reworking road crossings and materials removed from road crossings should be placed in a vacant quadrant of the crossing, where possible. These materials should be placed in a manner that will not interfere with the clear line of sight for a highway user or rail equipment operator and will not interfere with the functioning of the road crossing signal equipment. Care must be taken to maintain visibility, walking conditions and not impede drainage.

    b. Refer to MWI 901 governing the installation of road crossings.

    c. Crossings that are worked should be raised so that at least one future surfacing cycle can be raised into the crossing without placing it in a hole. The runoff must not begin within 50 feet of the pavement.

    d. d) Where crossings are removed and are not put back, standard roadbed section will be provided. Road approaches will be cut down and ditches re-established. (See drawing 2523 and 2601)

16. Prior to releasing track to run trains:

    a. The Roadmaster or his designated Qualified Foreman shall inspect the entire limits of the work performed

    b. The Manager of the Team or his designated Qualified Foreman must inform the Employee-In-Charge that:

        1. All equipment and personnel are in the clear

2. All switches and derails are restored to the proper position

3. All temporary speed restrictions have been put in place at the proper locations

4. Any other conditions that would prohibit the safe passage of trains at timetable speed

5. The clearing location of equipment and method of securing the equipment in the clearing location.

F. QUALITY CONTROL

1. All Foreman and Assistant Foreman will ensure that all work is done in a quality manner within their area of responsibility.

2. The Roadmaster or Foreman will spot check individual ties installed during the day to verify the quality of the work. The Roadmaster or Foreman will inspect the track behind the team daily.

3. The Roadmaster and Foreman will jointly hi-rail behind the team every week or for short stretches, upon completion of the job, to verify the quality of the work and to confirm that the plan is being followed.

4. The Chief Engineer will make frequent trips to the team and observe the quality of the work. The job should be inspected by hi-rail with the Roadmaster before the team leaves the project location. If there is any question concerning any of the work underway or completed, they will immediately discuss with the Chief Engineer.

5. All work behind the team shall be in conformance with the provisions outlined in MWI 1113. In addition, the track shall be inspected in accordance with MWI 110. On a weekly basis, the Roadmaster or Foreman shall complete the Production Quality Control Review; the form shall be provided to the Chief Engineer for all projects.

3.2 REPORTS

A. The Roadmaster or Foreman will ensure that the Daily Production Reports are submitted. These reports must be completed at the end of each production day. Care must be exercised to ensure that all information is accurate.

B. The Roadmaster will prepare and forward the pre-trip packet as identified in Paragraph II A.6.

C. The Roadmaster or Foreman will ensure that the Production Quality Control Review form is submitted in accordance with MWI 110.

Prepared by:

Reviewed: _____

Approved: _____

Approved: _____

APPENDIX A

EMERGENCY RESPONSE PLAN

WORK LOCATION

Division: _____ Starting Date: _____

Subdivision: _____ Team Number: _____

Starting Milepost: _____ _____ Ending Milepost: _____

_____

EMERGENCY RESPONSE
DIRECTIONS FROM WORK LOCATION TO NEAREST MEDICAL FACILITY

_____

_____

_____

_____

_____

(Give highway exit numbers and other landmarks that will aid in finding the facility. Give mileage to the nearest tenth of a mile.)

EMERGENCY TELEPHONE NUMBERS

Rescue: (_____) _____ Name: _____

Police: (_____) _____ Name: _____

Fire: (_____) _____ Name: _____

Radio Channel for Dispatcher: _____

Chief Dispatcher: (_____) _____

Chief Engineer: (_____) _____

Roadmaster: (_____) _____

APPENDIX B

PROJECT AGREEMENT

Division _____ Date: _____

Subdivision: _____

Type Lot: _____

MP: _____ MP_____

Attached:

1. Record of Trip _____
2. Straight Line Drawing. _____
3. Curve Chart _____
4. Clearance Diagrams _____
5. Requisitions _____

We the undersigned have reviewed the above referenced lot and agree with the attached plan to accomplish the work.

Chief Engineer _____

Engineer Track _____

System Representative _____

Roadmaster _____

Bridge Representative _____

Signal Representative _____

Construction Representation _____

SECTION 341132 – RAILROAD SURFACING POLICY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Surface and line all four crossing approaches to the restore the track geometry. A minimum of two (2) tamping passes required. Installed Ballast to be regulated and broomed once surfacing and lining complete.

B. Related Requirements:

1. Section 341126 - Railroad Track Ballast

1.3 GENERAL

A. The goal of this track surfacing policy is to ensure that the work meets or exceeds all Owner and FRA Standards, as well as Owner goals for safety and quality. Because surfacing work is done in a wide variety of conditions, these instructions will define the process by whichagreed upon results can be obtained. The success of this process will require a coordinatedeffort from a team consisting of representatives, including Transportation, Maintenance of Way, and Signal.

B. All surfacing operations must be performed in the proper sequence and in a uniform manner. Special attention must be placed on crossing, and restricted clearance location work. It must be kept as close as possible to the general surfacing.

C. The track being worked will be protected by an appropriate temporary speed restriction during any period that it is not safe for authorized speed. Refer to MWI 1109.

D. Current instructions governing jointed and welded rail track maintenance in hot weather will be followed carefully. The Roadmaster will arrange to adjust rail, which requires adjustment by cutting, ahead of surfacing operation. Muddy or fouled ballast locations should be cribbed or undercut in advance of surfacing operations where possible. The forces, as agreed upon in the planning meeting, will do this work. Ballast cleaning, if required, should be done in advance of the surfacing.

E. Switch timber or spot tie installations should be done in advance of the surfacing operation.The forces, as agreed upon in the planning meeting, will do these installations. G. Road crossings are most efficiently re-worked during the System Production Timbering Program. The surfacing program normally ties into the existing road crossings. Only thosecrossings, which have drainage or geometry defects, should be re-worked within the surfacing program.

F. System Production Teams will completely surface all ties installed at the end of each workweek.

PART 2 – PRODUCTS (not used)

PART 3 - EXECUTION

3.1 PROCEDURES

A. DISTRIBUTION OF BALLAST

2. When distributing ballast, care must be taken to control the flow of the material. TheRoadmaster will ensure that the proper amount of ballast is unloaded, consistent with the required raise and the Owner Standard Ballast Section (refer to standard drawing 2602).

3. Ballast will not be unloaded on highway crossings, or other areas where it will damage equipment or interfere with operations. Special care must be taken to ensure that switches can be properly thrown.

4. When cars are discovered containing excess fines, or other non-standard materials, theemployee in charge of unloading will inform the Roadmaster. The Roadmaster is responsible to see that the car number(s) are reported to the Dispatcher responsible forballast cars.

5. Ballast unloading will be kept current with all surfacing operations.

B. SURFACING OPERATING

3. The Roadmaster will determine the amount of track raise. The track raise will be basedon the available ballast and the following criteria:

   a. The minimum height necessary to maintain proper profile, superelevation, andstandard ballast section.

   b. Sufficient space under the tie to allow ballast to be inserted and compacted.

2. When more than one tamping machine is working in tandem, the foremen and operatorsmust have a clear understanding concerning which ties each tamper will tamp.

3. When more than one tamping machine is working in adjacent areas, operators must have a clear understanding concerning the reference rail and runoffs made between tampers.

4. If a tamper malfunctions during surfacing operations in a manner that adversely affectsthe quality of the raising, aligning or ballast compaction, the following actions are required:

   a. A temporary runoff of superelevation or track raise, appropriate to the temporary speed restriction, will be made.

   b. The track will be protected by a temporary speed restriction, not exceeding 25 MPH. Use Reason Code 140 - Surfacing Team.

   Before this temporary speed restriction is removed, the entire limits of the affected area (including the entire curve) must be checked, and reworked if necessary, with a fully functioning tamper to ensure that the quality of the line and surface is consistent with Owner Standards.

   Some examples of applicable malfunctions are ineffective tamping tools, lifting, lining, or slewing component problems, as well as measurement and data system componentsproblems, etc.

5. The foreman and operators will make inspections, on at least a daily basis or when therail height changes, to ensure that tamping tools are maintained and adjusted as follows:

   a. All tamping tools must be in place and functional.

   b. Tamping tools should be adjusted so that the top of the tool pad is ½” below thebottom of the crosstie at full insertion.

c. Tamping tools should be replaced when the tamping tool pad wears to a dimension of less than 1-3/4" high x 4” wide as measured on the smallest side.

d. When changing tamping tools, the tamping tool pad must not be struck with a hammer due to the danger of metal chipping from the hardened surface of the pad. The tamping tool will be removed by the method recommended by the machine manufacturer.

e. Special attention must be used when tamping concrete ties to ensure correct depth penetration is obtained. Failure to have correct depth penetration will result in damage to the ties if the tamping tool pads press against the side of theties during the squeeze cycle. Also, care must be used to avoid unintended tie movement and damage to the concrete tie pads.

6. Surfacing operations on or near bridges, at tunnels, at overhead bridges or at other areasof restrictive clearance will conform to the following:

a. Ballast section at the ends of bridges will be kept clean and well drained with ties fully supported at proper elevation to conform to that of the bridge.

b. Tracks at ends of the bridges, trestles and through tunnels must be kept in goodline and surface at all times.

c. The surface of track shall conform to the existing approach profile of open deckbridges and tunnels.

d. Standard ballast section must be maintained on ballast deck bridges. Therefore,the track shall not exceed an elevation that allows the top of ties to be more than:

1) Four (4) inches above the ballast curb on concrete bridges; or

2) Nine (9) inches above the timber ballast curb on timber bridges.

CAUTION: Ensure that materials do not fall onto roadways or into waterways.

e. There shall be no changes that reduce the clearance of tracks through tunnels without the prior approval of the Chief Engineer.

f. Tracks under overhead structures must not be raised to a height that reduces theminimum route clearance, without the prior approval of the Chief Engineer. Ingeneral, the clearance under each structure should be reviewed to ensure that future route clearance improvement projects would not be adversely impacted.

g. Track centers will not be reduced below the minimum route clearance during lining. Maintenance personnel will check restrictive locations in advance of thesurfacing team. The track alignment on ballast deck bridges must not be changed without prior approval from the Chief Engineer.

7. Ballast will be pulled into shy areas as quickly as possible behind the tamping machineand before the end of the workday. Pulling fouled ballast into the ballast section is notpermitted.

8. The foreman will make periodic inspections during ballast regulation operations to ensure that care is being taken:

a. Do not damage adjacent property, especially at highway underpasses.

b. Do not pull fouled ballast or other undesirable material into road crossings. Theregulator should work away from the crossings whenever possible.

c. Do not damage rail fastening systems.

9. Special care must be taken to ensure that rail anchors within the work area are properlyseated against the ties. In elastic fastener areas, ensure that missing fasteners are replaced. When the entire curve is worked, the completed project will comply with MWI 1113.

10. When a track stabilizer is used, a sufficient ballast section must be established beforethe stabilizer passes.

C. MAINTAINING CURVE GEOMETRY

1. Both vertical and horizontal curve geometry and superelevation will conform to OwnerStandards. Refer to MWI 1104.

2. The Roadmaster will ensure that the Surfacing/Smoothing Team has an accurate copyof the Master Track Attributes—Curve from the Owner Records System, that conforms to current Owner Standards, before the work begins. He or a qualified designated employee will determine if advance curve measurement is required for the surfacing/smoothing work and furnish the information to the Surfacing/Smoothing Team.

3. The Roadmaster or designated representative working with the surfacing unit, will mark the control points (TS, SC, CS, and ST) on all curves worked within out-of-face,smoothing, and spot surfacing projects with blue paint.

4. If the surfacing/smoothing work will be done utilizing a tamper equipped with a Computer Aided Geometry System (CAGS) or equal, the tamper can be used to measure the curves. The TS, SC, CS, and ST points will be located while tamping andmarked by painting the inside and outside web of the rail blue. All curve data generatedby the CAGS must be furnished to the Roadmaster before the surfacing team leaves theRoadmaster's territory.

5. If the surfacing/smoothing work will be done utilizing a tamper that is not equipped with CAGS or capable lining system, the starting and ending points of each curve canbe located using a 62-foot chord. Data furnished from a Geometry Vehicle, which hasa system that furnishes the information, should be used to determine the accuracy of existing records and if any advance work will be necessary prior to commencing the surfacing and lining operation. The TS, SC, CS, and ST points will be located and marked by painting the inside and outside web of the rail blue.

6. The following procedure will be followed to ensure that track stability is maintainedon main and branch lines where:

- the track is laid with continuous welded rail,
- on curves one degree (1º) or greater where the maximum authorized speed is 25 miles per hour or greater or on all curves greater than three degrees (3°),
- and an expected rail temperature of 50° Fahrenheit or below within 24 hours of the work.

Work during these conditions can create situations that lead to “adding” rail to the track, thereby affecting the track’s neutral temperature. The following procedures will assist in evaluating the track.

a. When the track is to be disturbed, the Roadmaster must ensure references are set at five or more locations before the work is performed. The references will be located at:

- tangent to spiral (TS)
- spiral to curve (SC)
- mid-point of the curve
- within the body of the curve, as necessary,
- curve to spiral (CS)
- spiral to tangent (ST)

The reference may be a fixed object or a 2” x 2” x 12” wood stake. They should be spaced no more than listed below if practicable:

- 100 feet apart on curves 9º and above,
- 200 feet apart on 4º to 9º curves,
- 400 feet apart on 2º to 4º curves,
- 800 feet apart on 1º to 2º curves,

and must be clear of maintenance activities. Do not place stakes at the endsof ties or in walking areas.

Measurements should be taken from the field side head of the near rail to the face of the fixed object or the top near face of the stake. The tape usedto make the measurement should not slope more than 1 vertical to 4 horizontal. A record of the reference stake location information will be furnished to the Roadmaster before the Surfacing or Smoothing Team leaves the territory. Use the Curve Alignment Reference Form that is included with this MWI to document this information.

b. During the work the rail temperature will be measured three times during the workday. The high and low temperatures will be recorded on the Track Disturbance Record and the report will be furnished to the Roadmaster. The measurements will be taken at the beginning, middle, and the end of the workday on the shady side of the rail web with an approved thermometer. Theappropriate temperatures will be recorded on the Curve Alignment Reference Form and the Track Disturbance Rail Addition Record and the reports will be furnished to the Roadmaster. The Track Disturbance Rail Addition Record is to be faxed to the number on the form.

c. The Roadmaster or his designated representative will record the amount of movement periodically for up to 15 days after the work has been completed. If the curve moves inward more than an average of 1”, a Track Disturbance Rail Addition record must be completed. The Roadmaster is responsible for remedial action prior to hot weather. Corrective action will be one or more of the following:

- Place the curve on its original alignment.
- Adjust the rail.

- Place a temporary speed restriction not to exceed 25 MPH until one of the above is accomplished.

Stakes, that could become a tripping hazard, should be removed as soon aspossible.

7. Freshly surfaced track will require a temporary speed restriction. See MWI 1109 forproper application of the temporary speed restriction.

D. FINISHED TRACK GEOMETRY

1. The minimum quality information shown below applies to out-of-face and smoothing teams. Teams with mechanical equipment must comply with MWI 1113, Surfacing Section.
2. The deviation from zero (0) cross level on tangent and designated elevation on curve will not be more than:

Track Class	1	½”
Track Class	2	½”
Track Classes	3 & 4	3/8"
Track Class	5	1/8"
Track Class	6	1/8"

3. The deviation from uniform profile (sags or humps) in 62 feet will not be more than:

Track Class	1	1”
Track Class	2	¾”
Track Classes	3 & 4	½”
Track Class	5	3/8”
Track Class	6	¼”

4. The deviation from proper alignment on spirals and curves at the midpoint of a 62 footchord will not be more than:

Track Classes	1 & 2	1"
Track Classes	3 & 4	3/8"
Track Class	5	1/8"
Track Class	6	1/8"

5. Line swings at the end of spirals will not be permitted. Line swings on tangents whichdeviate from true line at the rate of more than one inch per hundred feet will not be permitted.
6. Rates of runoffs will be equal to or less than one (1) inch in 100 feet at the end of finished work.
7. Runoffs on the diverging portion of turnouts must be located off the long ties and mustcomply with paragraphs D 2, 3, and 4 above.

E. FINISHED BALLAST SECTION

1. The cross section of dressed ballast after compaction and expected settlement will havefull cribs and shoulders that conform to the Standard Ballast Section. Refer to OwnerStandard Drawing 2602.
2. Excess ballast on the shoulder or in the track will not be permitted at highway and railroad crossing approaches, or defect detectors.
3. Excess ballast will be removed from bridge walkways, abutments and curbs, station platforms, and turnouts.

F. OTHER

1. Communication & Signal Equipment - Care must be taken during surfacing operationsto avoid damage to wayside Communication & Signal equipment. When surfacing inand near defect detectors, refer to MWI 1121 for detailed procedures.
2. When surfacing switches, use care around snow melters. Do not damage equipment.
3. Road Crossings - Materials unloaded for use in reworking road crossings and materialsremoved from road crossings should be placed in a vacant quadrant of the crossing, where possible. These materials should be placed in a manner that will not interfere with the clear line of sight for a highway user or rail equipment operator and will not interfere with the functioning of the road crossing control signal equipment. Care mustbe taken to maintain visibility, walking conditions and not impede drainage. Disposal of asphalt and other materials removed from the crossing will use a method consistentwith Owner environmental policy. See MWI 901 for detailed road crossing information.

G. REPORTS

1. The Roadmaster will ensure that:
   a. Daily Production Reports are completed and submitted at the end of each production day,
   b. Track Disturbance Record is completed daily,
   c. All curve data generated by the CAGS is furnished to the Roadmaster before the surfacing team leaves the Roadmaster's territory, and
   d. A record of the reference stake location information will be furnished to the Roadmaster before the Surfacing/Smoothing Team leaves his territory. Use the CurveAlignment Reference Form that is included with this MWI to document this information. An Excel version of this form is also available in the Owner InformationSystem.

H. The Roadmaster will ensure that the Master Track Attributes—Curve, information in the Owner Record System is updated within 30 days after completion of the work.

Prepared by:

Reviewed: _____

Approved: _____

Approved: _____

CURVE ALIGNMENT REFERENCE FORM

Division _____ Subdivision _____ Track _____ Deg Curve _____

Milepost: Prefix _____ Begin _____ End _____
Work Direction: (low to high MP) (high to low MP)

Type of Fasteners: (rail anchors) (Pandrol plates) (other _____)

Team No. _____ Team Type _____

	DATE				
	RAIL TEMPERATURE				
	RECORDER				
NO	**DESCRIPTION**	**MEASUREMENT 1 Before Work**	**MEASUREMENT 2 After Work**	**MEASUREMENT 3 Follow Up**	**MEASUREMENT 4 Follow Up**

NOTES:

References should be marked fixed objects or wood stakes if practicable.
Number reference points in sequence in the direction of work.
In "Description", note TS, SC, CS, ST, and identify reference.
Measure from the field side of the near rail to the face of fixed object or stake.
References should be spaced no more than:

- 100 feet on curves 9 degrees and above
- 200 feet on 9 degree to 4 degree curves
- 400 feet on 4 degree to 2 degree curves
- 800 feet on 2 degree to 1 degree curves

Reference stakes must be clear of maintenance activities, walking areas, and tie ends.

SECTION 344200 – GENERAL SIGNAL REQUIREMENTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section describes the concepts and basic technical signal requirements for work to be performed by the Contractor. Scope of work for the Automatic Highway Crossing Warning (AHCW) System includes the technical requirements specific to each signal subsystem and shall be found in each of the corresponding subsystem sections as listed herein.

PART 2 – PRODUCTS

2.1 MATERIALS FURNISHED & INSTALLED BY CONTRACTOR

A. Automatic Highway Crossing Warning (AHCW) System - The Contractor shall furnish all material described within these Specifications and shown on the Contract Drawings which shall include but not be limited to mast mounted flashing light units, gate layouts, foundations, gates, electronic bells, instrument housing, train detection system, crossing controllers, battery chargers, battery banks, power-off indicator lights and underground cables and conduits. Contractor shall design purchase and install all AHCW material in accordance with the provisions of the Contract Drawings, Specifications, AREMA Recommended Practices and FRA Rules, Standards, and Instructions.

B. Galvanized Rigid Steel (GRS) Conduit and Schedule 80 PVC Conduit - The Contractor shall furnish and install one 4” GRS conduit under the track on both ends of the grade crossing surface and two 4” Schedule 80 PVC signal conduit under the roadway on one side of the grade crossing surface at each crossing location.

2.2 REMOVAL AND DISPOSAL OF MISCELLANEOUS MATERIAL

A. Miscellaneous Materials -The Contractor shall remove and dispose of all materials including all protective materials from the signal equipment delivery and dispose of that material off-site. In addition, dispose of all other materials that may be exposed as result of their work under this Contract including any hazardous materials. Disposal of all materials shall be done at no additional cost to JAXPORT.

PART 3 – EXECUTION

3.1 PROTECTION OF FACILITIES

A. The Contractor shall protect in place and avoid damage to all permanent infrastructure during the execution of the work.

B. The Contractor shall protect the existing track structure from damage and shall protect the existing ballast from contamination.

C. Any equipment damaged by Contractor shall be replaced in-kind with new, without time extension or additional cost to JAXPORT.

D. Any excavation shall be returned to final grade.

3.2 JAXPORT COORDINATION

A. JAXPORT is the independent government agency in Jacksonville, Florida, that owns and operates much of the seaport system at the Port of Jacksonville. They control the docks and wharfs, cranes, a passenger cruise terminal, warehouses, paved open storage areas, and road connections to the public highway system and is the independent government agency in Jacksonville, Florida, that owns and operates much of the seaport system at the Port of Jacksonville. Over 30% of the terminal's shipments utilize on-dock rail service provided by CSX Corporation directly. The grade crossing is on Blount Island Marine Terminal, which is JAXPORT's largest container facility, handling 80% of all container cargo at the port. The Contractors work windows will be restricted during times when offloading of container ships are scheduled. During these busy times for JAXPORT they will work with the Contractor to ensure there are sufficient work windows available, however Port operations will take precedence over Contract installation work.

B. Daily meetings will be required between the on-site representatives of Contractor and the JAXPORT Representative EIC in Charge (EIC) to ensure coordination of work activities and JAXPORT offloading and CSX freight rail service. During working hours, the track shall remain passable for scheduled freight train moves. All personnel, equipment and material shall be cleared and secured from the track, and all switches shall be normalized and properly lined up as directed by The EIC in charge. At the end of each shift: any in service track must meet FRA Class 2 criteria (Class 5 upon completion of a turnout); all personnel, equipment and materials shall be cleared and secured from the track, and all switches shall be normalized, in working order and secured as directed by the EIC.

C. The protection of trains, overall safe operations, and the protection of workmen and JAXPORT personnel are paramount objectives in executing the Work. All personnel entering the JAXPORT Right-of-Way must have Roadway Worker Protection (RWP) training in accordance with the Roadway Worker Protection Manual and On-Track Safety Program.

3.3 WORK HOURS AND NOISE CONTROL

A. Municipalities through which JAXPORT operates have varying ordinances which control various activities such as work hours. While JAXPORT believes that the ICC Termination Act exempts JAXPORT activities from local regulation, JAXPORT has adopted a “Good Neighbor Policy” and one element of that policy limits, to the extent consistent with efficiency and safety, early morning, and late night operations. Accordingly, unless otherwise controlled or allowed by local ordinances, work shall not start before 6:30AM and shall end before 7:00PM daily. Work on weekends and Holidays is encouraged due to no train operations on those days.

B. Noise control is a part of JAXPORT’s “Good Neighbor Policy” and includes many of the activities discussed above. Noise from trackwork operations shall be controlled to the extent possible, including the sounding of horns and warning devices on railway maintenance and construction machinery. Nothing set forth in this Section shall relieve Contractors from full compliance with FRA and Commonwealth regulations regarding sounding of horns, whistles and/or bells at crossings and approaching and passing through work zones.

3.4 JAXPORT PROVIDED SUPPORT SERVICES

A. Coordination of on-track safety protection for the Contractor and/or Subcontractor's personnel and equipment. Contractors will be provided the following required Support Services by JAXPORT personnel:

1. Railway Worker Protection ("RWP") training will be provided by to each Contractor and/or Subcontractor employee on the Project site. RWP Training is mandatory and must be successfully completed prior to accessing the ROW. Contractor will be charged a nominal fee by JAXPORT for each worker trained in RWP. Contractor shall be responsible for all other costs incurred by workers related to the RWP training.

2. Daily onsite worker safety inspections by ;

3. One full time Employee in Charge (EIC) and additional personnel as required supplied by JAXPORT for the duration of Contractor and/or Subcontractor's presence on site. The EIC will provide the following services to Contractor and/or Subcontractor:

   a. Daily Job Briefings at the beginning of each work-day and anytime work conditions change.

   b. Coordination of on-track safety protection for Contractor and/or Subcontractor's personnel and equipment.

   c. Flagging of all train movements through Contractor and/or Subcontractor's work location.

   d. Flagging of all vehicles at highway crossings fouled by Contractor and/or Subcontractor's personnel and/or equipment; and

   e. Daily end of work track inspections required to place track worked on by Contractor and/or Subcontractor back in service.

3.5 PROJECT OVERSIGHT

A. At least one full-time JAXPORT representative will be present on-site for the duration of the project for the purpose of representing Owner's interests with regard to this project and will provide:

1. Oversight and Construction Inspection Services;

2. Act as a liaison between the Contractor and JAXPORT;

3. Daily end of day employee production reporting.

SECTION 344252 - COMMERCIAL METERED POWER SERVICES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes a description of work for designing, furnishing, and installing signal power distribution and supply systems.

B. Related Requirements:

1. 344200 General Signal Requirements
2. 344258 Signal System Testing
3. 344264 Automatic Highway Crossing Warning System
4. 344266 Signal Drawings and Record Plans

1.3 GENERAL

A. The Work to be done under this Section consists of furnishing and installing a new 60 Hz single-phase 120/240 VAC commercial metered power service at the locations specified within Scope of Work Section of these specifications.

B. The Contractor shall conduct site inspection for coordination with utility company and shall obtain all required permits.

C. This work shall conform to the standards and recommendations of the supplying power utility and the National Electrical Code to obtain the commercial metered power services.

1.4 QUALITY ASSURANCE

A. All material and equipment furnished and installed shall conform to all applicable state and local ordinances pertaining to electrical power installations and the latest edition of the National Electrical Code (NEC).

1.5 SUBMITTALS

A. The Contractor shall submit for approval all materials and methods of installation to be provided under this section.

1.6 GENERAL REQUIREMENTS

A. The Contractor, in coordination with the JAXPORT shall obtain all permits, licenses, and agreements with the supplying utility company and be responsible for all user installation costs that the utility requires.

B. The Contractor shall coordinate the connection and interface of new cables and equipment with the Operating RR utilities in accordance with their standards.

C. The Contractor shall install all power cables underground at a minimum depth of 48" unless otherwise agreed to by the EIC.

D. The Contractor in coordination with the Operating RR shall arrange for all required inspections by the local electrical inspector.

E. The Contractor in coordination with the Operating RR shall make the necessary arrangements with the supplying utility to provide the power requirements.

1.7 SCHEDULE

A. The power service shall be energized prior to the scheduled field-testing date.

PART 2 – PRODUCTS

2.1 MATERIALS

A. POWER SERVICE EQUIPMENT

1. The Contractor shall provide power meter enclosure, meter support facility, all required cable, and all miscellaneous material and conduits in accordance with these specifications. Meter will be provided by Utility Company.

2. Existing circuit breakers inside the instrument enclosure shall be sized and replaced by the Contractor with new, unless otherwise directed by the EIC.

B. SERVICE ENTRANCE CONDUCTORS

1. Service entrance conductors shall be installed in accordance with the supplying utility's requirements and the National Electrical Code (NEC).

PART 3 – EXECUTION

3.1 INSTALLATION

A. GENERAL

1. The installation of the various equipment and materials for the new commercial metered power services that are specified herein and in other Sections of these Specifications shall be installed in accordance with the supplying utility's requirements and the National Electrical Code (NEC).

2. The requirements included within this Section shall cover all incidental installation work necessary to affect an integrated, tested, and operable power supply system for the project.

B. POWER SERVICE ENCLOSURES AND LINE DROPS

1. Power service enclosures shall be installed on 30 foot (minimum) wood poles.

2. Cable connections of the service entrance conductors to the incoming utility feeders shall be made by the supplying utility.

C. GROUNDING

1. Power service grounding shall be installed in accordance with the latest edition of the National Electrical Code (NEC), and the supplying utility's requirements. If there is a conflict the supplying utility's requirement shall govern.

3.2 TESTING AND INSPECTION

A. Simulated load tests, in accordance with approved signal power system test procedure, shall be satisfactorily completed prior to final connection of signal facilities at each equipment location.

B. Prior to acceptance, the Contractor shall have new ac power service approved by electrical inspectors.

SECTION 344258 – SIGNAL SYSTEM TESTING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes all tests and inspections to be performed by the Contractor to demonstrate that systems, subsystems, assemblies, sub-assemblies, and components supplied under this Contract are in compliance with the Specifications.

B. In event of design errors or failure to meet Specification requirements, any corrections made, all tests or retests to prove compliance, and any necessary regression testing shall be included in the work, at no additional cost to the Owner.

C. Work shall include all necessary test-purpose disconnecting and reconnecting. The Tests included in this section are intended to be representative but not exhaustive. The Contractor shall include all manufacturers and Contract required testing.

D. Related Requirements:

1. 344200 General Signal Requirements
2. 344252 Commercial Metered Power Services
3. 344264 Automatic Highway Crossing Warning System
4. 344266 Signal Drawings and Record Plans

PART 2 – PRODUCTS (not used)

PART 3 – EXECUTION

3.1 TESTING

A. QUALITY ASSURANCE TESTING PROCEDURES

1. All test procedures and inspection procedures shall be subject to the approval of the EIC and shall comply with all FRA rules and regulations.

2. Test equipment of the proper type, capacity, range, and accuracy shall be supplied by the Contractor to perform the required tests and inspections. This equipment shall be in good working order and properly calibrated at the time the tests or inspections are conducted.

3. Each component and unit of the AHCW system shall have an inspection performed at its point of manufacture, and evidence of this inspection and acceptability shall be indicated on the item where practicable.

4. Within 3 days prior to placing in service, the Contractor shall adjust all rectifiers and dc power supplies for maximum output for a period of 24 hours. Following this operation, the Contractor shall adjust the output in excess of the load requirements in accordance with the battery manufacturer's recommendations.

5. The EIC shall witness any or all field tests conducted. The EIC shall be notified in writing at least 48 hours prior to each field test. No part of the AHCW system shall be placed in service without the EIC being present and witnessing the in-service tests, unless otherwise authorized by the EIC.

6. The work shall include all tests required to ensure the proper and safe operation of all systems and subsystems and to prove the adequacy and acceptability of the total installation specified herein. The tests to be performed shall cause each system and subsystem to be sequenced through its required operations, including the imposition of simulated conditions to prove that the installation complies with all specified fail-safe requirements.

7. In the event of the test failure or if the system does not meet the specification requirements, necessary corrections shall be made and any and all tests or restarts to prove compliance shall be included in the work, without any additional cost to the Contract.

B. FIELD TEST PROCEDURES

1. The field tests performed shall cause each installed system and subsystem to be sequenced through its required operations, including the imposition of simulated conditions, to demonstrate that the installation complies with all specified fail-safe design requirements and operational functions.

2. The quality of the installation shall be demonstrated by field tests for continuity, insulation resistance, resistance of ground connections, circuit breakdown, visual inspection, and any other tests required by this specification. These tests shall be performed prior to any operational testing of systems or subsystems.

3. The Contractor's test procedures shall consist of pre-printed data sheets or inspection sheets for each test. When completed by the field test personnel and checked for accuracy and completeness, the sheet shall be submitted as the test report.

4. When tests require specific meter or test instrument readings, the pre-printed data sheet shall show the allowable range of values for each part of the test. The test report shall also contain a check-off system for each action and a blank space adjacent to the expected value in which to record the test readings.

5. The test report shall also contain a final description sheet on which the Contractor shall record discrepancies found and action taken. This document shall be furnished to the EIC.

6. All test reports shall be dated and signed by the responsible employee of the Contractor or subcontractor on the day the test is performed. Space shall also be provided for the signature of the witnessing EIC or JAXPORT inspector.

7. The report shall show the specific test instruments used on each test, with the instruments identified by name, type, serial number, and calibration due date.

8. Should an error be discovered during field testing, due to field wiring and connections that do not agree with the approved circuit plans, the Contractor may correct such errors without prior approval

of the EIC. The Contractor shall not, however, make any changes which affect safety of operation of the approved circuit(s) as designed, without prior written approval of the EIC.

9. The EIC will make all final determinations as to whether only a part, or the whole test, shall be rerun when any specific field test does not meet the requirements specified for the test.

10. Any changes made after completion of test procedure shall be retested in accordance with the applicable test procedure.

C. FIELD TESTS AND INSPECTION

1. General Field Tests. General field tests shall include, but not be limited to, the following:

   a. Ground verification test.

   b. Power racks – energy distribution system and failure alarm checks.

   c. Wiring verification of all circuitry.

   d. Vital function tests.

   e. Operating tests

   f. All applicable tests prescribed by AREMA Signal Manual Part 2.4.1, where the AREMA inspections and tests do not conflict with the requirements of these specifications.

2. Specific Field Tests

   a. Ground Resistance Testing

      1) The Contractor shall perform testing of all signal locations using a ground resistance direct-reading single test meter utilizing alternating current fall-of-potential method and two reference electrodes.

      2) Test Procedure

         a) The ground electrode to be tested and the two reference electrodes shall be oriented in a straight line spaced a minimum of 50 feet apart.

         b) The two reference electrodes shall be driven 5 feet deep.

         c) The maximum resistance value goal of the main ground for wayside outdoor locations shall be within a range of 1 to 5 ohms. If it is found that the resistance value of the main ground exceeds this range, the Contractor shall install additional ground rods, a maximum of 4. Additional ground rods shall be spaced no less than 10 feet apart. If, after additional ground rods are installed, excessive resistance readings persist, the Contractor shall notify the EIC.

         d) The Contractor may propose an alternate method to the fall-of-potential method for approval by the EIC. Any such alternate method shall be supported by documentation that validates that the resultant measurement readings are analogous.

b. Insulation Resistance Tests

1) The test procedure for testing of insulation resistance shall include tests to verify the following:

a) All wire and cable installed for vital circuits along the right-of-way and wire and cable entering or leaving wayside instrument housings shall be tested after installation to ensure that insulation of wires and cable and connected equipment meet the specified resistance value. A direct reading instrument, having a 0-megohm to 200-megohm-scale range and a self-contained dc power supply rated 500 volts minimum to 1000 volts maximum, shall be used to measure the insulation resistance. Resistance between conductors and ground shall not be less than that specified in the Federal JAXPORT Administration Grade Crossing Signal System Safety and State Action Plans, Part 234.267.

b) The insulation resistance of each conductor to ground and between each conductor and all other conductors in each multi-conductor cable shall be tested. Power sources, made grounds, and connections to the rails shall be disconnected from the circuits during testing.

c) The point used as ground shall be the most convenient ground available.

d) Insulation resistance test values shall be recorded on approved Insulation Resistance Record Forms and turned over to the EIC upon their acceptance of this test requirement.

c. Energy Distribution

1) Energy-Off Tests

a) With all power to SIH or Instrument Case off, the following checks and tests shall be performed. These tests shall include but not be limited to:

1. Verify that circuit breaker size compares to that of the approved circuit plans.

2. All energy distributions shall be checked using a resistance test instrument acceptable to the EIC to verify agreement with the approved plans.

3. Compare wire gauges with those called for on the approved circuit drawings. All discrepancies in wire sizes shall be replaced with the proper size wire.

4. Terminal board tags shall be verified for proper nomenclature and terminal location.

5. Each energy bus shall be tested to all other energy buses to ensure that no crosses exist.

2) Energy-On Tests

a) Upon completion of the energy-off tests, the following checks and tests shall be performed. These tests shall include but not be limited to:

1. Insert circuit breakers for power supply feeds and verify proper size according to the approved circuit drawings.

2. Turn on energy feeds and test operation of power transfer for proper operation.

3. Each ac voltage input shall be measured and recorded.

4. Each power supply or charger output voltage shall be measured and recorded.

5. Verify that the proper voltage is present at all distribution points.

6. Check circuit power failure alarms, and all other alarms that indicate to Central Control.

7. Check battery water level and specific gravity of all cells.

3) Circuit Continuity Tests

a) All wire and cable installed by the Contractor shall be tested to verify the continuity of each conductor and that each conductor is connected to the proper terminal as shown on the approved drawings. Where parallel circuits exist, each parallel path shall be tested independently to verify the continuity of each path.

4) Circuit Wiring Verification

a) All vital and non-vital circuit wiring shall be checked for accuracy against the approved circuit plans. Tests may be done with energy on or off and shall verify, but not be limited to, the following:

1. Point to point wiring

2. A wiring count of all field installed wires shall be made for each terminal, relay contact, etc. to ensure that only the number of wires called for on the approved circuit plans is present at each terminal, relay contact, etc. Any discrepancies found shall be corrected.

3. Verify tags and nomenclature where applicable.

4. Verify that all components, relays, resistors, etc. are the same as called for on the approved circuit drawings and located in proper positions.

5) Breakdown of Control Circuits

a) Each circuit shall be tested by simulating all operating conditions to verify that the circuit operates in accordance with these specifications and approved plans.

6) Power Tests

a) The following power tests shall be made and recorded:

1. The voltage of the main power feeders shall be measured and recorded.

2. A check of all circuit breakers shall be made for correct size and type.

3. All power supplies, battery chargers, and batteries shall be checked for correct setting and quantities.

4. Bus-to-bus checks shall be made to determine that no shorts, crosses, or grounds exist.

7) AHCW Operational System Tests

a) A test train shall be used to verify that any AHCW motion sensor and/or CWCS equipment installed under this Contract has the specified warning time at each highway grade crossing.

b) Tests of the AHCW systems shall be performed in both directions at various speeds to the satisfaction of the EIC.

c) As an alternate to test train operation, the Contractor may propose a field train simulation test procedure for the approval of the Agency and the maintaining JAXPORT. Any such alternate procedure proposed shall be accompanied with verification documentation of such field tests performed by the Contractor for similar AHCW installation projects.

SECTION 344264 – AUTOMATIC HIGHWAY CROSSING WARNING SYSTEM

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes specifications for designing, furnishing, and installing Highway-Rail Grade Crossing Warning systems as specified herein and shown on the Contract Drawings.

B. The Contractor shall provide and install crossing gates and mechanisms, flashing lights, bells, signs, and all of the associated control equipment at all of the crossings.

C. The Contractor shall visit each crossing with state and local regulatory bodies to review the layout of each crossing.

D. Related Requirements:

1. 344200 General Signal Requirements
2. 344252 Commercial Metered Power Services
3. 344258 Signal System Testing
4. 344266 Signal Drawings and Record Plans.

1.3 GENERAL

A. This Section specifies the work to be performed by the Contractor which consists of designing, furnishing, installing, testing, and placing in service the upgrade to Automatic Highway-Rail Grade Crossing Warning (AHCW) systems at the locations listed within the Scope of Work Section of these specifications.

B. The Contractor shall provide all labor, material, equipment, and hardware required for safe and reliable operating AHCW System as described herein and shown on the Contract Drawings. The existing grade crossing warning control system at Dave Rawls Blvd that currently activates the warning devices at each of these crossings shall remain in place, except where control equipment is specified for upgrade.

C. The Contract Drawings provided are representative only of the general principles and concepts upon which the Contractor shall base their design. The Contractor is responsible for the specific layout and location of AHCW equipment proposed for installation.

D. The Contractor shall provide protection-in-place of all existing and new equipment during construction. The Contractor shall replace all equipment and facilities damaged during construction with new in-kind equipment and facilities at no cost to the Contract.

1.4 QUALITY ASSURANCE

A. The design and workmanship of the apparatus shall comply in every respect with the "Rules, Standards and Instructions for the Installation, Inspection, Maintenance and Repair of AHCW Systems," as set forth by the latest edition of Federal Administration (FRA) Highway Grade Crossing Rules and Regulations Governing Testing Maintenance and Inspection, latest edition.

B. The Contract Drawings illustrate the final conditions at these crossings. These plans are intended to illustrate the layout criteria necessary to implement the basic requirements of the Contract. It shall be the Contractor's responsibility to finalize the system design, receive approval of the EIC and provide as-built and record drawings after acceptance of work by the JAXPORT and by the state or federal regulatory authorities having jurisdiction for review and approval.

C. The AHCW system and all its elements shall be of the most modern type, including the latest equipment versions and designs, which shall provide the highest degree of safety and reliability for train service. The AHCW system shall be so designed as to meet all the applicable Signal Manual Parts of the American Railway Engineering and Maintenance Association (AREMA), except that where the word "may" appear in the Manual, as part of a directive, the word "Shall" is to be substituted.

D. Unless otherwise specified herein, all items furnished and installed under this Contract shall be in accordance with applicable sections of AREMA, Institute of Electrical and Electronic EICs IEEE, NEMA, FRA Part 234 and 236, Manual on Uniform Traffic Control Devices (MUTCD) Part VIII, and of JAXPORTs standards, practices, and recommendations. In cases of conflict the priority shall be:

1. Federal, State, and local laws and regulations
2. Manual on Uniform Traffic Control Devices (MUTCD)
3. State and Local Permits
4. Contract Drawings
5. Contract Specifications
6. JAXPORT Standards
7. AREMA Communications & Signals Recommended Practices
8. Institute of Electrical and Electronic EICs (IEEE) Standards
9. NEMA Standards

E. All apparatus, and all other miscellaneous components that form a complete system, shall be furnished completely factory wired and tested.

F. The Contractor shall complete the testing and inspection of the equipment prior to shipment in accordance with the approved Factory Test and Inspection Procedure.

G. All components and products provided under this Contract shall be new and free of manufacturing defects and shall be clearly and permanently labeled with value and type.

H. All electrical components shall be rated to operate at power, voltage, current, and temperature levels exceeding by 20 percent those which the components will be subject to in service, unless otherwise specified herein.

1.5 SUBMITTALS

A. Submittals will be reviewed for general conformance with the intent of the Contract Documents only. This review will not relieve Contractor of final responsibility for the means, methods, procedures, and sequences to be utilized. All submittals shall comply with the Submittals section of these specifications.

B. The Contractor shall submit the following for approval:

1. Catalog cuts, shop drawings, fabrication drawings and descriptive literature for all equipment and material proposed to be furnished under this Contract shall be shown in accordance with a detailed bill of materials on a per location basis.

2. Every submittal must clearly identify the intended use and proposed application of submitted material for submittal to be reviewed. Submittals that do not comply with this requirement will not be reviewed and will be rejected regardless of the contents.

3. The assembly drawing of each AHCW layouts.

4. Detailed installation drawings for each layout indicating the specific location, equipment dimensions and distances to roadway and JAXPORT elements.

5. The sizes and types of all cables and internal wire that the Contractor proposes to furnish and install.

6. Drawings showing the existing as-in-service (AIS) circuits and wiring diagrams shall be field verified prior to beginning of construction to ensure accuracy. Any inconsistency between existing drawings and actual installation shall be addressed with the JAXPORT representative on site, marked on the field copy retained inside the housing and on the copy of project AIS drawings.

7. The Contractor shall submit drawings showing proposed modifications to the existing crossing layout and circuits, including proposed modifications to the existing equipment arrangement within instrument housing if required to install approved equipment.

8. All work shall be performed in accordance with approved circuits, detail plans and installation drawings. After completion of installation, testing and placing in the Contractor shall provide one set of revised marked-up plans and test forms to remain inside the instrument housing and shall submit another set for approval.

1.6 DELIVERY, STORAGE AND HANDLING

A. All equipment shipped shall be properly fastened and braced to prevent damage during transit. Any equipment damaged during transit shall be replaced at no additional cost to the Contract.

B. Batteries shall be shipped filled to the correct level and in a fully charged state. Each battery shall be equipped with transit plugs, or rubber stoppers, to prevent spillage of the electrolyte. Batteries shall be shipped separately from the housing.

C. All cable shall be shipped on reels, adequately protected from damage in shipment by heavy wrapping or wood lagging to avoid the reels moving obliquely against each other. The manufacturer shall also be responsible for any change in the shape of the cable occurring in normal transit which results in an increase in the maximum diameter beyond that specified. The external protective wrapping on reels shall be secured by at least two steel bands to ensure damage free shipment.

D. Each length of cable shall be wound on a separate reel. Reels shall be able to withstand handling and shall be so designed that the inner end of the cable is secured and accessible but protected from injury. If the inner end of the cable projects through the flange of the reel, the inner end shall be protected by a suitable cover of metal having rounded ends and sides and securely fastened in place to protect the cable end. Both ends of cable on reel will be secured in place, to prevent their becoming loose in transit or handling of reel. The diameter of the reel drum shall be at least (14) times the cable diameter to prevent damage to the cable during reeling. The arbor hole shall admit a spindle 2-1/2 (two and a half) inches in diameter without binding. The reels shall be designated and constructed as nonreturnable when drum size and cable weight and volume permit. The maximum width of reel shall not exceed 48 inches unless otherwise specified.

E. After passing factory tests, cable shall be effectively sealed against the entrance of moisture. Both ends of each length of cable shall be protected by wrappings of rubber tape and plastic tape, an effective boot taped or sealed into place, or other suitable means approved by the EIC. The use of friction tape, other than an external mechanical protection over an adequate rubber and/or plastic tape, will not be accepted. The cable end protection will be adequate to protect the cable in shipment and prolonged external storage in the weather if not immediately employed without regard to the position of the reel while so stored.

F. Cable shall be closely and tightly wound, in a uniform manner, in each layer on reels. An arrow shall be painted on one head of each reel pointing the opposite direction from the outer end of the cable with the words "Roll This Way" employing letters not less than 3/4 inch height and an arrow not less than six inches in length and 1/2 inch in width.

G. LED units shall be packaged separately from flashing light units in which they are to be used.

PART 2 - PRODUCTS

2.1 GENERAL

A. All equipment specified herein shall be manufactured and supplied by one manufacturer as a complete system package unless otherwise approved, to ensure proper integration of components into a complete highway crossing signal layout. Manufacturers shall be Alstom, Siemens, Western Cullen Hayes, Hitachi Rail (Ansaldo STS) or approved equal.

B. Highway crossing warning equipment shall meet the requirements established by AREMA Signal Manual, Automatic Highway-Rail Grade Crossing Warning Systems, Part 3.3.1, and Recommended Functional/Operating Guidelines for Control of Automatic Highway–Rail Grade Crossing Warning Systems, Part 3.1.15, except where such instructions and requisites conflict with this specification.

C. FLASHING LIGHTS SIGNAL LAYOUT

1. The flashing light signal layout shall be equipped with a standard reflective Railroad Crossing Sign (crossbuck), flashing light units, and, where required, electronic bell and number of tracks sign as specified herein and shown on the Contract Drawings.

2. The flashing light signal shall be 12-inch LED uniform look type in accordance with these specifications and also conform to AREMA Signal Manual, Parts 3.2.5, 3.2.35 and 3.2.50.

3. Flashing light signal assemblies shall be double direction back-to-back or single direction as shown on the Contract Drawings and shall be provided complete with new cross arms, junction boxes, elbows, brackets including all required mounting hardware.

4. Each lamp housing shall be constructed of a rigid material which is not affected by atmospheric conditions or by changes in temperature as defined by Class B in AREMA manual part 11.5.1. A protective finish shall be applied to housings made of materials susceptible to corrosion, weathering, and degradation from ultraviolet rays or other elements identified in Class B in AREMA manual part 11.5.1. The housing shall be equipped with a door with front access, hinged at one side with a weatherproof seal. A ventilation opening shall be provided at the bottom of the housing and covered with brass, or copper, wire screen. A sidelight shall be provided on both sides of the lamp housing complete with gasket, lens, and retainer.

5. All masts shall be 16' minimum height, 5” diameter (except when otherwise indicated in these Contract Documents), of aluminum construction complete with pinnacle cap and aluminum split base junction box. Pinnacle cap will not be required when bell is used.

6. The Contractor shall ensure that the crossing masts provided are of sufficient height to maintain the required minimum clearances and support the multiple flashing light and gate configuration of each layout. A strip of ASTM Type III or Type V retroreflective white material not less than two inches in width, shall be used on each mast for the full length of the front and back of the mast from the crossbuck sign or number of tracks sign to junction box base, unless otherwise directed by the EIC.

7. The LED signal module shall be 12 inches in size and shall have either a clear or red lens. White LED sidelights shall be included. Any gasket or similar sealing material shall be made in accordance with AREMA Manual Part 15.2.10 (Recommended Functional Guidelines for Gasket Material Suitable for Circuit Controllers, Signal Cases and Other Signal Apparatus Housings).

8. The LED signal module shall operate over an ambient temperature range of -40ºF to 158ºF per AREMA part 11.5.1. It shall be protected against dust and moisture intrusion as per the requirements of NEMA Standard 250-1991, Sections 4.7.2.1 and 4.7.3.2, for Type 4 enclosures.

9. The LED signal module shall meet mechanical vibration and shock requirements as per AREMA Signal Manual Part 11.5.1., and the lens shall be UV stabilized.

10. Cross-arms for flashing light units for signal layout without gate shall be in accordance with AREMA Drawing, Part 3.2.50 as approved by the EIC.

11. Railroad Crossing Signs (Crossbuck R15-1) shall be white reflex-reflective sheeting on sheet aluminum with the words 'RAILROAD CROSSING' in black letters, and a 5 inch reflective stripe on the rear, in accordance with MUTCD, Chapter 8B, Section 8B-03.

12. Number-of-track signs shall be constructed of aluminum alloy and be corrosion resistant. Black letters and numbers on a white background shall be of reflex-reflective sheeting on sheet aluminum.

13. Signal malfunction / Emergency Notification signs R15-4, I-13, or I-13a shall be in accordance with Chapter 8, Section 8 B.09 of the latest version of the Florida MUTCD.

14. Flashing light signal assemblies shall have uniform look and shall be as manufactured by GE Lighting (RG6), Western Cullen Hayes (WCH) Model 985-801, Alstom Signal Type AURORA, Siemens (Safetran) FLX-4000 LED, Hitachi Rail (Ansaldo) Type HC-120, or approved equal.

15. Electronic bell shall be provided with a weatherproof housing and installed at the top of the mast instead of pinnacle at location shown on the Contract Drawings and approved by the EIC. The housing shall be constructed of aluminum. The bell shall conform to AREMA Signal Manual, Part 3.2.61. Normal operating voltage shall be 10 volts dc. Electronic Bell shall be as manufactured by General Signals, Inc. or approved equal, shall have no moving parts and the sound shall closely resemble sound and volume of mechanical bell. It shall be controlled by the same AHCW equipment as mechanical bell and require no additional wiring.

D. AHCW GATE LAYOUTS

1. AHCW gate layouts shall be complete with gate mechanism, gate keepers, gate arm, counterweights, LED gate arm lights, high-wind brackets, mast mounted flashing light units, railroad crossing signs, number of track signs, extension brackets for signs, and, where required, bell(s). For gates that do not require a bell, the signal mast shall have a pinnacle together with all necessary hardware as specified herein, in accordance with AREMA C&S Manual, Part 3.2.15, and as shown on the Contract Drawings.

2. The ground-mounted mast for supporting a gate mechanism shall be constructed of five inch diameter aluminum pipe, complete with pinnacle cap and cast aluminum split base with double sided junction box. Junction boxes shall be provided with AREMA terminals, gaskets, and provisions for padlocking both sides. The gate mechanisms shall be supplied with an internal wiring diagram protected by a plastic laminate and shall be fastened to the inside of mechanism cover. Binding posts, nuts, washer, and insulators shall conform to AREMA C&S Manual, Part 14.1.11.

3. The highway crossing gate mechanism shall be Siemens (Safetran) S-40 model, Western-Cullen-Hayes, model 10 layout with mechanism 3597 or approved equal. Mechanism shall include 115VAC nominal heater element to prevent formation of frost on controller contacts. The Contractor shall refer to gate mechanism manufacturer’s wiring requirements to ensure that required operational voltage does not drop below the voltage specified by the manufacturer.

4. The general design, painting and striping of the gate arm shall conform to AREMA C&S Manual, Part 3.2.20 or 3.2.24. The striping shall consist of 16-inch alternate reflectorized red and white stripe on both sides of the arm. The arm shall be constructed of non-conductive fiberglass and be designed to ensure reasonable durability and rigidity to prevent undue sway or whipping. The clearance between the gate arm and any fixed portion of the assembly shall be a minimum of two inches.

5. The highway crossing gate arms shall be of sufficient length to extend to within one foot of the centerline of the roadway but in no case less than 90% of the roadway width and provide a minimum clearance of two feet from overhead wire and cable.

6. All roadway gates shall be equipped with high wind support devices. The wind support devices shall be as specified in AREMA C&S Manual, Part 3.2.22.

7. All roadway gates, except those mounted on cantilevers, shall be equipped with self-restoring gate arm devices. The self-restoring gate arm devices shall be as specified in AREMA C&S Manual,

Part 3.2.23 and shall operate with a gate 32 feet or less in length. The self-restoring gate arm devices shall be by-directional and shall allow for arm rotation parallel to the roadway for maintenance as manufactured by Western Cullen Hayes “Gate Gard”, National Electric Gate Co. “Gate Saver”, and General Signal Industries “Gate Keeper” or approved equal. Additional counterweights shall be provided as required.

8. Ten volt weatherproof, bi-directional LED gate arm lights shall be provided in accordance with AREMA C&S Manual, Part 3.2.40 with highway crossing red lenses. Gate arm lights shall be adjustable to permit focusing of lights at gate installations parallel to the tracks but not perpendicular to the roadway.

9. A mechanism support shall be furnished with each gate mechanism. The mechanism support shall provide a base upon which the gate mechanism rests and shall support the weight of the mechanism when it is necessary to swing the mechanism and gate for repairs. Mechanism support shall be similar to WCH 3565-380A, or approved equal, and shall be complete for mounting on a 5" pipe.

10. Crossarms for flashing light units installed on the signal with mast shall be constructed of cast aluminum and shall be in accordance with AREMA Signal Manual, Part 3.2.50 and Part 3.2.51, as approved by the EIC.

E. WIRING

1. Internal wiring for vital circuits shall be in accordance with applicable AREMA Signal Manual Parts, unless otherwise specified herein. No. 16 AWG 19 strand flexible wire shall be used for all circuits, except for No. 10 AWG, or larger, flexible stranded shall be used for signal lighting, track connections to the main terminal board and battery and rectifier bus circuits. Solderless terminals, for stranded wire, shall be in accordance with these specifications.

2. Solid terminal connectors shall be used for all short terminal jumpers.

F. WIRING RACEWAY

1. All internal enclosure wiring shall be contained within surface mounted plastic raceway. Raceway shall be of a polycarbonate, low smoke type with a solid snap-on cover and flexible side walls. The side walls shall be of “finger” type construction allowing for insertion and removal of wire runs with terminations attached. Sizes shall be determined by the manufacturer. Fill capacity shall not exceed 40%.

G. PAINTING

1. The exterior of non-aluminum housings shall be painted in accordance with AREMA Signal Manual Part 1.5.10. The finish color shall be aluminum. The battery trays shall be painted with two coats of acid-resistant black paint.

2. All paint shall be fire retardant.

H. POWER OFF AND EQUIPMENT STATUS INDICATION LIGHTS

1. The Contractor shall design, furnish, and install a power-off indication lights on both sides of new and existing instrument housings to be visible to the train crew. The control circuit shall include

Power Transfer relay or other proposed and approved method of power-off indication. It shall be installed inside instrument housing and shall keep the power-off lights lighted when power is on.

2. Power-off indication lights shall be twelve-volt LED. Lights and bases shall be mounted inside the crossing instrument housing behind a single "fisheye" Lexan lens equipped with a gasket and a silicon seal to weatherproof the opening in case wall.

3. The Contractor shall submit and obtain approval of the proposed power indication system prior to providing equipment.

I. TRAIN DETECTION

1. The Contractor shall provide new PMD-4/4R Motion Detecting equipment as manufactured by Alstom or approved equal at as part of the new crossing control system at Intermodal Drive and Dave Rawls Blvd as specified within Scope of Work.

2. At Dave Rawls Blvd the existing Style "C" equipment shall be replaced with new PMD-4/4R system for the purpose of replacing the outdated equipment at that location.

3. The motion detecting equipment provided shall include train motion detection, crossing island train detection, vital inputs monitoring and vital relay drive output control. The motion detecting equipment shall have provisions for expansion to wireless crossing control and prediction capabilities with the optional selective function upgrade.

4. Motion Detector shall have a built-in recorder that logs time-stamped vital and non-vital events as well as state changes, crossing performance data, and failures/reset information. All recorded events shall be user printable both track-side and in the office.

5. The Motion Detector shall consist of a central processor, track and I/O controllers, communications interface, and LCD display with keypad/button interface. Front panel indicators display module shall provide health status and indicators for monitoring active I/O signals.

J. SOLID STATE CROSSING CONTROLLER

1. Vital control logic and circuiting shall be implemented in a solid-state crossing controller such as the SSCCIV as manufactured by Siemens (Safetran) or approved equal. The functioning of the Controller is described in this Specification as if the functions were implemented using discreet components, but the logic shall be implemented using the Controller.

2. A solid-state crossing controller shall be provided for each AHCW location as indicated on the Contract Drawings. The solid-state crossing controller shall meet all requirements of the FRA 234 rules for Highway/Rail grade Crossing Warning devices and AREMA C&S Manual, Part 3.1.25 and Part 3.1.15 as approved by the Authority.

3. The crossing controller shall be fully integrated, vital, solid state circuitry device, providing control operation to lamps, bells and crossing gates.

4. The crossing controller shall provide a voltage adjustment feature. The output voltage once adjusted shall be constant.

5. The solid-state crossing controller shall be voltage surge protected.

6. The lamp flash rate shall be 45 to 50 flashes per minute.

K. MANUAL CONTROL BOX (CUT-OUT SWITCH)

1. The Contractor shall furnish and install a Manual Control (MC) Box, mounted on the roadway side of the instrument housing.

2. MC Box shall contain a three-position control switch for placing the operation of the crossing in Test, Normal and Override state of control. The labels “Test” on the left, “Normal” in the middle and “Override” on the right shall be installed to correspond to switch operation positions.

3. The MC Box shall be of cast iron or cast aluminum construction, complete with a hinged and gasketed door to provide a dustproof and weatherproof seal.

4. The method of mounting the MC Box on the side of the instrument housing shall provide a weatherproof seal (gasket and a silicon seal) between the back of the MC Box and the side of the SIH or Instrument Case. A pipe nipple with locknuts and bushings, or similar approved means, shall be provided between the inside of the housing and the inside rear of the MC Box to house and protect the flexible internal wiring between the housing and the terminals on the control switch within the MC Box.

5. An approved means of securing and locking the door with a standard padlock shall be provided.

6. A pocket shall be provided on the inside of the MC Box door to hold the Crossing Test Record booklet.

7. The MC Box shall be fitted complete with an internal face-plate panel marked “Manual Control". The panel shall be made from one-quarter inch black micarta, satin finish. The letters shall be etched and filed with an approved white pigment.

8. A warning sign shall be placed above the switch that reads “PLACING CROSSING CONTROL SWITCH IN OVERRIDE POSITION COMPLETELY DISABLES THE CROSSING WARNING SYSTEM. NOTIFY PROPER AUTHORITY PRIOR TO OVERRIDE”.

9. The labels “Test” on the left, “Normal” in the middle and “Override” on the right shall be installed to correspond to switch operation positions.

10. The wire terminations on the switch within the MC Box shall be identified with tags, as specified. These tags shall indicate the nomenclature of the wire.

L. FOUNDATIONS

1. Precast Concrete Foundations shall be made of concrete of average compressive strength of 5000 p.s.i. and be in accordance with the applicable drawing section of Part 14 of the AREMA Signal Manual for the type of precast foundation required. Precast concrete foundations shall be steel reinforced. Reinforcing steel shall be placed not less than one inch from any outside surface.

2. Bolts, Nuts, and Hardware

   a. Bolts, nuts, and washers shall be galvanized. Nuts and threads shall be in accordance with AREMA Specifications for Bolts, Nuts and Threads, Signal Manual, Part 14.6.20.

b. Plain washers shall be in accordance with AREMA Specifications for Plain and Spring Lock Washers, Signal Manual, Part 14.6.21. Steel shall be in accordance with AREMA Specifications for Various Types of Steel, Signal Manual, Part 15.1.4, Section 1.

3. Finish and Curing of Precast Foundations - Proper control of the water-cement ratio, high frequency vibration and controlled curing shall be used. An air entraining agent shall be used to increase the resistance to weathering. All outside surfaces shall present a smooth and finished appearance.

M. MISCELLANEOUS PRODUCTS AND COMPONENTS

1. Signal Terminal Connectors

a. Signal system terminal connectors shall be in accordance with the applicable requirements of AREMA Signal Manual Part 14.1.15.

2. Signal Terminal Binding Posts

a. AHCW system terminal board binding posts, required for supervisory control circuits, shall be in accordance with AREMA Signal Manual Part 14.1.10.

3. Terminal Post Insulators

a. All terminal posts, located on terminal boards in the SIH or Instrument Case used to terminate 55, or greater, ac or dc volt circuits shall be provided with a protective insulator.

b. The type of insulator shall be individual for each terminal post and shall be fire-resistant.

c. Insulated test links shall be Type 0255-101 as manufactured by Western-Cullen-Hayes, Inc. or approved equal.

4. Lightning Arresters and Equalizers

a. Lightning arresters and equalizers shall be mounted on three post porcelain or approved type base and shall be in accordance with AREMA Signal Manual Part 14.1.7.

5. Terminals for Wires and Cables

a. All solderless terminals shall be in accordance with AREMA Signal Manual Part 14.1.1, or as specified herein.

b. Terminals shall be of the solder-less crimp-on type. Samples of all solderless terminals shall be submitted for approval.

c. All stranded copper wire shall be fitted with an approved type of terminal at all points where the wires are to be terminated on terminal binding posts.

d. The terminating means shall be of five types:

1) a lug for terminating heavy wires or signal power wires;

2) a solder-less insulated terminal as manufactured by AMP, Inc. under the trade name of "Ring Tongue Plasti-Bond," similar to Catalog No. 35628, or approved equal, for terminating No. 16 and No. 14 AWG stranded wires;

3) a solderless insulated terminal similar to AMP Catalog No. 35627, or approved equal, for terminating insulated wires Nos. 12-10;

4) a solderless insulated terminal similar to AMP Catalog No. 324108 for terminating other stranded vital circuit insulated wires Nos. 20-16 AWG having a maximum diameter of 0.200 inches;

5) a solderless insulated terminal, AMP Catalog No. 320554, or approved equal, shall be furnished for No. 8 studs and AMP Catalog No. 320571, or approved equal, shall be furnished for 1/4 inch studs for non-vital circuit insulated stranded wires Nos. 22-16 AWG having a maximum diameter of 0.125 inches.

e. Where flag-type terminals are required, they shall be similar to AMP Catalog No. 322313, or approved equal, for terminating No. 16 and No. 14 AWG stranded wires. Other pre-insulated terminals shall be similar to those shown in AMP Product Bulletin No. 109-1.

f. The terminals shall be for attaching to the ends of the conductor in such a manner that the flexibility of the conductor will not be destroyed and the possibility of breakage at the terminal will be reduced to a minimum.

g. Terminals shall be for attaching to the wire with a tool made by the manufacturer of the terminal and recommended by the manufacturer for the terminals being furnished.

h. The tool shall be equipped with a ratchet device to ensure proper indentation of the terminal and which will not release until proper indentation is complete.

6. Tagging for Cables, Wire, and Equipment

a. Except as otherwise specified in this Section, both ends of each cable and each cable wire and all single wires that terminate in the cases, junction boxes, gate mechanisms, instrument housings on entrance racks, and any equipment of the AHCW system outside of such locations shall be permanently identified with a tag. Tags shall not obscure connecting links used between terminal binding posts. Tags shall be installed so that they may be read with a minimum of disturbance of the tags and wiring. Each conductor of the cable shall be rung out and identified before applying the tag.

b. Tags for wire and cable identification and for identification of transformers, resistors, reactors, and other components shall meet the following requirements and shall be subject to the approval of the EIC:

1) Sleeve Type Tags

a) Tags for identification of individual cable conductors and field-installed wires within instrument housings, base of signal junction boxes, and similar applications shall be the sleeve type as manufactured by Raychem Corporation, Thermo-fit Marker System (TMS), W. H. Brady Co., Brady-sleeve (XB-321, -322, -323), or approved equal. The application of the conductor nomenclature shall be in accordance with the

manufacturer's instructions and shall result in a permanently bonded and legible identification.

2) Flat Plastic Tags

a) Tags for identification of vital relay plug boards, individual transformers, resistors, reactors, terminals, and other miscellaneous components within the cases or SIH shall be the flat plastic laminated type.

b) These tags shall be 1½ inches long by 3/4 inch wide with one, 5/16 inch hold located in the center of the width. The distance from the edge of the tag to the hole shall be approximately 9/32 of an inch. The untreated tag shall be milk white "vinylite," or approved equal.

c) The identifying nomenclature space shall allow for three rows of lettering, and the tag material shall be capable of receiving typed-on characters by conventional means. The height of the lettering shall be not less than 1/8 inch.

d) After lettering, both the face and back side of the tag shall be covered with a clear plastic coating, "vinylite," or approved equal, of at least 0.01 of an inch thick.

e) The nomenclature applied to tags to go on entrance racks and boards shall show the terminal post identification on the top line. The functional nomenclature shall appear on the bottom line, or, if required, on the middle and bottom lines. The terminal posts shall be identified by geometry coordinates, such as rack, row, and post number.

3) Wrap Around Tags

a) Tags for identification of the individual wires of plug-in relays, within the SIH or Instrument Case and the wayside cases, shall be the wrap around, self-adhesive type.

4) Flag Marker Tags

a) Tags for identification of individual wires of shelf-mounted relays, and wires and conductors in junction boxes, shall be flag marker tags of the miniature locking type.

5) Pressure-Sensitive Labels

a) The rows and columns on entrance racks shall be identified by pressure-sensitive labels bearing the geometric coordinates.

b) Wires on plug-in vital relays shall be identified by the contact to which they are applied. These tags shall be wrap-around self-adhesive type.

7. Hardware

a. All mounting hardware exposed to the elements and used for signal equipment, cases, conduit, hangers, brackets, clamps, etc., shall be hot-dip galvanized, except as otherwise approved by the EIC.

1) Galvanizing

a) The hot dip process of galvanizing shall be used. All parts shall be pickled so that all scale and adhering impurities will be removed. The zinc coating shall be of commercially pure zinc and shall be continuous and thorough. It shall not scale or blister or be removable by any of the processes of handling or installation. The finished surface shall be free from fine line cracks, holes, or other indications of faulty galvanizing. It shall be smooth and free from adhering flux and other impurities. The edges and ends of parts shall be free from lumps and globules. Parts shall be coated with at least 2 ounces of zinc per square foot of galvanized surface, after all bending, cutting, drilling, and final fabrication.

b) In order to avoid destruction of resilience encountered in the hot dip process of galvanizing, all lock-washers shall be cadmium plated.

c) All galvanized mounting hardware nicked during construction shall be painted aluminum and coated when dry with a non-oxide grease to prevent corrosion.

2) Cadmium Plating.

a) All nuts, bolts, and washers used for the mounting of equipment within finished enclosures shall be cadmium plated or stainless steel. As an alternate, the Contractor may submit another type of plating or non-corroding metal for the EIC's approval.

b) Cadmium plating shall be an impervious, dense, hard, fine grained, continuous, closely adhering coating of commercially pure cadmium, free from capillaries and shall completely cover the surface of the part in a smooth, bright layer. Plating on raised or prominent portions shall show no evidence of blackness or loose crystalline structure. It shall have a minimum thickness of 0.0006 of an inch and shall withstand the salt spray test for at least 1,000 hours or an equivalent test approved by the EIC.

8. Padlocks and Keys

a. Signal padlocks and keys shall be furnished and installed for all housing or case doors and covers of signal equipment installed under this Contract. Switch padlocks shall be furnished and installed for manual control boxes requiring access by train crews. The Contractor shall obtain from the JAXPORT the proper ordering references for the JAXPORT's signal and switch padlocks.

9. Sealing Compound

a. Sealing compound for use in sealing cable entrances shall be in accordance with AREMA Signal Manual Part 15.2.15.

10. Cable Entrance Pipes

a. Cable entrance pipes for ground-mounted AHCW instrument housing shall be 6 inch schedule 40 PVC pipe, 3 feet long with bell housing on one end, unless otherwise approved by the EIC.

11. Paint and Finish

a. All paint and painting procedures shall be in accordance with applicable requirements given in AREMA Signal Manual Part 1.5.10 where the AREMA requirements do not conflict with any requirements of the specifications.

12. Ground Rods, Welds, and Wire

a. Ground rods shall be copper-clad steel, of the non-rusting type, as manufactured by Copperweld Corporation or approved equal. The rod shall be at least 10 feet in length and at least 5/8 inch diameter.

b. All ground wire connections to ground rods shall be of exothermic weld type as manufactured by Erico Corporation or approved equal. No mechanical connections are permitted.

c. Internal ground wire from the equipment to the ground bus shall be insulated No. 6 or 10 AWG stranded copper wire. Insulated ground wire shall be colored green.

d. A grounding bus of nickel-plated hard-drawn pure copper shall be provided in each crossing house or case. The minimum dimensions of the bus shall be 8 inches by 8 inches by 1/2 inch thick. A minimum of twelve 3/8 inch holes shall be drilled and taped in the bus and twelve (12), 3/8 inch by 1/2 inch long hex head nickel plated bronze studs with one washer each shall be installed.

13. Signal Transformers

a. Signal transformers shall be in accordance with the latest revision of AREMA Signal Manual Part 14.2.10 for single-phase transformers, where the requirements do not conflict with any requirements specified in this Section.

1) General Signal Transformers

a) General signal transformers shall be provided with sufficient primary and secondary voltage taps to adjust between 85 and 110 percent for varying feeder voltages. All transformers shall be rated to carry 125 percent of the total load continuously.

b) The primary and secondary taps shall be brought to terminals mounted inside the transformer case, and a connection for each secondary tap and at least two connections for the primary winding shall be brought out of the transformer to AREMA terminals, or other approved bushings and terminals. All terminals shall be identified.

2) Signal Lighting Transformers

a) Signal lighting transformers shall be equipped with taps to provide output voltage adjustment in one volt steps, from 6 to 15 volts. The primary excitation voltage shall be 120 volts ac at 60 Hz.

N. CONDUIT

1. Contractor shall install two (2) four-inch (4”) Schedule 80 PVC conduit parallel with the track and one (1) four inch (4”) galvanized rigid steel (GRS) conduit perpendicular to the track at each at-grade crossing location for signal cables use per the Contract Plans and, or as directed by JAXPORT. PVC conduit shall be ten (10) feet from the edge of the roadway on both sides and

parallel to the track and the GRS conduit shall be located ten (10) feet off the crossing surface edge and perpendicular with the track and or as directed by the EIC. A two feet minimum distance between roadway and track conduits shall be provided to accommodate bending radius of cables. A minimum of three feet of cable shall be looped at cable transition between conduits.

2. Contractor shall submit proposed end of conduit location finders, i.e. stakes, ribbons, etc., for review and approval. Contractor shall mark ends of the conduit with approved marking devices.

    a. Rigid

        1) Rigid conduit shall be used at locations as specified herein and as shown on the Contract Drawings, specifically steel conduits shall be used for cable installation under tracks. The types of rigid conduit to be used for the various applications shall be as follows:

            a) Steel conduit shall be made of the best grade standard weight steel pipe protected inside and outside by a coat of hot dip galvanizing. Where elbows are used, they shall be long radius type. Steel conduits shall be protected in shipping and handling by approved thread protectors.

            b) Contractor shall size conduit in accordance with National Electric Code (NEC). Submit fill calculations utilizing one or more trade size 4" conduits for review by the EIC.

    b. Schedule 80 PVC

        1) Schedule 80 PVC conduit shall be used at locations as specified herein and as shown on the Contract Drawings, specifically PVC conduit shall be used for cable installations under the roadway. The types of PVC conduit to be used for the various applications shall be as follows:

            a) Four inch diameter, thick-wall polyvinyl-chloride conduit, High Impact Schedule 80, herein referred to as PVC conduit.

            b) The top of conduits placed under existing grade or paving other than track shall generally be 30 inches minimum below top of final grade.

    c. Flexible Conduit and Hose

        1) Hose for track circuit leads installation shall be Valuflex/GS as manufactured by HBD Thermoid Inc. and shall be made of multiple plies of rubber spiral polyester fiber and EPDM tube or approved equal.

        2) Metallic Flexible Conduit. Where the EIC permits, the use of metallic flexible conduit shall be Type UA or approved equal.

    d. Fittings

        1) Approved PVC fittings shall be used for PVC conduit. All fittings for rigid steel conduit shall be of cast malleable iron and shall be protected by hot-dip galvanizing.

        2) Expansion joints for PVC conduit, if required, shall be EIC-approved.

O. BATTERY TRAYS

1. The Contractor shall furnish battery trays for installing batteries inside signal instrument enclosure in accordance with Contract Documents in accordance with batteries proposed by the Contractor. Alternative designs of polyethylene may be submitted for consideration.

P. BATTERY CHARGING EQUIPMENT

1. Design Requirements

   a. Two battery banks and charging equipment shall be provided. One bank shall be used for crossing control circuits and another bank shall be used for wayside signal equipment. A separate battery bank shall be used for electronic track circuits if required.

   b. Battery charging equipment shall be a microprocessor-based design for continuous operation, shall provide constant current and constant voltage charge and shall meet the requirements of AREMA Signal Manual, Part 9.2.5.

   c. Battery charging equipment shall be designed to deliver rated outputs with an input voltage of 100 to 130 volts ac at 60 Hz, single phase, two-wire input.

   d. Battery charging equipment shall have a reserve capacity at least 25 percent above the calculated requirements.

   e. Each charger shall be provided with an adjustment device to change the rate of output current.

   f. Terminal markings for ac and dc terminals shall be permanent.

2. Track Battery Chargers.

   a. Track battery chargers shall provide constant current and constant voltage charge and shall meet the requirements of AREMA Signal Manual, Part 9.2.5. Chargers shall have a selectable float voltage to match supplied battery manufacturers requirements, as manufactured by National Railway Supply ERBC 5/5, or approved equal.

3. Battery Bank Chargers

   a. Battery bank chargers shall be fully adjustable rectifiers as manufactured by Cragg Type ETC, National Railway Supply Type ERBC, LaMarche Type A75 or approved equal.

   b. The Contractor shall furnish battery bank chargers for operating all equipment required to operate the connected equipment.

   c. The charger shall provide a stabilized output voltage, with output current limiting. The capacity of the battery charger shall be determined by the Contractor and approved by the EIC. The charger shall adjust its output current automatically according to the load and to the demand on the battery.

Q. STORAGE BATTERIES

1. The Contractor shall furnish storage batteries for all applications except as otherwise approved by the EIC.

    a. Batteries shall be maintenance-free, sealed JAXPORT signal batteries, designed for JAXPORT use as a standby source of power for highway crossing warning devices, signal control systems, and other similar uses as manufactured by EnerSys PowerSafe DDr 50 or approved equal.

    b. Battery must operate, with a high degree of reliability, -40ºF to +160ºF in a harsh environment, enclosed only in a relay house or raised concrete battery box.

    c. The battery shall not be capable of explosion under any condition, including a short circuit discharge.

    d. Batteries shall meet the requirements of AREMA Signal Manual Part 9.1.3, where the requirements of the Signal Manual do not conflict with any requirements specified in this Section.

    e. Battery Size and Application

        1) The following is a guide to minimum storage battery size. The Contractor shall calculate the loads based upon the equipment that the Contractor proposes to furnish. All batteries shall be sized for a minimum 24-hour standby capacity at an ambient temperature of 40°F.

            a) 80 AMP-Hour (minimum) - DC steady energy track circuit battery;

            b) 472 AMP-Hour (minimum) - XB12 battery for wayside equipment;

            c) 264 AMP-Hour (minimum) - Local MB12 battery.

    f. Physical Construction:

        1) Polypropylene container and cover.

        2) Projected design life of 20 years at 80 percent rated capacity.

        3) Individual cells (multiple cell groups or modules not allowed).

R. SIGNAL CABLES

1. General

    a. Vital signal cable furnished for this Contract shall meet AREMA C&S Manual Part 10.3.17, Recommended Design Criteria for Signal Cable, Armored and shall be of the highest quality, assuring durability for minimum life expectancy of 40 years. These cables shall be suitable for use in the environment to be encountered on a JAXPORT signal system and shall be certified for continuous operation at 75°C in wet or dry locations with no conductor failing in continuity or with loss of insulation to cross or ground less than one meg-ohm.

    b. Actual conductor size shall be calculated to suit distances and loads. Detail conductor sizes and cable makeup for application of Contractor’s final design. Submit voltage drop calculations and size conductors to provide minimum voltages specified in the AREMA

Communications & Signal Manual of Recommended Practices 3.2.15 (gates), 3.2.35 (flasher assemblies), and 3.2.61 (electronic bell) under maximum calculated load conditions. Sizing for conductors in remaining circuits shall allow no more than a five percent voltage drop between power source and load under maximum calculated load conditions.

c. Multi-conductor distribution cable containing more than two conductors shall contain a minimum of 10 percent spare conductors or two spare conductors, whichever is greater, except that two conductor cables will not require spare conductors.

2. Pre-qualification.

a. All cable manufacturers supplying cable for this Contract must be pre-qualified by the EIC. The Contractor shall provide all of the data required for the EIC's evaluation and shall make the arrangements for any required demonstrations and tests.

b. Qualifications shall be based on the following criteria:

1) Past Performance and Experience. The cable manufacturer(s) must demonstrate previous successful experience in supplying cable to the railway industry for use as vital signal control cables. A list of such installations shall be provided for each cable manufacturer to be considered.

2) Quality Assurance Program. The manufacturer of cables in accordance with the requirements of this specification shall be accomplished in compliance with a Quality Assurance Program that meets the intent of the ASQC Standard CI-1985; General Requirements for a Quality Program. Such compliance shall promote a thoroughly tested cable which will render the 40 year service life to the user. Prime concern must be focused on the necessary formal assurance requirements to ensure that cable failure cannot be attributed to actions or lack of actions by the manufacturer.

3) Technical Data. The Contractor shall provide full technical data which demonstrates compliance with the requirements of this specification for each specified cable type the Contractor plans to supply.

4) The manufacturer shall certify compliance with the following warranty prior to selection:

a) The manufacturer warrants that the design, material, and workmanship incorporated in each item of cable shall be of the highest grade and consistent with the established and generally accepted standards for aerial and underground cable for vital JAXPORT signal, communication, and power circuits; and that each such item and every part and component thereof shall comply with this specification.

b) The manufacturer agrees that this warranty shall commence with the acceptance of each item of the cable, whether the defect is patent or latent, and shall continue for a period of two years after initial satisfactory operation of the item or four years after acceptance of the item, whichever is shorter.

c) The warranty covering any length of cable that shall be replaced by the manufacturer under the above conditions shall be reinstated for a period of two years, effective as of the day when said replacement is affected. If the failure is found to be of major importance and affects any other item of cable, the reinstatement of the warranty shall

then be extended to cover the item so affected as well and shall start as of the date of such replacement. The warranty reinstatement provided herein shall apply only to the first replacement or repair of any such item and, in the case of failure of major importance, to the first extension of the said warranty to said affected items.

d) The foregoing warranties are exclusive and in lieu of all other warranties, written, oral, implied, or statutory (except as to title and freedom from lien). In no event shall the manufacturer be liable by reason of breach of warranty for special or consequential damages.

3. Quality Assurance.

a. The Contractor shall submit the following to the EIC for approval prior to shipment of the cable:

1) List of the cable manufacturer's railway signal installations.

2) Each cable manufacturer's Quality Assurance Program.

3) Full technical data for each type of cable which the cable manufacturer intends to supply.

4) The Contractor shall submit two certified copies of the following to the EIC for approval:

a) Cable test reports for all factory tests.

b) Test reports of cable tests conducted in the field in accordance with the approved testing procedures.

c) Certification that each cable supplied complies with the requirements of these specifications.

d) Information to be supplied by certified cable test reports shall include the following:

1. Report Number.

2. Date and location of test.

3. Description of test and test conditions.

4. Complete cable or wire description.

5. Lot, batch, or reel identification number.

6. Quantitative test results.

7. Summary of test results.

8. Information on the components of the cable tested, to include batch numbers and physical and electrical properties.

4. Trench Marker Tape.

a. The Contractor shall furnish trench marker tape for signal cable: bright red, six (6) inches wide, and continuously coded in black lettering with the following legend:

CAUTION CAUTION CAUTION

BURIED SIGNAL CABLE

5. Site Test Equipment and Materials.

a. All test instruments and equipment necessary to conduct the tests specified herein shall be available and ready-for-use not less than 48 hours in advance of test need. Ready-for-use shall mean properly matched for test parameters, properly calibrated, and supplied with leads, probes, adapters, stands, etc. necessary to conduct a particular test in accordance with FRA requirements.

b. All temporary or interim test related materials, special tools, connections, jumpers, etc. shall be furnished and available in advance of the test.

S. SIGNAL INSTRUMENT ENCLOSURE

1. The Contractor shall design, furnish, install, test and placed in service a complete factory-wired JAXPORT type signal instrument enclosure complete with all equipment necessary to provide train detection and control of AHCW equipment. Instrument enclosure shall include, but not limited to the following equipment:

- Utility power equipment.
- Meter enclosure on the side of the housing.
- Motion-based train detection and AHCW control equipment.
- Two (2) battery banks.
- Two (2) battery chargers.
- Power off indication LED light on each side of enclosure.
- Manual Control Box (test and cut-out switch)
- Fan with thermostat mounted to the enclosure side
- All other equipment and facilities required for safe and reliable operation of AHCW system.

2. The enclosure shall be as manufactured by PTMW or approved equal. The Contractor shall submit the following to the EIC for approval:

a. Shop drawings showing components, layout, and construction of wayside enclosures.

b. Site specific installation layouts, mounting and grounding arrangement of each enclosure.

c. Factory and Field Inspection Procedure.

3. The enclosure design shall prevent air penetration and shall be equipped with front and back doors. Doors shall be provided with handle and a three-point locking device to ensure that the door cannot be locked until it is completely closed. Provisions shall be made for locking with an approved standard hex keyed padlock.

4. Doors shall be provided with means for being secured in the 90-degree open position.

5. Each door shall be equipped with a plan holder of sufficient size to hold all record plans for the location.

6. The hinges for both doors shall be on the same side of the housing and shall be so designed that when the door is closed and locked, wear due to vibration shall be prevented. Hinges shall be separate castings, securely fastened to the housing and door. The hinges shall be equipped with bronze hinge pins, and fittings to allow lubrication. The manufacturer shall lubricate the hinges before the enclosure is shipped.

7. Instrument enclosure provided under this Contract shall be furnished complete with ratchet-style adjustable foundations, terminal board, power off LED lights, battery trays, cable entrance pipes, power equipment, grounding equipment and all miscellaneous parts and material required to provide a fully functional instrument enclosureto control the grade crossing warning equipment.

8. The Contractor shall inspect wayside enclosure after shipment prior to installation for defects and damage and after installation. Any deficiency found shall be reported to the EIC. The Contractor is responsible for replacing of any material or equipment that is damaged, lost, or stolen during the transport and installation of the wayside enclosure at no additional cost to the Contact.

9. Wayside enclosure shall be of 12-gauge sheet steel construction with a steel floor. The top and sides of the enclosure shall be lined with five resistant insulating materials complying with a flame spread of 0-20 and a fire rating of 7 in accordance with ASTM-E-84. Each wayside enclosure shall have knockout(s) for both aerial and underground cable entrance and shall be provided with fire-resistant ventilated openings in each side, lined with heat and cold insulating material and constructed to prevent sweating.

10. The Contractor shall submit for approval design, materials, and proposed methods of instrument enclosure installation, including proposed equipment layout.

11. Wayside enclosure shall be provided with a convenience outlet, switched porcelain base lamp holders, and 60 watts equivalent LED lights rated at 120 VAC located on both track and field sides. Convenience Outlet (Receptacles) shall be provided with a Ground Fault Circuit Interrupter (GFCI).

12. A three-eighths inch high tensile strength, silicon manganese bronze stud bolt for externally grounding the enclosure shall be provided. Perforations of sheet steel cases will not be permitted.

13. The exterior of the signal instrument house shall be painted in accordance with requirements of AREMA C&S MANUAL PART 1.5.10. The finish color shall be as directed by the EIC. The bottom of the signal instrument house shall be treated with a corrosion resistant undercoating. All paint shall be fire retardant.

14. Each enclosure shall be mounted on foundations level and plumb and fastened with the hardware provided. Trackside doors in the open position shall clear center line of the nearest running track by 8'-6" minimum and top of foundation level with top of rail unless otherwise approved by the EIC.

15. All grounding material shall be provided and submitted for approval.

16. Pipes for underground cable entrances shall be installed in the knockout holes provided in the rear of each enclosure. These pipes shall be secured to each enclosure by locknuts and insulating bushings.

17. Cables entering the instrument enclosure shall be dressed, pot headed, tagged, and terminated. All cable entrance pipes shall be sealed with approved sealing compound.

18. AC Power Supply:

    a. The Contractor shall design and furnish a new metered power service to the Signal Instrument Enclosure. The new service will be located on a new pole adjacent to the crossing instrument enclosure. The Contractor shall obtain all permits, licenses and agreements with the supplying Utility Company and is responsible for all coordination.

    b. Peak load calculation for meter service shall be provided by the Contractor. Actual power conductor size shall be calculated to suit distances and loads. Sizing for conductors shall allow no more than a five percent voltage drop between power source and load under maximum calculated load conditions.

    c. All power service materials and equipment installed shall conform to all applicable state and local ordinances pertaining to electrical power installations and the latest edition of the MEC.

    d. The Contractor shall provide and install cable for connection of the 120VAC, three wire feed from the meter to the utility tapping point. A sufficient cable slack shall be provided for the use by Utility Company. The meter and connections to the power line shall be provided by Utility company. Coordinate with the Power Company for any additional requirements.

19. Relay and Component Mounting

    a. Relay Plug-boards shall be designed for insertion of removable type contacts. The method of attaching the wires to the removable contacts shall be solderless connections. Unless otherwise approved by the EIC, or proven by type acceptance testing, the plug-board shall be designed so that the removable contact will have a direct connection with the contact and coil prongs.

    b. The plug-boards shall be in accordance with the applicable Sections of AREMA Signal Manual Part 6.2.2. All wires shall be of sufficient length to permit them to be moved to any contact on the same relay. The plug-boards for vital relays shall be equipped with a registration plate to prevent relays of the wrong type, contact arrangement, or operating characteristics from being inserted.

20. Identification

    a. There shall be an identifying nameplate for each relay, or other instrument mounted in the enclosure.

b. The relay plug-boards shall be equipped with a tag as specified herein. This tag shall indicate the nomenclature of the relay.

c. The contact numbering system shall be uniform for each type of relay used.

d. The wiring to each removable contact shall be identified with a wraparound tag as specified herein. This tag shall indicate the relay contact number assigned to the wire.

e. Wire and cable conductor identification tags for terminal board mounting shall be as specified herein.

f. External identification of the MCS shall be provided.

g. Provisions shall be made to locate spare wire conductors on dedicated terminal posts or lightning arresters, in line with the working conductors of any one cable.

h. Wire-wound resistors shall be spaced with 1/2 inch minimum clearance between adjacent resistors.

21. Cable Entrance Pipes

    a. Cable entrance pipes shall be provided.

22. Grounding

    a. A 3/8 inch high tensile strength, silicon manganese bronze stud bolt for externally grounding the enclosure shall be provided. Perforations of the enclosure will not be permitted.

    b. Internal ground bus arrangement shall be as specified herein.

23. Wiring

    a. Internal wiring for vital circuits shall be in accordance with applicable AREMA Signal Manual Parts, unless otherwise specified herein. No. 16 AWG 19 strand flexible wire shall be used for all circuits, except for No. 10 AWG, or larger, flexible stranded shall be used for signal lighting, track connections to the main terminal board and battery and rectifier bus circuits. Solderless terminals, for stranded wire, shall be in accordance with these specifications. Wiring for lights, switch and convenience outlets shall be insulated No. 12 AWG, flexible, THHN wire installed in EMT. Solid terminal connectors shall be used for all short terminal jumpers.

24. Wiring Raceway

    a. All internal enclosure wiring shall be contained within surface mounted plastic raceway. Raceway shall be of a polycarbonate, low smoke type with a solid snap-on cover and flexible side walls. The side walls shall be of “finger” type construction allowing for insertion and removal of wire runs with terminations attached. Sizes shall be determined by the manufacturer. Fill capacity shall not exceed 40%.

PART 3 – EXECUTION

3.1 GENERAL

A. SITE CONDITIONS

1. The Contractor shall properly notify “Dig Safe” at 1-888-344-7233 prior to any excavation or subsurface work.

2. The Contractor shall contact the JAXPORT in order to obtain written permission to enter the right-of-way to work on signals at the crossing. The Contractor shall coordinate times when crossing will be taken out of service for proposed work.

3. All work shall be accomplished in a manner that will protect the crossing throughout the prosecution of work.

B. EXCAVATION AND BACKFILL

1. General. It is the responsibility of the Contractor to obtain from the utility companies and others the location of all underground facilities prior to beginning any excavation. Any damage to an existing facility shall be repaired by the Contractor at the Contractor’s expense.

   a. Unless otherwise indicated in the Plans or in the special provisions, the Contractor shall perform all excavation, backfilling, and resurfacing work, including removal and replacement of curbs, sidewalks, paved surfaces, and any other materials necessary to complete the work in accordance with the Plans and specifications or as ordered by the EIC

   b. In making excavations in paved surfaces, such as for the installation of signal conduit, cuts shall be made with a concrete saw to a minimum depth of 2 inches along the neat lines of the area to be removed.

   c. All landscaping and underground utility systems that have been disturbed by the construction shall be restored to their original condition by the Contractor at the Contractor’s expense upon completion of the work.

2. Excavation for Conduit and Buried Cable

   a. Trenches necessary for placing conduit and buried cable shall be excavated at the location shown on the Plans or as directed by the EIC, and the bottom of conduit trench graded to a pitch of not less than 3 inches per 100 feet.

3. Excavation for Foundations

   a. Excavation for foundations shall be made at the locations shown on the Plans or as directed by the EIC.

4. Backfill

   a. Backfill of suitable material shall be placed and compacted as directed by the EIC. The fill material around cables shall be free of sharp objects that might damage cable. Excess materials shall be disposed of in a manner satisfactory to the EIC.

b. All buried cable shall be marked with 6-inch red, plastic marking tape in the backfill, 12 inches below finished grade.

C. INSTALLATION

1. General

a. AHCW wayside equipment shall be installed in accordance with the approved installation plans, recommendations of regulatory agencies specified herein or as directed by the EIC.

b. AHCW control system equipment shall be mounted in such a manner as to provide for easy access to test points, indicators, and adjustments.

c. Track circuits termination diodes and shunts shall be installed in accordance with the manufacturer's standard and at locations shown on the approved plans.

2. Foundations and Cribbing

a. At all locations where pre-cast concrete foundations are installed, a crushed stone base shall be placed and compacted on the accepted subgrade to a total depth of not less than 4 inches after compaction.

b. When placing foundations, the Contractor shall exercise care to ensure that anchor bolts are not bent, or threads damaged. All anchor bolt threads, washers, and nuts shall be protected by applying friction tape, or other approved method satisfactory to the EIC, until such time as the unit to be supported is installed. Anchor bolts requiring leveling nuts shall be of sufficient length.

c. Foundations and pads shall be installed level and plumb.

d. If the surfaces of all foundations exposed to view do not present a uniformly clean surface of even texture and appearance, the surface shall be treated and rubbed to obtain a satisfactory finish, subject to approval by the EIC.

e. After backfilling foundations, the Contractor shall ensure that the foundation is plumb and level. Top of foundation to be at the same elevation as the crown of the roadway and no more than 4 inches above the final top of grade. If a crib support wall is required, the top of final grade in relation to the top of foundation shall be as approved by the EIC.

f. Each tier of timber cribbing shall be drift bolted to the one upon which it rests with 3/4 inch galvanized drift bolts in sufficient length to extend through two tiers and not less than 4 inches into the third tier. Concrete or steel cribbing shall be installed in accordance with the manufacturer's instructions.

g. The filling of the interior of the crib shall follow closely the erection of the successive tiers and at no time shall the cribbing be laid up higher than 3 feet above the backfilled portion.

h. The cribbing shall be installed to have a minimum perimeter walkway around the enclosure, or signal, of 6 feet.

3. Flashing Light Signal Installation

   a. The flashing light signal mast shall be securely fastened within the split base in a manner such as the distance between the split halves of the base shall be equal. The heads of the bolts in the base assembly shall be squared with each other and facing oncoming highway traffic.

   b. The base shall be securely fastened to the concrete foundation with the hardware provided for that purpose. The mast shall be plumb when the base assembly is fastened to the foundation. Shims, spacers, or other filler devices shall not be used to level and plumb flashing light signal equipment.

   c. A hole shall be factory-drilled in the mast for the bottom cross-arm. The center line of the hole shall be located so that, when the cross-arm with light units is attached thereto, the lowest part of the light assembly shall be between 7'-6" and 9'-6" above the crown of the roadway. Holes for additional cross-arms, when required, shall be located, and drilled in the field after the bottom cross-arm has been secured to the mast. The centerline of the additional light units shall be 23 inches above the centerline of the lower light unit.

   d. Electronic bell(s) shall be installed on the top of the mast of the flashing light unit as shown on the Contract Drawings.

   e. Underground cables shall be installed within the mast and terminated in the base junction box. No.10 wire shall be run to the cross-arm junction box in a manner as specified in AREMA Signal Manual Part 10.4.1.

      1) Wiring for the flashing light units and the bell shall be 37 strand, No. 10 AWG in accordance with the requirements of the AREMA Signal Manual.

      2) Where additional light units are used, wiring for these units shall multiple off the wiring in the next lowest cross-arm junction box.

      3) Wiring for bells shall go directly from the bottom cross-arm junction box to the bell.

      4) Terminations for flasher unit and bell wiring shall be solderless compression type terminals as specified herein.

   f. With ac power off and standby battery in a fully charged condition, the lamp voltage shall be adjusted to 9½ volts for LED lights (measured at the lamp) by varying the resistor for the flasher unit.

   g. The front lights of the flashing light unit shall be focused to provide maximum visibility for oncoming highway traffic. The back lights of the flashing light unit shall be focused to provide close visibility for oncoming highway traffic from the opposite direction.

4. Cable Installation

   a. General

      1) The installation of wire and cable shall conform to Parts 10.4.1 of the AREMA Signal Manual, except as modified herein.

2) Prior to the installation of underground cables, a sand bed compacted to a depth of not less than 3 inches shall be placed on the accepted subgrade. Following the installation of the cables, sand backfill shall be placed and compacted with hand tools around and over the cables in 4 to 6 inch layers, to a uniform depth not less than 8 inches without damage to the cables.

3) The Contractor shall provide sufficient slack in cable conductors at all terminating posts to enable three re-terminations of the conductor due to broken eyelets without re-servicing or re-pot heading the cable.

4) Cables shall not be bent to a radius less than 10 times the diameter of the cable during installation, or as finally installed.

5) All cable runs shall be continuous without splices between cable terminating locations.

6) Tags to identify cables shall be of plastic material. Tags shall be lettered to correspond with the cable destination and number of conductors in the cable. The type of tag to be used shall be as described in these specifications.

7) All cables shall be terminated in conductor order. Individual cable conductors shall be identified at each cable termination with plastic tags as specified herein. All spare conductors in each cable shall be terminated and identified.

8) All cable entrance openings in equipment houses and junction boxes shall be sealed with a pliable sealing compound after the cable is in place. Sealing compound shall be used to seal the area around cable where the cable emerges from the end of a conduit, pipe, or duct bank. All spare conduits shall be sealed or plugged in an approved manner.

9) A suitable lubricating medium, non-injurious to the cable insulation, shall be used when pulling cables into conduit or pipe.

10) Wherever multiple conductor cables are terminated, the outer sheath of the cable shall be carefully removed to the point of cable entrance. At the end of the cable sheath or covering, two layers of plastic electrical tape shall be applied.

11) When direct buried parallel the tracks, cable shall be buried a minimum depth of 30 inches below finished earth or ballast. Cable shall be laid loosely in the trench with a sand bed and backfill as specified. When passing under tracks, cable that is not protected in conduit shall be buried a minimum depth of 48 inches below top of tie.

12) Upon request, and only under extreme circumstances and because of installation hardship, will installation of a cable be allowed to a depth of less than 30 inches, subject to the EIC's approval. The cable shall be protected in a manner as approved by the EIC.

13) Restoration of backfill and ballast shall be subject to the approval of the EIC.

14) Whenever any signal cable is to pass under roadway or tracks, if existing conduit is not provided, the cable shall be installed in a 4-inch galvanized steel conduit and the conduit shall extend 20 feet beyond the edges of the pavement. It shall be the Contractor's responsibility to restore the pavement or roadway to its original condition, subject to the approval of the EIC.

15) Where cable leaves the ground at other than buildings or in foundations, it shall be protected by a bootleg or other covering extending above the ground line. Top of such protective coverings shall be filled with a sealing compound.

16) The Contractor shall install polyethylene cable marking tape at a depth of approximately 12 inches below final grade while backfilling each cable trench. This tape shall be as specified herein.

17) The pot-heading of buried cabled shall be applied whenever cable is terminated in signal equipment and such termination is within 2 feet of the grade level. This neoprene end seal pothead shall be installed in accordance with the manufacturer's instructions.

5. Rail Bonding Installation

a. All non-insulated joint bars in the crossing circuited territory shall be bonded with one bond installed on the field side of the joint bars.

b. Exothermically Welded Rail Head

1) The surfaces of the rails where the bond is to be applied shall be ground clean with a reinforced grinding wheel, of a type as recommended by the bonding material manufacturer. The use of vitrified grinding wheels will not be allowed. After grinding, the surface shall be cleaned with an approved non-toxic solvent to remove all traces of grease and dirt. After the surface has been ground and cleaned, it shall be heated to drive out any moisture. The bond wire shall then be welded to the rail in a manner to ensure a thorough mechanical and electrical connection.

2) The Contractor shall ensure that each bond connection is thoroughly welded to the rail. The EIC reserves the right to require a test of each weld by hammer and striker, or in any other manner that in the opinion of the EIC is reasonable.

3) The Contractor shall demonstrate that the bonding is in accordance with the requirements of this Section and as specified in AREMA Communications & Signal Manual Parts 8.1.20, 8.1.30, and 8.6.40.

c. Plug-Type Rail Web Track Circuit Connections

1) Track circuit connectors shall be furnished and installed in accordance with AREMA Communications & Signal Manual Parts 8.1.20 and 8.1.25 (Type 2 plugs). The opposite end of the connectors shall have a 7 inch length of turned bond strand with a compression sleeve installed for connection to bond strand wires.

2) Rail shall be drilled in accordance with AREMA Communications & Signal Manual Part 8.6.25. Rail shall be drilled with an approved 3/8 inch bonding drill bit and drill normally used for this purpose to permit the application of the bond to the rail web.

3) No hole shall be drilled through the rail brand. Holes shall be drilled within plus or minus 3/16" of the neutral axis of the rail. All holes shall be clean and deburred. Bond wires shall be installed on the same day as the hole is drilled. In the event that bond wires cannot be installed on the same day, the bond hole shall be protected against the elements with a suitable plug.

4) Plugs shall be driven with a hammer of approximately three pounds in weight, and when in-place shall be tight to provide the best possible contact throughout the web of the rail.

5) Track circuit connectors shall be furnished and installed with insulated bond strand cable. The bond strand shall have a nominal diameter of 0.200 of an inch and be jacketed with 3/32 inch rubber compound. The bond strand shall be connected to the solid #6 insulated twisted track wire with compression sleeves and taped and insulated to prevent corrosion. The connection between track wire and bond strand shall be housed in rubber water hose to prevent damage from ballast and frost in the ground. Bond strand shall be fastened to the rail base using approved rail clips.

6) The underground cable shall be stripped back a sufficient distance for the exposed conductor to be fully inserted into the compression sleeve. The sleeve shall then be compressed with the type of compression tool designed for that purpose. The sleeve shall then be covered with two layers of vinyl plastic electrical tape.

7) A 24 inch piece of approved rubber hose shall be placed beneath the rail base to house track circuit cable and shall be sealed with approved sealing compound in a manner approved by the EIC.

8) Any track circuit connection installed by the Contractor that is found to be defective prior to acceptance shall be removed and a new track circuit connection installed at no additional cost to JAXPORT.

9) Care shall be taken to avoid excessive slack in the bond conductor to prevent vandalism.

d. Plug-Type Rail Web Bonding

1) Bonding connectors shall be furnished and installed in accordance with AREMA Communications & Signal Manual Parts 8.1.20 and 8.1.25 (Type 2 plugs).

2) Rail shall be drilled in accordance with AREMA Communications & Signal Manual Part 8.6.25. Rail shall be drilled with an approved 3/8 inch bonding drill bit and drill normally used for this purpose to permit the application of the bond to the rail web.

3) No hole shall be drilled through the rail brand. Holes shall be drilled within plus or minus 3/16” of the neutral axis of the rail. All holes shall be clean and deburred. Bond wires shall be installed on the same day as the hole is drilled. In the event that bond wires cannot be installed on the same day, the bond hole shall be protected against the elements with a suitable plug.

4) Plugs shall be driven with a hammer of approximately three pounds in weight, and when in-place shall be tight to provide the best possible contact throughout the web of the rail.

5) The fouling wires shall be installed to allow for the plug end of the one wire to be placed on the outside of the far rail and the other end of the inside of the opposite far rail. The second wire installation shall be the reverse of the first wire.

6) Fouling wire shall be stapled to separate ties, 1-1/2” below the top of tie, opposite each other in the same tie bay. The fouling wires shall be installed to avoid touching the tie plates. Fouling wires shall be left exposed to allow visual inspection.

7) Any bond, weld, or connection installed by the Contractor that is found to be defective prior to acceptance shall be removed and a new bond installed as part of the work at no additional cost to the Contract.

e. Existing Bonding

1) If existing rail bonding is in place on the approach circuits, then the Contractor shall inspect and verify that all such bonding, including track switches, is in accordance with these specifications. If additional rail bonding, or rail bonding corrections, is required then the Contractor shall correct any such deficient existing rail bonding at no cost to JAXPORT in accordance with these specifications, or as directed by the EIC. Final determination of bonding requirements will be made by the JAXPORT.

6. Retirement and Disposal of Existing Equipment

a. All retired existing AHCW equipment or passive crossing warning devices shall be removed by the Contractor and transported to a site designated by the EIC.

7. Following the date of in-service operation, all JAXPORT flagging and related crossing protection expense, during periods that the warning system fails to operate as intended by this specification, shall be borne by the Contractor until the system is accepted by JAXPORT

SECTION 344266 - SIGNAL DRAWINGS AND RECORD PLANS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section include This Section specifies the production and furnishing of drawings for the signal system. It describes the general format of drawings, types of drawings and the manner in which information shall be displayed on such drawings.

B. Related Requirements:

1. 344200 General Signal Requirements
2. 344252 Commercial Metered Power Services
3. 344258 Signal System Testing
4. 344264 Automatic Highway Crossing Warning System

1.3 DESCRIPTION OF WORK

A. This Section specifies the production and furnishing of drawings and describes the general format of drawings, types of drawings, and the manner in which information shall be displayed. The Contractor shall use the Contract Drawings as the base for preparation of drawings specified herein as required to suit the proposed system, product, manufacturing process or installation method.

The information on the Contract Drawings describing the existing facilities pertinent to this Contract is accurate insofar as it is shown. The Owner does not, however, guarantee or represent that the existing conditions conform to the Contract Drawings. It shall be understood that conditions may exist which are different from the conditions indicated by the Contract Drawings based on existing plans and that the Contractor assumes all risks regarding the cost or quantity of the work to be done because of any use which he may make of them.

B. Drawings required under this Contract shall be as follows:

1. Shop Drawings - Drawings displaying systems, subsystems, products, arrangements, layouts, etc. as designed and manufactured by the Contractor and proposed for installation. This includes existing drawings revised to depict proposed modifications to existing systems required under this Contract.

   The Contractor shall submit proposed modifications to the existing systems record drawings for each location using "X" for removal and "O" for additions or any other method previously approved by the EIC. Shop drawings shall be prepared in accordance with the requirements of this specification and shall be a prototype of the Record Drawings. All drawings shall be prepared using MicroStation CAD software in accordance with this specification. All drawings shall be prepared using the latest drawing border and AREMA signal symbols.

2. Working Drawings – Shop Drawings will become Working Drawings after they have been submitted and approved for manufacturing and installation. Working drawings shall be updated to include all revisions to shop drawings required after EIC's review and factory testing.

3. As-Built Drawings – Working drawings will become As-Built Drawings after they were updated following installation, field testing and cut-over of any part of Work. A complete set of as-built drawings pertinent to the location that was tested and placed in service shall be left inside instrument housing with all mark-ups made during field testing. As-built drawings shall have all information identifying final location of wayside equipment and facilities including, but not limited to locations of underground facilities such as cable trenches, raceway entrances, utility power tabs and all other system elements provided under the Contract.

4. Within seven (7) calendar days of placing in service any part of Work, the Contractor shall revise As-Built drawings to include all modifications made during field testing and submit them for approval without the use of "X" and "O" symbols or any other revision method. Once approved, these drawings will become Record Drawings.

5. Record Drawings are intended to convey all information required to maintain signal system provided under this Contract and shall show the actual completed state of each location and the entire Project. Record Drawings shall be provided for all new work and for all modifications to existing plans. Quantities of plans for the final Record Drawing submittal shall be as specified herein.

C. Unless the effective date and identification number to be inscribed on the final Record Drawings is furnished by the EIC all existing drawings revised or redrawn shall have revision notation stating the revision description, sequential number, and the date of cut-over. Any new drawing shall have the date and description of work placed in service. The Contractor shall be responsible for the accuracy of all drawings including, but not limited to existing field conditions, signal equipment location assignments, circuit drawings and modifications thereof.

1.4 TYPES OF DRAWINGS

A. Drawings to be delivered by the Contractor shall be comply with these specifications and shall be a prototype of final Record Drawings. They shall have border, shall list previous revisions listed on the current as-in-service (AIS) drawings. Drawing set for each location shall include, but shall not be limited to the following:

1. Cover Sheet that shall bear the name of the submittal package and the name and location of the plan book in two inch high letters, mile post and AAR-DOT number shall be included;

2. Index Sheet that includes the drawings arrangement order, title and description including a list of relay coils and major components used on a particular sheet and future revision number. The final arrangement of drawings shall be based on a logical progression of the circuit's sequence of operations. The drawings order and index sheet shall be approved by the EIC. Index sheets shall reflect all the existing as well as all of the new drawings being provided so as to constitute a complete package of all the signal system drawings for each location that are part of the Project.

3. Symbol Sheet that identifies the meaning or function of all the symbols used on the drawings.

4. Nomenclature Sheet that identifies the meaning of all abbreviations and designations used in the drawings to describe wires, relays, devices, tracks, wayside equipment, and any other items.

5. Track and Cable Plan showing the track configuration, length of approaches to crossing, final location of all wayside equipment and structures pertinent to the work performed under this Contract, cable runs between points of termination, cable make-up and wire sizes, cable raceway types and sizes. Location of the conduits installed by the Contractor shall be identified.

6. Circuit Drawings showing control and indication circuits of a particular function(s) that shall be identified in the drawing title. These drawings shall identify all equipment, cable, and wire termination points, contact assignments, equipment location within the instrument housing, and all other information pertinent to equipment shown.

   Circuit drawings shall contain circuit nomenclature, terminal identification, fuse and resistor sizes, relay contacts identified by number and by the location of the relay on the instrument rack, usage of each relay contact, input/output points, plug connectors and wiring details. Information, such as time settings of timers, shall be shown on the circuit plans beneath the corresponding time element symbol. New and existing equipment identification, manufacturer's name, part numbers and ratings shall be shown on the Record Drawings.

7. Detail Drawings showing the arrangement of terminal boards, instruments, or components inside instrument housing or room, rack, junction box, cabinet, or module.

   The contact arrangement including both the working and spare contacts of vital and non-vital relays shall be shown on these plans. The circuit plan numbers where the contacts, components, or relay are used shall be identified.

8. Installation Layout Drawings showing all details, dimensions, and complete bill of material with part numbers of wayside equipment, equipment housing, dimensions relative to adjacent equipment or structures, tracks, and roadway, mounting details with sizes of utilized fasteners, brackets, and other elements of the layout.

9. Product Drawings showing the dimensions and internal mechanical and electrical details of particular pieces of equipment or assemblies shall bear the title of the particular piece or type of equipment shown;

10. Power Distribution Drawings showing schematic of energy distribution of systems and subsystems required under this Contract. These schematics shall be included as part of the Circuit Drawings.

11. Temporary Drawings showing required temporary work, that will not remain as a part of the completed work.

12. Wiring Diagrams showing the details of electrical connections for various parts of system equipment including junction boxes and other termination points shall bear the title of the particular piece of equipment;

13. Track Circuit Drawings showing a double line track layout with all related equipment, polarities, relay (receiver) and transformer (transmitter) ends, bonding connections, jumpers, and other equipment and connections related to track circuits.

14. Instrument Housing Layout shall be a scaled set of drawings showing instrument and entrance rack layout, location of equipment inside the housing on racks and housing walls, cable entrance details, cable distribution tray layout, HVAC ducts, housing lighting and furniture as well as equipment and terminal arrangements on cable entrance racks, equipment racks, and housing walls.

15. Material Reference Sheet showing description, nomenclature, part numbers and ratings for all materials and equipment provided.

16. All other drawings that are required to illustrate all proposed and/or completed work as specified herein or requested by the EIC.

1.5 QUALITY ASSURANCE

A. All drawings submitted by the Contractor shall be in accordance with the industry standards for AHCW circuit and detail design. Approval of the Drawings shall be at the discretion of the EIC. Prior to submittal, verify that the drawings conform to the Contract requirements specifically addressing the following:

1. Use of AREMA Standard Symbols and nomenclature.

2. Conformance to the Specifications.

3. Logical grouping and arrangement of subject matter.

4. Accuracy.

5. Legibility.

6. Neatness.

7. Line quality.

8. Lettering quality.

9. Reproduction quality.

10. Lack of clutter and minimum of crossed lines.

11. Inclusion of interfaces with related contracts.

B. During the review of submitted drawings the EIC will consider the points enumerated above, with the basic criteria for obtaining approval being that drawings are easy to read, understand and use.

1.6 DRAWINGS SUBMITTALS

A. Drawings shall be submitted in accordance with requirements of Submittals Section of these specifications. Prior to production of plans submit a sample of project drawings 11x17 inch size with the JAXPORT border and title block provided by the EIC.

B. All drawings germane to the product, subsystem, or location shall be grouped together and submitted at the same time. This logical grouping of drawings shall be referred to as a submittal package.

C. Modifications to existing facilities and proposed temporary work marked with "O" and "X" or other approved method shall be submitted four (4) weeks prior to the scheduled date of implementing work.

D. When recording work in progress use green color to show conditions that are acceptable, brown for contacts verified, red for circuit changes to be added, and yellow for circuit changes to be removed.

The Contractor's approved signal EIC shall sign and date all circuit testing and changes. As revisions are made, they shall be copied to all prints at each location.

E. As-Built Drawings with all revisions clearly marked shall be left inside each pertinent instrument housing (SIH, Case, JB, etc.) after placing in service any portion of the work, unless otherwise directed by the EIC. One paper copy shall be left at the Project office and one shall be submitted to the EIC for approval.

F. After approval of as-built drawings and completion of all "punch list" items the Contractor shall submit a complete set of final Record Drawings as specified herein. Record Drawings shall incorporate all modifications made during final cut-over of each part of every phase of the implementation of the Contract. Record Drawings shall have no "X" and "O" symbols or other means of drawing modifications.

G. Record Drawings shall be provided by the Contractor to the EIC within seven (7) days after the work is complete and in-service. Record Drawings shall also be furnished by the Contractor to the EIC in MicroStation CAD format and PDF format for use on a Windows based PC.

H. Within 7 days of completing punch-list items the Contractor shall submit the Record set of drawings that shows the final configuration of the AHCW system at each location. Record drawings shall be provided as follows:

1. One printed set 11"x17" of plans shall be delivered to each signal location and placed inside the instrument housing.

2. Two (2) sets 11"x17" of all Record Drawings bound in a protective covering shall be delivered to the JAXPORT Project office.

3. MicroStation CAD files and PDF files for use on a Windows based PC shall be delivered to JAXPORT or as directed by the EIC.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Electronic files of all drawings shall be in the most recent release of MicroStation available. The Contractor shall maintain an electronic copy of the Project CAD files for a period of not less than five years at his facility.

B. Supply a matrix of layer names and colors for all drawings. Review plotting procedures with JAXPORT's CAD personnel and ensure all drawings can be plotted satisfactorily using JAXPORT owned equipment.

C. CAD Standards used for creating and plotting drawings such as pen weights, text heights, colors, etc. shall be obtained by the Contractor from the EIC. No x-ref files shall be utilized.

D. All copies of plan books and submittal drawings shall be bound with a protective cover and backing as manufactured by Wilson & Jones or approved equal.

PART 3 – EXECUTION

3.1 BASIC FORMAT REQUIREMENTS FOR DRAWINGS

A. Drawings shall not be crowded or cluttered and shall be arranged to be easily readable. Circuitry shall be presented on the drawing with a minimum of crossed or offset lines. Where applicable, a schematic track diagram shall be included to show the area of work.

B. Complete circuits shall be shown on each drawing insofar as practicable. Circuit continuations shall be kept to a minimum. When circuit continuations are used, they shall be clear and specific and shall include the identity of circuit, reference letter and continuation sheet, even when continuation is on the same sheet.

C. New drawings requiring continuation of, or match lines to, existing drawings shall match the existing drawings in format, relative placement of equipment, cables, tracks, and other items depicted on the drawings.

D. When circuit continuation is required, the reference to continuation shall have a circuit nomenclature, circle with a letter at the end of the line depicting wire, and sheet number where continuation is shown.

E. Local or equivalent circuits shall be drawn with relay coils, timers, motors, or other operated devices shown near the right or left border of the drawing wherever practical. Where there is a choice the right border shall be favored. Contacts in circuits shall be laid out in geographical succession insofar as possible and practical.

F. Relay nomenclature shall be printed in three lines, as follows:

Top – Coordinate	(3A2)	(15B6)
Middle - Name Identification:	10-2N	10-3
Bottom - Function Description:	AS	NWCP

G. Relay nomenclature shall appear above top of coil or contact.

H. Stick contacts shall line up under the coil of the controlling relay. Relay contacts shall line up with the controlling coil and other contacts of the same relay insofar as practicable. Different relay contacts and coils shall not line up.

I. A minimum distance of 0.40 inch shall be maintained between lines representing circuit wiring. Lettering or printing shall be at least 0.10 inches high. All spacing shall be in multiples of tenths of inches.

J. All track and cable drawings shall show the survey stations for all wayside equipment, junction boxes, signal instrument housings and related structures.

K. All circuits shall reflect the actual wiring indicating all contact and terminal numbers. When the final circuit is wired differently from the Contractor's drawing, revise the drawings to indicate the actual wiring before preparation of As-Built drawings.

L. The arrangement of circuitry shall be in such a manner that no more than two wires shall be shown connected to a single terminal or contact pin. A uniform method shall be used to indicate the actual

location of double wire connections when it is not desirable to show both wires at the point of termination. Wires shall be shown at the actual point of termination.

M. Use symbols and nomenclature as shown on the Contract Drawings and specified herein, unless otherwise directed by the EIC.

N. All modifications to existing plans shall be prepared by reproducing the original existing drawings in CAD and then adding all proposed revisions. The modified existing plans shall be submitted for approval as all project drawings and shall be approved by the EIC prior to implementing proposed modifications to existing system.

O. Unless otherwise directed by the EIC, all CAD drawings prepared by the Contractor shall be as follows:

1. DRAWING REQUIREMENTS:

   a. Drawing Lines shall be continuous from start to finish.

   b. Any filling shall be solid no hatched fills.

   c. All track circuits shall be shown with the track layout.

   d. The Contractor shall have their Logo in revision box.

2. WORKING UNITS

   a. The working units' settings are as follows:

      1) Unit Names:

      2) Master Units: IN

      3) Sub Units: TH

      4) Resolution: 10 TH Per IN, 1000 Pos Units Per TH

      5) Working Area: 429496 IN

3. GRID SETTINGS

   a. The grid has been set as follows:

      1) Master/Grid: 0:1.0000

      2) Reference Grid: 10

      3) Configuration: Orthonal

      4) Aspect Ratio (x/y): 1.0000

4. LOCK TOGGLES

   a. The gridlock toggle shall be on whenever possible.

b. The unit lock toggle shall be on for all element placements. Unit lock Distances (UR) have been set in the seed file for 0:0.5000 between grid marks.

c. The snap toggle shall be on.

d. The remaining locks shall be turned off.

5. GLOBAL ORIGIN

a. The (GO) control is where the X, Y=0,0 point is located with respect to the design plane.

b. The Global origin has been set to the lower left border of the drawing inner borderline.

6. LEVEL SYMBOLOGY

a. The level symbology shall be turned on at all times.

7. TEXT

a. EICing Font #3 shall be used for all text.

8. TEXT SIZE

a. The following sizes shall be used for all text:

1) General Text, Notes, Equipment Description and Line Tagging.

a) Height 0.1000

b) Width 0.1000

c) Line Spacing 0.5000

d) Line Length 255

e) Interchar Spacing 0.0000

f) Slant 0.0

2) Headings and Title Block Information:

a) Height 0.2000

b) Width 0.2000

c) Line Spacing 0.5000

d) Line Length 255

e) Interchar Spacing 0.0000

f) Slant 0.0

9. TEXT PLACEMENT

   a. All text shall be placed with the unit locks on. Line tag text shall be centered 0.500 tenths above the line. "Data Fields" shall be used where provided in accordance with the cell library.

10. TEXT JUSTIFICATION

   a. The preferred justification settings are:

      TXJ= LC, CC or RC

      TNX=LC, CC or RC

11. CELLS

   a. Cells used in drawings shall not be "Dropped Status" and rearranged.

   b. Cells and Drawings that require filled in areas will be solid fills and not hatched fills.

12. VIEW ATTRIBUTES

   a. The following view attributes shall be adhered to. View #1 shall be displayed on the main screen and view #7 displayed on the other screen if equipped. (See Attached View Attributes Chart).

13. PLOTTING

   a. View #7 is standard plotting view.

   b. All plots shall be 11"x 17" size unless otherwise requested by the EIC.

   c. All plots shall be clear and legible.

   d. Plots shall be plotted in black and white.

   e. Level Symbology and Line weights turned on.