

Addendum 2
April 28, 2023
South Jersey Port Corporation (SJPC)
Request for Sealed Bids

**SJPC-22-49RB BALZANO MARINE TERMINAL RAIL
INFRASTRUCTURE REHABILITATION**

NOTICE

This Addendum is considered part of this Request for Bids and must be acknowledged with your submission.

The following page(s) contain:

- A. Formally submitted questions and SJPC responses.
 - B. Revised SECTION 000110 - TABLE OF CONTENTS
 - C. SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES
 - D. Revised Bid Form
-

A. FORMALLY SUBMITTED QUESTIONS AND SJPC RESPONSES:

Q1. Regarding STORMWATER NOTE #7- CONTRACTOR TO INSPECT AND CLEAR ALL EXISTING DOWNSTREAM PIPES IN ACCORDANCE TO SPECIFICATION (330130.11, TELEVISION INSPECTION OF SEWERS), please clarify the following:

- a) Please indicate which existing lines / outfalls are included in this item.
- b) Please provide the existing pipe size and material.
- c) Please provide a detail of the existing outfalls (open pipe, flap gates, etc.) and existing elevations. This could not be determined from the site visit.
- d) Please provide an estimated amount / allowance for the pipe cleaning debris that is required to be removed and disposed of.

A1.

- a) This inspection is required on all pipes that are being tied into. Inspect from the connection to the outfall of the pipe.
- b) Refer to Exhibit A of the Bid Documents
- c) Existing elevations are unknown.
- d) An allowance item has been added to the Bid Form for pipe debris transport and disposal.

Q2. Please supply the size, material & depths of all existing drainage structures & pipes.

A2. Refer to Exhibit A of the Bid Documents.

Q3. Soils:

- Spec section 312000 "Earthmoving" & section 312316.13 "Trenching":
- Please clarify excess excavate and unsuitable/hazardous materials.
 - Are we stockpiling on site or removing off site?
 - Who is responsible for testing if suspected to be unsuitable/hazardous?
 - If hazardous, will SJP provide disposal?

A3:

- Remove Off Site
- Contractor will be responsible and shall contact owner right away if suspected hazardous soils are encountered.
- An allowance item has been added to the Bid Form for testing, transport and disposal of regulated soils.

Q4. Sewer Inspections:

- Per drawing C-201 & spec section 330130.11 "Television Inspection of Sewers"
- What is SJP position on what makes a simple flush & cleaning of an existing pipeline? (ie: one or two attempted passes with the jet spray)
- If more than one or two attempts are necessary, will this be considered an extra?
- How many lines are we televising? Lines going out to the river are indicated as follows: C-202 shows 1 line, C-203 shows 4 lines.

A4:

- Two attempted passes with jet spray
- Yes, only if directed by the Engineer.
- Inspection is required on all pipe that are being tied into. Inspect from the connection to the outfall of the pipe.

Q5. Storm Water Piping:

- Please confirm that the existing piping is ductile iron pipe.

A5. Refer to Exhibit A of the Bid Documents

Q6. OH Doors, spec section 083323:

- Are the slats on the door perforated or solid?

A6. Slats on the door are to be solid.

Q7. Phasing Plan drawing CP-1:

- There is an area shaded light blue in between Phase 1 & Phase 5 (lower portion of the drawing. Please confirm that this is not part of the scope of work.

A7. The light blue portion is not part of the scope of work.

Q8. Railroad Items:

- Drawing #T-25 Detail 2 shows a Racor #336-EC switch stand for the embedded double tongue switches. A Racor 336-EC switch stand has a minimum throw of 4.25" while a double tongue switch has a throw of 3-1/8". This will not work together. Please provide direction on how to proceed.
- The Narstco Steel Tie Installation manual on page 34 Item 10.6 Settling-in period states, Steel Ties require a longer settling in period than wood or concrete ties. As a result, some spot resurfacing may be required during the first 3 to 6 months in order to achieve complete track stability. Is it the ports intention to leave the track open for this time frame and the contractor re-surface the track after the settlement occurs prior to embedding the track, if steel ties are used?
- The Narstco Steel Tie Installation manual on page 33 item 9.14 Ballast compaction states, after completion of tamping and prior to regulating, it is suggested that Steel Tie track be compacted with an on-track ballast compactor or track stabilizer. Will this be required if steel ties are used?

A8.

SJPC-22-49RB BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
ADDENDUM 2

- A Racor 336E style configured for Outside of Gauge installation. can be supplied with Headrod and Headrod box for the embedded application and internal modification to add adequate lost motion to provide a throw distance of 3-3/4" per the AREMA plan. Alternately for an in-gauge installation provided that the width will fit with the dimensional spacing between the Tongue Receiver castings, the locking nuts on the throw rods are positioned a little away from the face of the tongue lugs to allow lost motion.
- Steel ties are only to be used when embedded into concrete so settling in period does not apply.
- Steel ties are only to be used when embedded into concrete so settling in period does not apply.

Q9. Misc. Items:

- The Insurance specification section call for Watercraft Liability/Protection and Indemnity Liability insurance and Vessel Pollution Liability Insurance. Can you confirm that these will not be required for this contract.
- Will a builder's risk policy be required for this project?
- Due to excessively long lead times for the double tongue switch, crossing frogs, and restraining rail. Can the completion of the project be extended to 720 days?
- Is it correct that the port will be able to provide a sales tax exempt certificate to the successful contractor for the purchase of permanent materials?
- Please confirm there is no DBE or SBE requirement for this project.
- Will any pavement markings (ie: striping, arrows, etc.) be required?
- Are any permits anticipated to be necessary? If so which one?

A9.

- Not required unless using watercraft for delivery or execution of construction
- A builder's risk policy for this project is not required.
- Not at this time
- Yes, it will be provided to the awardee.
- There are no DBE / SBE requirements.
- No pavement marking drawings provided.
- No permits are anticipated.

Q10. As the project is funded by NJDOT, is there any equal opportunity requirement for tradesmen?

A10. Follow the requirements as per Q3, Exhibit B of the RFP.

Q11. What are the work hour for weekend work? Weekend work for rail replacement at the main gate

A11. Weekend work is permitted for the main gate rail track replacement from Friday at 1600 through Monday 0600.

Q12. Does contractor required to employ a competent person (Safety Engineer) to perform the duties required by 29 CFR 1926 et seq.?

A12. Yes, follow the requirements for Class 1 rail track construction.

Q13. Please confirm if there is any DBE/MBE participation requirement?

A13. There are no DBE / MBE participation requirements on this project.

Q14. Is an engineers estimate available for the project?

A14. An Engineer's Estimate is not available.

Q15. Please confirm the percentage of work that has to be self-performed by the contractor?

A15. There are no specified percentages of work to be performed by the general contractor performing the work.

Q16. Please provide the track footage/ limits for placement of new RR track on dock embedded in concrete?

A16. Dock limits are shown on EX-0. The rail work in this zone is in the area of Berth 3. Existing drawings show the concrete deck is 51-ft wide.

Q17. Please provide a list of ballast and asphalt suppliers the owner has used in the past if possible?

A17. This information is not available.

Q18. Please provide a list of concrete suppliers the owner has used in the past if possible?

A18. This information is not available.

Q19. Last but not the least, we respectfully request an extension to bid due date.

SJPC-22-49RB BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
ADDENDUM 2

A19. Not at this time.

Q20. Section 011000.1.4.B.2 Calls for the removal of 7 existing "Tongue and Mate" turnouts. That number should be 3. Please confirm.

A20. Confirmed, number of Tongue and Mate turnouts to be removed is 3.

Q21. Is the original bid criteria still in place regarding SJPORT providing 150 timber ties?

A21. *Per the contract bid documents, there are no materials being supplied by the SJPC.*

Q22. Is there a spec for the fence?

A22. All the requirements for the fence are specified in Exhibit B.

Q23. The original bid eliminated the Small Business Set Aside criteria. Will the same be done for the Re-bid?

A23. There is no SBE set-aside criteria on this project.

Q24. Spec Section 330130.11 - Please break out the pipe inspection as a separate pay item and consider using a unit price for pricing, i.e. a day rate or as T & M. This item cannot be priced Lump Sum as the existing conditions are generally unknown.

A24. See answers to Question #4.

Q25. Please specify what safety is required to designate work zones per phase.

A25. It is the contractor's responsibility to adequately provide maintenance and protection of traffic and work area protection during the execution of work in all construction phases and as required by Conrail on an operating Class 1 railroad.

Q26. Is this project tax exempt for the purchase of permanent materials?

A26. Yes, refer to response to Q 9 above.

SJPC-22-49RB BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
ADDENDUM 2

Q27. What are limits (width) of Concrete removal between buildings A, C, Transit shed 1 and 2?

A27. Limits of removal shall be limited to areas where existing track is to be removed and new track structure is being installed. Since limits of asphalt subbase and concrete subbase is unknown, the following assumptions should be made:

- all removal between Building A, C, Transit Shed 1, and Transit Shed 2 is in concrete for bid purposes.
- All removal South of the buildings is in asphalt
- All removal on Berth 3 is in concrete.

Q28. Is the turnout scheduled to be installed over a weekend or can this be installed during the week during normal business hours?

A28. The turnout may be installed either over a weekend or during regular weekday work hours.

Q29. When a ship is in the turnout area is it heavily traveled on by trucks and fork lifts?

A29. Assume the port activity is elevated during the unloading of cargo from a ship and the loading of scrap onto a ship.

Q30. How often do ships get unloaded per week. Are there multiple day gaps between ships where the berth is not used.

A30. Ship schedules are dynamic and long range forecasting of ship schedules are always subject to change.

Q31. Please specify which Insurance Requirements the Contractor will be required to obtain.

A31. We can confirm the following coverages will **NOT** be required:

- Rigger's Liability Insurance
- Aircraft Liability and/or Unmanned Aircraft Systems
- Builder's Risk

For all other coverages, please refer to the Insurance Requirements section of the Bid document.

SECTION 000110 - TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS:

01 GENERAL REQUIREMENTS

- 01 11 00 Summary of Work
- 01 20 00 Price and Payment Procedures
- 01 32 00 Construction Progress Documentation
- 01 33 00 Submittal Procedures
- 01 40 00 Quality Requirements
- 01 70 00 Execution and Closeout Requirements
- 01 78 39 Project Record Documents

02 EXISTING CONDITIONS

- 02 41 17 Pavement Removal
- 02 41 19 Selective Demolition

03 CONCRETE

- 03 10 00 Concrete Forming and Accessories
- 03 20 00 Concrete Reinforcement
- 03 30 00 Cast-in-Place Concrete
- 03 60 00 Grouting
- 03 93 20 Concrete Repairs

05 STEEL

- 05 12 00 Structural Steel Framing

08 OPENINGS

- 08 33 23 Overhead Coiling Doors

SECTION 000110 - TABLE OF CONTENTS

09 FINISHES

09 90 00 Painting and Coating

31 EARTHWORK

31 05 61 Aggregates for Earthwork

31 10 00 Site Cleaning

31 20 00 Earth Moving

31 23 16.13 Trenching

31 23 19 Dewatering

32 EXTERIOR IMPROVEMENTS

32 12 16 Asphalt Paving

32 17 23 Pavement Marking

32 39 13 Bollards and Bollards Covers

33 UTILITIES

33 01 20 Abandonment of Underground Utilities

33 01 30.11 Television Inspection of Sewers

33 01 30.86 Manhole Rim Adjustment

33 05 09.33 Thrust Restraint for Utility Piping

33 05 97 Identification and Signage for Utilities

33 14 13 Water Distribution Piping

33 14 19 Valves and Hydrants for Water Utility Service

33 42 00 Stormwater Conveyance

34 TRANSPORTATION

34 11 10 Continuously Welded Rail

34 11 16.22 Construct Welded Track – Steel Crossties

34 11 23 Special Trackwork

34 11 26.16 Subballast

SECTION 000110 - TABLE OF CONTENTS

34 11 29	Construct Continuously Welded Rail Track
34 11 33	Timber Crossties
34 11 33.22	Steel Crossties
34 11 34	Full Depth Precast Concrete Grade Crossing
34 11 93	Track Appurtenances and Accessories
34 11 93.13	Casing Pipes
34 72 01	Track Layout
34 72 05.	Construct Turnouts
34 72 10	Field Weld Rails
34 72 15	Rail Connections
34 72 30	Ballast

- END OF SECTION -

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

PART 1. GENERAL

1.1 SUMMARY

- A. The work of this Section consists of the construction of track with Steel Crossties and ballast placed to maintain and achieve vertical and horizontal alignment.
- B. Related Sections
 - 1. Section 341126.16 – Subballast.
 - 2. Section 341133.22 – Steel Crossties
 - 3. Section 341193.00 – Track Appurtenances and Accessories
 - 4. Section 347201.00 - Track Layout.
 - 5. Section 347205.00 - Construct Turnouts
 - 6. Section 347210.00 – Field Weld Railroad Rails.
 - 7. Section 347215.00 – Rail Connections
 - 8. Section 347220.00 - Other Track Material
 - 9. Section 347230.00 - Ballast

1.2 DESCRIPTION

- A. This specification covers ballasted track constructed using new 136RE rail on steel crossties.
- B. Rail shall be secured to steel crossties with Pandrol type fasteners and appropriate shoulders as supplied by the steel crosstie manufacturer.
- C. The construction of ballasted track shall include:
 - 1. Preparation of subgrade and the placement, grading and consolidation of ballast through the track section.
 - 2. Storage and handling of track materials.
 - 3. Storage, handling, welding, inspection, testing, adjusting and installation and recordation of continuous welded rail.
 - 4. Construction of ballasted track.
- D. The above includes all pertinent trackwork related items associated with the construction of track such as thermite welds, rail cutting, handling, thermal adjustments, tamping, surfacing, alignment and any other operations required to construct an acceptable track structure.

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

1.3 MEASUREMENT AND PAYMENT

- A. Measurement shall be the number of feet of track constructed and in place, as measured along the center line of the track.
- B. Payment shall be at the unit price bid.

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Design Data: Submit manufacturer's latest published literature. Include illustrations, installation instructions, maintenance instructions, parts list and shop drawings.
- C. Manufacturer's Certificates: Submit Statement of Compliance, supporting data, from material suppliers attesting that components meet or exceed applicable A.R.E.M.A. Standards and specification requirements.
- D. Submit Certificates of Compliance for all OTM. Include material qualification test reports for materials, components, and assemblies.

1.5 REFERENCES

- A. American Railway Engineering and Maintenance of Way Association (AREMA):
 - 1. Manual for Railway Engineering
 - 2. Portfolio of Trackwork Plans
 - 3. Specifications for Special Trackwork
- B. American Welding Society (AWS):
 - 1. AWS B2.1: Standards for Welding Procedures and Performance Qualifications
 - 2. AWS D1.1: Structural Welding Code
- C. American National Standards Institute, Inc. (ANSI)
 - 1. ANSI B1.1: Unified Inch Screw Threads
 - 2. ANSI B1.3M: Screw Threads Gaging System for Dimensional Acceptability
 - 3. ANSI B18.22.1: Plain Washers
- D. American Society for Testing of Materials (ASTM)
 - 1. ASTM A36: Standard Specifications for Carbon Structural Steel
 - 2. ASTM A123: Standard Specification for Zinc (Hot-Dip-Galvanized) Coating on Iron and Steel Products
 - 3. ASTM A325: Standard Specifications for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

PART 1 - PRODUCTS

1.6 MATERIAL

- A. Rail utilized shall be either;
 - 1. New 136RE section conforming to the latest A.R.E.M.A. specifications for steel rails.
- B. Steel crossties shall be in accordance with the specifications set forth under Section 341133.22 Railroad Steel Crossties, of these specifications.
- C. The rail fastening system for steel crossties shall be in accordance with the specifications set forth under Section 341133.22 Railroad Steel Crossties, of these specifications. The rail fastening system components shall be furnished by the steel crosstie manufacturer and shall be specifically designed to be used with the steel crossties supplied.
- D. Rail joints shall conform to Section 347215 Rail Connections, and welds shall conform to section 347210 Field Weld Rails of these specifications.
- E. Ballast and tamping shall conform to Section 347230.00 Railroad Ballasting, of these specifications and other parts of this specification section.

PART 2 - EXECUTION

1.7 PREPARATION

- A. The contractor shall notify the engineer a sufficient time before starting the work so that adequate arrangements can be made to progress the work.
- B. The contractor shall perform the track layout in accordance with Section 347201.00 Track Layout, of these specifications.
- C. The contractor shall place track after the underground utilities are protected and approved by the owning utility company; after the railroad compressed air, oil, water, sewer, signal, and underground electric lines have been placed and approved; and after the engineer has approved the roadbed for placing the track.

1.8 EXAMINATION

- A. The contractor shall inspect and inventory the rail, the steel crossties and the fastening system components at the delivery site and shall then assume complete responsibility for the security, quantity and condition of them.

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

- B. All rutting and pocketing of the roadbed during track laying operations shall be restored to a smooth surface.
- C. Steel crossties as specified in Section 341133.22 Railroad Steel Crossties, exclusive of switch ties, grade crossings and direct fixation track, shall be installed by type and location (to the nearest station) in the following tracks:

Location	Type	Begin Station	End Station	Notes
ALL AREAS	2	PER PLANS	PER PLANS	N/A FOR FULLY EMBEDDED TRACK

1.9 INSTALLATION

- A. The contractor shall place and handle steel crossties as specified in these specifications. Steel ties can be distributed directly on the finished subgrade. In order to reduce the number of surfacing passes required, a four inch (4") to five inch (5") layer of ballast can be distributed and compacted prior to steel tie distribution and track assembly. Eight inches (8") to ten inches (10") of ballast is required under steel ties. Ballast depth shall be as specified on the plans. If a layer of ballast is distributed and compacted prior to steel tie distribution, final ballast depth under the ties will be eight inches (8") or more.
- B. The contractor shall supply rollers for the unloading and distribution of the welded rail. The type of rollers used and their application must be approved by the engineer prior to their use.
- C. The bottom of the rail and the rail seat shall be clean and free of dirt and other foreign substances when the rail is laid.
- D. Install the rail onto the rail seats of steel crossties verifying that it is properly located between the shoulders. The rail shall only be handled using Rail Tongs or rollers designed exclusively for the purpose. **Under no circumstances is the rail to be handled with a "Prentiss" type log loader or split bucket excavator.** Rail should be laid so that joints fall between Steel Ties and not on top of Steel Ties. **(Note: If relay or second hand rail with curve wear is used, the curve wear must be placed on the field side of the Steel Tie).** Strings of welded rail shall only be pulled into position and not pushed. Bumping welded rail into position shall not be permitted.
- E. Once the rail is in the position, either temporarily connect the individual rails with conventional splice bars and track bolts in accordance with specification Section 347215 - Rail Connections or weld the strings together in accordance with specification Section 347210.00 - Field Weld Rails. Apply the resilient fasteners

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

installing the gauge side fasteners first. If required, the end of the steel crosstie shall be nipped up to ensure that the base of the rail sits flat on the rail seat. If one end of the steel crosstie must be raised more than 2 inches to install a fastener, both ends of the steel crosstie should be raised so that the steel crosstie is level.

- F. Where necessary to use a short rail to connect CWR strings, that rail should be at least 14 feet long.
- G. If it becomes necessary to apply joint bars temporarily to rail joints that will ultimately be field welded, the end bolt hole in each rail must not be drilled to permit subsequent prompt field welding. It may be necessary to apply the rail fastener assemblies to prevent pull apart prior to field weld being made.
- H. Except where field butt welded, CWR strings are to be fastened to each other or to buffer rails with fully bolted rail joints, except as provided in paragraph (2) above
- I. The contractor shall check the gauge as specified under Section 341133.22 Steel Crossties, of these specifications. The contractor shall measure gauge of steel crosstie track and verify that it is within the tolerances stated in these specifications. If steel crosstie track is not within the tolerances of these specifications, the contractor shall immediately remove the noncompliant steel crossties and replace them prior to commencing the rail destressing procedure.
- J. Do not subject the steel crossties to locomotive or railcar loads including ballast trains unless the steel crossties are well supported under the rail with a gap in the center of the crosstie to distribute wheel loads and prevent the steel crosstie from being center-bound.
- K. Dump ballast and surface the track to within 1 inch of final elevation. Ballasting and tamping shall be in accordance with Section 347230.00 Railroad Ballasting, of these specifications. For new construction, ballast should be unloaded and regulated such that the ballast is level with the top of the rail and should extend twelve inches past the ends of the steel crossties.

1.10 TAMPING

- A. A tamping machine equipped with traversing vibratory work heads and sixteen tamping tools **MUST** be used for surfacing steel tie track. The tamping tool paddles (or blades) must be in good condition. Paddles worn beyond normal wear limits must be replaced before surfacing steel tie track. Worn blades will not move sufficient ballast to fill the pods on the underside of the steel crossties, nor will they provide sufficient compaction to consolidate the ballast under the steel crossties.

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

- B. For surfacing steel crossties, the maximum depth of insertion of the tamping tools must be adjusted such that the top of the tamping tool blade is $\frac{1}{2}$ "- $\frac{3}{4}$ " below the bottom of the steel tie. *Depth of tool insertion should be carefully checked before surfacing steel ties.* There is approximately a $2\frac{1}{2}$ " difference between the depth of a wood tie and a steel tie. The limit switches on the tamper should be adjusted so that the depth of insertion for steel ties is $2\frac{1}{2}$ " less than the depth of insertion for wood tie surfacing. This is critical for proper steel tie surfacing and lining. If tamping tool insertion is set too deep (not adjusted from the setting for wood tie construction), proper compaction of the ballast under the steel ties will not be achieved.
- C. A complete tamping sequence consists of tool insertion, squeeze and withdrawal. To fill the pods on the underside of the steel ties with properly compacted ballast during an initial surfacing lift, four complete tamping sequences (tool insertion, squeeze and withdrawal) are required under the rails. Then the traversing work head must be moved to the center of the Steel Tie, and three complete tamping sequences are needed in the center of the steel crosstie. This must be repeated for each large ballast lift. For larger projects, it is recommended that additional tamping tools be mounted on the tamper in the center of the track. This will achieve center tamping at the same time as rail seat tamping is done. Check with your equipment manager to determine if the equipment in use on your job site can be modified in this manner. Tamper blade spacers (available from the tamper manufacturer) should be installed to space the tamper blades further apart, so that the blades do not contact the ties during the squeeze cycle.
- D. The ballast pocket of all steel crossties shall be full to the top of the inspection holes and ballast within the crosstie shall be "tight" (as determined by attempting to move the ballast in the vicinity of the inspection holes with a finger). Check the ballast pocket via each of the four inspection holes. If the ballast pocket is not "tight" re-tamp each crosstie and dump additional ballast as needed until the ballast pocket is satisfactorily filled.
- E. Lining track should be done while lifting and tamping and should be completed prior to the final surfacing lift.
- F. Destress (adjust) welded rail prior to the final surfacing lift.

1.11 TEMPERATURE ADJUSTMENT OF CWR

- A. The contractor shall remove the resilient fasteners, adjust the rail and re-apply the resilient fasteners to the welded rail at a rail temperature of 95° Fahrenheit or higher in accordance with the following criteria:
 - 1. Rail Temperature:
 - a. A standard rail thermometer shall be used to measure the rail temperature of all CWR before it is laid in track. The thermometer

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

should be laid on the base of the rail, shielded from direct rays of the sun and left there long enough to determine the temperature accurately.

- b. CWR must be anchored at or adjusted for a temperature of 95° Fahrenheit or higher.
 - c. When the rail temperature is lower than 95° Fahrenheit, an approved rail heating device may be used for expanding the CWR to make proper adjustment.
- B. Where CWR has been installed at a temperature below 95° Fahrenheit, and not adjusted for temperature during the rail laying operation, it should be adjusted as soon as weather conditions have brought the rail to a temperature of 95° Fahrenheit or higher.
- C. The Contractor shall be responsible for recording the rail temperature for which each CWR is anchored. He should forward this information to the Engineer, retaining one copy for his record.
- D. ADJUSTMENT FOR OTHER RAIL TEMPERATURE.
- 1. To adjust CWR for a temperature higher than that at which it was anchored, its length or the length of its buffer rails must be decreased. When it is to be adjusted for a temperature lower than that at which it was anchored, the length must be increased.
 - 2. The number of inches by which a CWR should be decreased or increased to adjust its length for a temperature higher or lower than that at which it was anchored or adjusted may be calculated by taking the difference in degrees Fahrenheit by the length of the CWR in feet, and multiplying the product by 0.000078.
 - 3. For practical purposes, the increase or the decrease in length required to adjust selected lengths of CWR for the difference between their actual measured temperatures at time of anchoring or adjustment and a rail temperature of 95°F., may be taken from the following table:

Temp Diff.(°F)	Length of Unrestrained Rail							
	200'	400'	600'	800'	1,000'	1,200'	1,400'	1,600'
5°	1/8"	1/4"	1/4"	1/4"	1/2"	1/2"	1/2"	1/2"
10°	1/8"	1/4"	1/2"	1/2"	3/4"	1"	1"	1-1/4"
15°	1/4"	1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	1-3/4"
20°	1/4"	1/2"	1"	1-	1-1/2"	1-3/4"	2-1/4"	2-1/2"
25°	3/8"	3/4"	1-	1-	2"	2-1/4"	2-3/4"	3"
30°	1/2"	1"	1-	1-	2-1/4"	2-3/4"	3-1/4"	3-3/4"
35°	1/2"	1"	1-	2-	2-3/4"	3-1/4"	3-3/4"	4-1/4"
40°	5/8"	1-	1-	2-	3"	3-3/4"	4-1/4"	5"
45°	3/4"	1-	2"	2-	3-1/2"	4-1/4"	5"	5-1/2"
50°	3/4"	1-	2-	3"	4"	4-3/4"	5-1/2"	6-1/4"

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

55°	7/8"	1-	2-	3-	4-1/4"	5-1/4"	6"	6-3/4"
60°	7/8"	1-	2-	3-	4-3/4"	5-1/2"	6-1/2"	7-1/2"
65°	1"	2"	3"	4"	5"	6"	7"	8"
70°	1-	2-	3-	4-	5-1/2"	6-1/2"	7-3/4"	8-3/4"
75°	1-	2-	3-	4-	5-3/4"	7"	8-1/4"	9-1/4"
80°	1-	2-	3-	5"	6-1/4"	7-1/2"	8-3/4"	10"
85°	1-	2-	4"	5-	6-3/4"	8"	9-1/4"	10-
90°	1-	2-	4-	5-	7"	8-1/2"	9-3/4"	11-
95°	1-	3"	4-	6"	7-1/2"	9"	10-	11-
100°	1- 1/2"	3"	4- 3/4"	6- 1/4"	7-3/4"	9-1/4"	11"	12- 1/2"

Adjustment of CWR for Temperature Change

E. ADJUSTMENT BY MECHANICAL HEATING

1. Rail may be expanded after it has been laid in the rail seats of steel crossties before applying the resilient fasteners.
2. CWR should be heated so that expansion is introduced from one end of each string to the other in the direction of rail laying.
3. The number of inches each CWR string should be expanded during the rail laying operation may be by calculation or from the previous table in **Section D3**.
4. Space equal to the amount of expansion needed for each string of CWR should be provided between the end of that string and the near end of the next adjacent string. A minimum of 32 ties should be have resilient fasteners applied on each side of the rail near the end of the adjacent string to hold in place and avoid closing the expansion gap of the string being heated.
5. Heating should be commenced at the beginning of the first CWR string and steadily applied while moving forward until the required expansion has been obtained at the end of the string. Uniformity of expansion is to be controlled by marking each quarter of the string and introducing expansion as follows:
 - a. 1/4 point-1/4 of total required expansion
 - b. 1/2 point-1/2 of total required expansion
 - c. 3/4 point-3/4 of total required expansion
6. Quarter points should be marked on the rail and a steel crosstie, so the amount of expansion can be accurately determined. The crosstie used for marking as a reference point must be one that is fully ballasted with full width ballast shoulders and fully tamped so it will not move as rail expands.
7. In the event the first half of the heated CWR string does not have the required expansion at each quarter point, the heater will back over the heated portion, without applying heat, and then reheat the rail until the necessary expansion is obtained.

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

8. As heating is progressed, a minimum of every second resilient fastener pair should be applied at each side of the rail that will prevent the rail from losing expansion
9. At the end of the completely expanded string, a minimum of thirty-two (32) fastener pairs should be applied, immediately after the gap is closed, to hold the expansion.
10. The entire CWR is to have all resilient rail fasteners applied before trains are permitted to operate over it.

F. ADJUSTMENT BY MECHANICAL PULLING

(Rail destressing for steel crossties with resilient fasteners using Vortok® Rollers)

1. Rail Destressing shall be in accordance with AREMA and the following:
 - a. Select rail length to be adjusted to $\pm 1\%$.
 - b. Establish isolation points so that rail outside of the length will not be affected by the process.
 - c. Release the rail from the fastening system.
 - d. Install the Vortok® Rollers in accordance with the manufacturer's instructions.
 - e. Cut the rail and then establish the stress free condition between the isolation points by vibrating it (e.g. by "rattling" the rail).
 - f. Measure the shade rail temperature to $\pm 1^\circ\text{F}$.
 - g. Determine the extension or rail gap by the following equation: (but if the rails are to be welded ensure that the weld gap is taken into account in determining the stress free gap)

$$\Delta L = a(T) L = (T_D - T_A)L$$

Where: a = coefficient of thermal expansion = $6.5 \times 10^{-6} / \text{F}^\circ$

T_D = design temperature (F°)

T_A = actual temperature (F°)

L = rail length (ft.)

- h. Measure the actual stress free gap to $\pm 1/16"$.
- i. Carry out the rail length adjustment, for example, by:
 - 1) cutting the rails to achieve the necessary stress free gap (i.e. plus the weld gap);
 - 2) stretching the rails to close the gap to the necessary weld gap. This assumes that the rail is to be welded by the aluminothermic welding process. Where other welding processes are used the stress free gap will need to be specified. Rail pullers will be used to pull the rail to the desired distance.
 - 3) The rail shall be welded and the pullers will be released once the rail is cooled less than six hundred (600) F°.
 - 4) Remove the Vortok® rollers, Reinstall the rail fastening system and grind the welds flush.

G. ADJUSTMENT BY NATURAL TEMPERATURE CHANGE.

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

1. When it is necessary to adjust CWR already in track, the required increase or decrease may be found by taking the difference between desired and recorded temperatures of each string of CWR and calculating the amount of adjustment as shown in **Section e(2)** or determined from the table shown in **Section e(3)**
2. All resilient fasteners must be removed from strings of CWR requiring adjustment to permit the desired expansion or contraction. The web of the rail should be tapped with a hammer or approved mechanical device used to free the rail. **DO NOT STRIKE THE HEAD OF THE RAIL.** All resilient fasteners must be reapplied immediately after the desired change in rail length has been obtained.
3. Where buffer rails are used between adjacent strings of CWR, the necessary adjustment should be made by removing the buffer rails, cutting at least 18 inches from the end of each affected CWR string, to remove bolt holes, and field welding in rails of required length.
4. When it is necessary to adjust CWR strings in territory where buffer rails have been eliminated the following should be done:
 - a. Where each of several adjacent strings need adjustment, it is desirable to make the adjustment for 3 or 4 strings at a time, if possible. For this purpose, a rail cut should be made near the center of the adjustment area.
 - b. Where adjoining CWR strings are connected directly by a bolted rail joint, the adjustment for either compression or tension should be made by cutting out the drilled end of each CWR and field welding in a rail of required length.
 - c. Where CWR strings are field butt welded together, the adjustment may be made by cutting and butt welding by an approved process or welding in a piece of rail.
5. When the ambient temperature is such that the welded rail cannot be placed in its final position, the contractor shall place it on the rail seats and apply a number of fasteners to permit operation of work trains and on-track equipment.

H. FINAL SURFACING

1. For the final surfacing lift, which is normally less than one inch, three insertions under the rail seats and one insertion in the center of the tie is recommended. Lining Steel Ties after tamping will cause a gap to form adjacent to the end spades. If this gap is not filled immediately by tamping, the steel ties will develop a “memory” effect and are likely to return to their previous alignment.

I. BALLAST COMPACTION

1. After completion of tamping and prior to regulating, it is strongly recommended that the ballast of ALL tracks constructed utilizing steel crossties be compacted or stabilized using equipment designed specifically for such purposes. Alternately, a locomotive or locomotives, or groups of

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

loaded or empty railcars may be repeatedly operated over the subject sections of track equivalent to the passage of approximately 50,000 gross tons of rail traffic over the subject section of track.

2. All sections of ballasted steel tie track constructed in areas to receive paving material or installation of highway grade crossing surface panels MUST be compacted with an on track ballast compactor or track stabilizer.

J. BALLAST REGULATING AND DRESSING

1. After final surfacing, ballast should be regulated and additional ballast distributed if necessary, to ensure that the cribs between the ties are full of ballast to a level one inch above the top of the steel ties, and to ensure proper ballast shoulder width. The ballast regulator broom and blades should be adjusted so that the broom elements do not contact the resilient fasteners during regulating, in order to avoid knocking off the resilient fasteners.

1.12 INSPECTION FOLLOWING INSTALLATION

A. Inspection at Conclusion of the Work

1. Newly installed steel crosstie installations shall be inspected at the conclusion of the work to ensure that the installation standards specified in this standard have been achieved. This inspection shall be carried out by a competent employee.
2. Paving materials or grade crossing surfaces shall not be installed on any section of constructed track until the installation has been inspected and approved by the Engineer.

1.13 FOLLOW UP INSPECTION REQUIREMENTS

A. The satisfactory installation of steel crossties should also be verified by review of its in-service performance as per current applicable inspection standards for the class of track in question.

B. This should include identification of any obvious problems during track patrol inspections, the results of the track geometry recording car if applicable and assessment during detailed walking inspections including:

1. Sample check that ballast in pods is still to standard (minor ballast settlement and a low level of loosening is permissible, typically ballast in the inspection hole can be moved with a finger but the movement shall be restricted).
2. Visually assess if ballast profile is still to standard.
3. Visually assess that the deflection of steel crossties under load is consistent and no more than $\frac{1}{4}$ ".
4. Visually inspect for any signs of ballast disturbance.

SECTION 341116.22 – CONSTRUCT WELDED TRACK – STEEL CROSSTIES

5. Visually inspect for any top and line irregularities.
6. Check for damaged or missing fastenings.

END OF SECTION

REVISED BID FORM (4/28/23) - SJPC-22-49 RB

Having carefully examined the Contract Drawings, Technical Specifications, and Agreement for this project, and having examined all conditions affecting the work, the undersigned proposes to complete the work as set forth therein and to furnish all equipment, supervision, transportation, labor, materials and services required to execute the work in accordance with the Contract Drawings and Documents for the following Unit Price Costs, unless noted otherwise:

It is understood and agreed that any incidental work necessary to complete the Project in its entirety will be included in the line items, unit prices and lump sum bid, whether or not the line item or items shall specifically state the nature of the incidental work. The line item or items which the incidental work, and the incidental costs, are included shall be selected by the Bidder. It is also understood and agreed that each line item of work in the Proposal shall include all supervision and personnel costs, markups, and other costs envisioned by the Bidder. In other words, all line item costs bid shall be "all-inclusive". Therefore, the unit prices to be entered on the Bid Form are obtained by dividing the total cost bid to complete the line item by the quantity shown of the form. The bid shall be determined by adding all line item costs for all Bid Items under Base Bid. This grand total Base Bid Price shall constitute the Lump Sum Base Bid Cost of the Project.

Negotiations for the adjustments of the unit price of any item will be completed only when that item and other work or items affecting its quantity have been completed and the total net change in the quantity of such item can be ascertained with sufficient accuracy to determine if it be eligible for consideration in accordance with the foregoing provisions.

The bidder must also furnish a price for all Optional Bids or Alternates requested, as well as all separate unit price items requested. Failure to do so will constitute an incomplete bid, which will be rejected by the South Jersey Port Corporation.

The Contractor agrees that this proposal will be valid and binding for a period of ninety (90) days to allow the Port time to evaluate the complete proposal to allow for the decision. The Port Engineer will officially notify the Contractor of the acceptance of their bid within ninety (90) days following the bid date pending compliance with delivering the requested documentation.

The undersigned accepts responsibility for having completely examined and understood the intent of the Bid Drawings and Documents; for having fully examined the site of the work; and for having obtained all pertinent information affecting the work.

Contractor to provide a lump sum proposal in US dollars to supply all necessary design services, materials, labor, tools, consumables, transportation, water craft, cranes, supervision, PPE, all materials and material controls, and any temporary facilities as necessary to provide for the complete and functional scope of work as described.

REVISED BID FORM (4/28/23) - SJPC-22-49 RB

Estimated Time Required to Complete All Work in Calendar Days : 540 Days

Bidder shall provide rough schedule, including estimated start and completion dates.

All work shall be performed on weekdays during daylight hours. Work may be performed on Saturdays and/or other hours pending prior approval by South Jersey Port Corporation.

We Acknowledge Receipt of the Following Addenda

1. ADDENDUM NO. _____ Dated: _____
2. ADDENDUM NO. _____ Dated: _____
3. ADDENDUM NO. _____ Dated: _____
4. ADDENDUM NO. _____ Dated: _____

If no addenda are received, indicate by writing or typing the word "NONE" in the space for first addenda.

SPACE LEFT INTENTIONALLY BLANK

REVISED BID FORM (4/28/23) - SJPC-22-49 RB

Item No.	Quant.	Units	Bid Item	Unit Price	Total
1	1	LS	MOBILIZATION / DEMOBILIZATION	\$	\$
2	1	LS	SURVEY & LAYOUT	\$	\$
3	1	LS	REMOVAL OF EXISTING PAVEMENT, CONCRETE AND RR TRACK FOR CONSTRUCTION OF NEW RR TRACK ON SOIL	\$	\$
4	1	LS	SELECT CONCRETE DEMOLITION AND REMOVAL OF RAIL TRACK ON DOCK	\$	\$
5	1	LS	EXCAVATION AND GRADING FOR PLACEMENT OF NEW TRACK ON SOIL	\$	\$
6	1	LS	PLACEMENT OF NEW RR TRACK ON SOIL, INCLUDING SUB-BALLAST, BALLAST, TIES & NEW RAILROAD TRACK	\$	\$
7	1	LS	PLACEMENT OF NEW RR TRACK ON DOCK EMBEDDED IN CONCRETE	\$	\$
8	1	EA	NO. 8 DOUBLE TONGUE TURNOUT	\$	\$
9	1	LS	TRACK CONCRETE TRANSITION SLAB AND ENCASEMENT	\$	\$
10	1	LS	PRECAST GRADE CROSSING	\$	\$
11	2	EA	CRANE RAIL CROSSING FROGS	\$	\$
12	2	EA	RAIL DERAILS	\$	\$
13	1	LS	REMOVE & ABANDONED STORM WATER INFRASTRUCTURE	\$	\$
14	1	LS	STORMWATER INFRASTRUCTURE INCLUDING EXCAVATION, INLETS, STORM PIPING AND ASSOCIATED WORK	\$	\$
15	1	EA	REMOVE AND RELOCATE EXISTING FIRE HYDRANT & NEW BOLLARDS	\$	\$
16	1	LS	PAVING, INCLUDING EXCAVATION, GRADING, SUB-BASE, BASE COURSES AND WEARING COURSE	\$	\$
17	1	LS	REMOVE EXISTING LOADING DOCK & CONSTRUCT NEW LOADING DOCK AT SHED 1	\$	\$
18	2	EA	ROLL UP DOORS, INCLUDING REQUIRED DEMOLITION FOR NEW DOORS AT SHED 1	\$	\$
19	1	LS	CONCRETE SLABS AT DOORS IN SHED 1	\$	\$
20	1	LS	FENCE & GATE INSTALLATION AT CLINTON STREET	\$	\$
21	1	LS	CREDIT FOR SALVAGE VALUE OF EXISTING RAIL	\$	\$
22	1		ALLOWANCE - REMOVAL OF UNDERGROUND OBSTRUCTIONS	\$ ----	\$ 75,000.00
23	1		ALLOWANCE - TESTING, TRANSPORT & DISPOSAL OF REGULATED SOILS	\$ ----	\$ 75,000.00
24	1		ALLOWANCE - TRANSPORT & DISPOSAL OF PIPE ACCUMULATED DEBRIS MATERIALS	\$ ----	\$ 25,000.00
TOTAL BID					\$
<p>NOTES:</p> <ol style="list-style-type: none"> 1. All Bid Items shall include the descriptions as defined within Section 012000 - Price and Payment Procedures. 2. The total of the Items above shall constitute the Total Bid for the Contract. 3. The following Supplementry Bid Items are only applicable for changes to the Scope of Work and to not constitute part of the Total Bid amount. 					
ADDITIONS AND DELETIONS					
Item No.	Quantity	Units	Supplementary Bid Item	Unit Price	Total
A	10	EA	ALTERNATE PILE REPAIR DETAIL PER SHEET S104 SECTION 13	\$	\$

REVISED BID FORM (4/28/23) - SJPC-22-49 RB

Total Bid Price \$ _____

Total Additions & Deletions \$ _____

Contractor: _____

Primary Contact Name: _____

Title: _____

Signature: _____

Date: _____

Business Address: _____

Phone No.: _____