

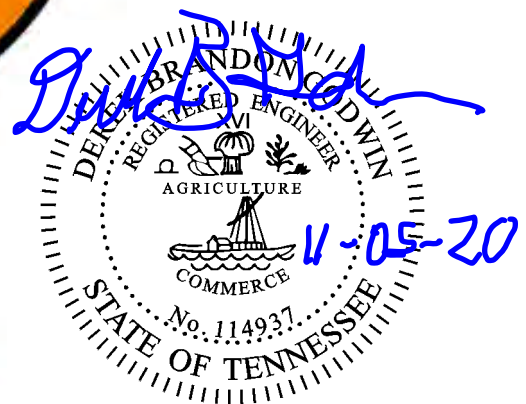
**REQUEST FOR PROPOSAL TO PERFORM TRACK AND BRIDGE
REHABILITATION FOR KNOX COUNTY RAILROAD AUTHORITY (“KCRA”)**

TDOT PROJECT NO.: 47RR20S3004

KNOXVILLE & HOLSTON RIVER RAILROAD (“KXHR”)

**WORK TO COMPLY WITH FUNDING REQUIREMENTS OF THE TENNESSEE
FY2020 SHORT LINE RAILROAD PRESERVATION GRANT FUNDS**

November 5th, 2020



Prepared by Railroad Consultants, PLLC, © 2020 All Rights Reserved
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SECTION 1 - GENERAL REQUIREMENTS

1.1 Name and Location of Project

All work is in Knox County, Tennessee, on the Knoxville & Holston River Railroad.

TDOT PROJECT NUMBERS

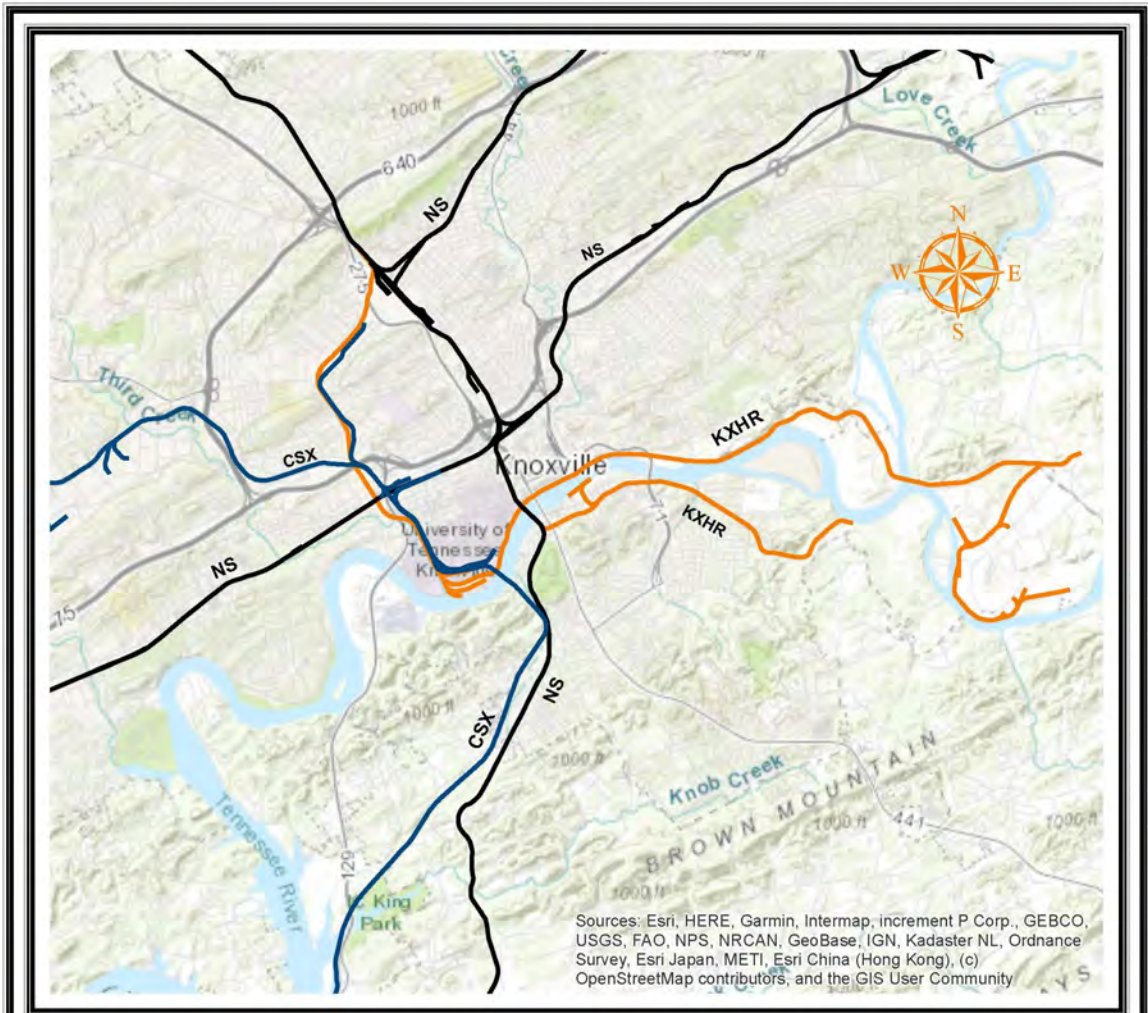
47RR20S3004

There are four (4) projects from TDOT#47RR20S3004 in this RFP.

Project #1	Install Switch Point Protectors in various locations.
Project #2	Installation of 12,100 TF of new rail, anchors and weld out.
Project #3	Various bridge improvements/repairs on the timber open deck bridge at the KA 1.8.
Project #4	Various bridge improvements/repairs on the timber open deck bridge at the KA 2.5.

VICINITY MAP

SEE ATTACHMENTS FOR PROJECT LOCATION MAPS



Knoxville and Holston River Railroad

1.2 DEFINITION OF TERMS

When the following terms are used in these Specifications, it is understood that they have the meaning herewith given:

1.2.1. PROJECT DOCUMENTS

The Plans, drawings, maps, typical sections, standard drawings, cross-sections and/or profiles, Specifications, Bid Sheet, Agreement, Addenda, and all other attachments herein showing or describing the character of the work prepared as a guide for construction of the proposed project.

1.2.2. "SHOULD"

Where the term "should" appear in these guidelines, it is to mean that the information following is a recommendation for the proposed project.

1.2.3. "MUST;" "WILL;"

Where the terms "must," and/or "will" appear in these Specifications, it is to mean that the information following is a requirement for the proposed work.

1.2.4. AUTHORITY

The Knox County Railroad Authority, the Honorable Glenn Jacobs, Chairman, 400 Main Street, Suite 615, Knoxville, TN 37902.

1.2.5. ENGINEER

Railroad Consultants, PLLC 213 Uptown Square, Murfreesboro, TN 37129
Phone: (615) 663-1142

The project manager for this project is Derek Godwin, PE and can be contacted at the office phone listed and may be contacted by email at dgodwin@railroad-consultants.com.

1.2.6. RAILROAD

Knoxville & Holston River Railroad Co., INC.

1.2.7. CONTRACTOR

The company and/or individual contracted to perform the proposed work.

1.2.8. AGREEMENT SCOPE OF WORK

The final Scope of Work as per the tri-party agreement between the State, Authority and Railroad.

1.2.9. TDOT - the Tennessee Department of Transportation

The state agency responsible for controlling and monitoring the railroad track and bridge rehabilitation projects on Tennessee short line railroads.

1.2.10. FRA - the Federal Railroad Administration

The Federal agency responsible for establishing general safety requirements and enforcing those requirements.

1.3 ADVERTISEMENT FOR BIDS

**Knox County Railroad Authority
Bridge Rehabilitation Project
on the
Knoxville & Holston River Railroad**

Separate sealed bids for *TDOT PROJECT NO.: 47RR20S3004*, Short Line Railroad Preservation Grant Funds Program FY 2020 for the Knox County Railroad Authority, will be received by Railroad Consultants, PLLC, at 213 Uptown Square, Murfreesboro TN 37129 until 12:00PM local time (Central Standard Time) on the 30th day of November 2020, and then publicly opened and read aloud at same address on the 1st day of December 2020 at 10:00AM local time (Central Standard Time). Bidders are urged to have their bids in at least one day early since reliability with overnight service is currently reduced.

The work by Contractor will consist of furnishing all materials, labor, supervision, transportation, tools, equipment, and items incidental to the construction of various bridge improvements and repairs on the timber open deck bridges at milepost locations KA 1.8 and KA 2.5. Materials and labor will adhere to this document and other project documentation provided as described herein.

This project is funded under an agreement with the Tennessee Department of Transportation and must comply with TDOT 2020 Prevailing Wage Rates. Bidders must be licensed general Contractors to perform the type construction herein described as required by the Tennessee Code Annotated, Title 62, Chapter 6, Section 62-6-119. A copy of the law is attached to the Project Documents.

Each invitation to bid will be available for public viewing for at least 21 consecutive days on www.railroad-consultants.com/bidding-opportunities/ and will also be posted on www.tn.gov/tdot/tdot-construction-division/bid-lettings.html under "2020 Bid Lettings". This will begin the procurement timetable.

Each bidder must deposit with his bid, security in the amount, form and subject to the conditions provided in the Information for Bidders.

No Bidder may withdraw his bid within 120 days from bid opening. Bid results will be available on under "Bid Lettings" and will be made public for at least 7 days on the website. All contracts awarded will be public information.

The owner reserves the right to waive any informalities or to reject any or all bids. Award of the bid is contingent upon availability of funds.

Time Limit – work will begin within 30 days of the date of a written notice to proceed and will be completed within 45 calendar days from the date of written notice to proceed.

Liquidated Damages: A penalty of \$500 per calendar day will be assessed to the Contractor for each day beyond the stated time limits until the project is 100% complete.

A non-mandatory job showing will be held at Anderson Hall, 300 West Quincy Avenue, Knoxville, TN 37917 at 9:00AM local time (Eastern Standard Time), on the 16th day of November, 2020. Participants must provide their own hi-rail vehicles.

1.4 Instruction to Bidders

- 1.4.1 Separate sealed bids for *TDOT PROJECT NO.: 47RR20S3004*, Short Line Railroad Preservation Grant Funds Program FY 2020 for the Knox County Railroad Authority, will be received by Railroad Consultants, PLLC, at 213 Uptown Square, Murfreesboro TN 37129 until 12:00PM local time (Central Standard Time) on the 30th day of November 2020, and then publicly opened and read aloud at same address on the 1st day of December 2020 at 10:00AM local time (Central Standard Time). Bidders are urged to have their bids in at least one day early since reliability with overnight service is currently reduced.
- 1.4.2 The work by Contractor will consist of furnishing all materials, labor, supervision, transportation, tools, equipment, and items incidental to the construction of various bridge improvements/repairs on the timber open deck bridges at milepost locations KA 1.8 and KA 2.5. Materials and labor will adhere to this document and other project documentation provided as described herein.
- 1.4.3 Each invitation to bid will be available for public viewing for at least 21 consecutive days on www.railroad-consultants.com/bidding-opportunities/ and will also be posted on www.tn.gov/tdot/tdot-construction-division/bid-lettings.html under "2020 Bid Lettings". This will begin the procurement timetable.
- 1.4.4 Each bidder must deposit with his bid, security in the amount, form and subject to the conditions provided in the Information for Bidders.
- 1.4.5 Bid openings will be conducted by the Railroad and the Engineer. This information will be included in the invitation to bid and a bid tally will be taken at the public bid opening. All bid documents received and opened publicly will become public information.
- 1.4.6 No Bidder may withdraw his bid within 120 days from bid opening. Bid notifications will be conducted by the Engineer on behalf of the Railroad.
- 1.4.7 The owner reserves the right to waive any informalities or to reject any or all bids. Award of the bid is contingent upon availability of funds.
- 1.4.8 A non-mandatory job showing will be held at Anderson Hall, 300 West Quincy Avenue, Knoxville, TN 37917 at 9:00AM local time (Eastern Standard Time), on the 16th day of November, 2020. Participants must provide their own hi-rail vehicles.
- 1.4.9 Time Limit – work will begin within 30 days of the date of a written notice to proceed and will be completed within 60 calendar days from the date of written notice to proceed.
- 1.4.10 Liquidated Damages: A penalty of \$500 per calendar day will be assessed to the Contractor for each day beyond the stated time limits until the project is 100% complete.

- 1.4.11 The Contractor is required to submit a sealed bid. The sealed envelopes containing the bids are required by to have the following information on the outside of the envelope:

**Contractor's Tennessee State License No.,
Contractor's License Expiration Date and
Contractor's License Classification**

- 1.4.12 The outside of the bid envelope should also have the following information:

**Contractor's Name, Address, Office
Phone No.,
Project Name and Date of Bid Opening**

- 1.4.13 **Based on requirements of state law, sealed bids that do not have the required information on the outside of the bid envelope will be considered rejected and will not be opened. Bids that are not signed by an authorized agent of the Contractor will be rejected.**
- 1.4.15 No responsibility will attach to the Engineer or Railroad for the premature opening of a bid not properly addressed, identified, and/or delivered to the proper destination.
- 1.4.16 Bids that are sent express or overnight must be placed in a sealed envelope with the required information on the outside of the sealed envelope, placed within the overnight or express packet. The overnight or express mail envelope is not to be used as the sealed bid envelope.
- 1.4.17 All bids must be received and in-hand at the time and place of the bid opening. Each Bidder assumes the responsibility for having his bid received at the designated time and place of the bid opening. No consideration will be given to bids that arrive after the designated opening time and date regardless of postmark. The Railroad assumes no responsibility for bids sent via the U.S. Mail or any other carrier or service.
- 1.4.18 The Contractor will submit any questions related to the project, in writing, within 5 days of the scheduled Bid Opening. Answers to the questions will be forwarded to all Contractors that have ordered Project Documents.
- 1.4.19 The Railroad or its representative may make such investigations as it deems necessary to determine the qualifications and ability of the Bidder to perform the work, and the Bidder will furnish the Railroad all information and data necessary for this purpose at the Railroad's request. The Railroad reserves the right to reject any bid if evidence submitted by, or investigation of, such Bidder fails to satisfy the Railroad that such Bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated herein.
- 1.4.20 Conditional bids will not be accepted. The Bid Sheet will not be altered in any way. No time limits, units, descriptions, or unit quantities will be changed by the Bidder, or the Bid may be rejected.
- 1.4.21 **Bid Bond: Cash, a bank certified cashier's check, money order, or a bid bond duly executed by the Bidder as principal and having surety thereon a surety company in the amount of 5% of the bid, must accompany each bid, or bid will be rejected.**

- 1.4.22 **Each Bidder must inform himself/herself fully of the conditions relating to the construction of the project. Also, at the time of the opening of bids, each Bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Project Documents, including the Plans, Specifications, and other portions of the Project Documents, including the Job Showing Notes, and all addenda. Failure to do so will not relieve a successful Bidder from its obligation to perform all labor necessary to carry out the intent and provisions of the Project Documents.**
- 1.4.23 By the act of submitting a bid, the Bidder represents the following:
- 1.4.23.1 The Bidder has found the Project Documents, including the Plans, Specifications, and other portions of the Project Documents, including all addenda, free from ambiguities and sufficient for the purpose intended.
 - 1.4.23.2 The Bidder and all the workers, employees, and subcontractors that the Bidder intends to use are skilled and experienced in the type of construction represented by the construction Plans and Project Documents bid upon.
 - 1.4.23.3 Subcontractors to be used on this project will be listed by the Bidder, and submitted with the Bid, using the form provided.
 - 1.4.23.4 The bid figure is based upon the Project Documents, Job Showing Notes, and properly issued written addenda and not upon any oral or other written representation.
 - 1.4.23.5 The Contractor is responsible for ensuring that it has received all addenda and signed and returned all addenda prior to the Bid Opening.
 - 1.4.23.6 Neither the Bidder nor any of the Bidder's employees, agents, intended suppliers or subcontractors have relied upon any oral representations from the Railroad, or the Railroad's employees or agents including architects, Engineers or consultants, in assembling the bid figures.
 - 1.4.23.7 By submitting a bid, the Bidder represents and warrants that such bid is genuine and not sham or collusive or made in the interest or in behalf of any person not therein named, and that the Bidder has not directly or indirectly induced or solicited any other Bidder to put in a sham bid, or any other person, firm or corporation to refrain from bidding and that the Bidder has not in any manner sought by collusion to secure to that Bidder any advantage over any other Bidder.
- 1.4.24 A Bidder may withdraw his bid before the expiration of the time during which the bids may be submitted without prejudice to the proposed, by submitting a written request of withdrawal to the Railroad.
- 1.4.25 No consideration will be given to bids, which arrive after the designated opening time and date.
- 1.4.26 No interpretation of the meaning of the Project Documents, including Plans, Specifications or other Bid Documents will be made orally to any Bidder. Requests for information must be timely, and made in writing, and submitted to the Engineer at least five (5) working days prior to the bid opening date. The response to such inquiries will be made in writing and made available to all bidders.
- 1.4.27 No materials, equipment or machinery will be furnished by the Railroad other than a work train locomotive with crew, which can be furnished at a cost of \$1500 per 8-hour day.

1.5 Scope of Work

1.5.1 Intent of this Project Document

It is the intent of this document (“RFP”), to describe the complete work to be performed under the contract.

Except as otherwise provided, the Contractor will furnish all materials, labor, supervision, supplies, tools, equipment, and all items incidental to construction necessary for the proper execution and completion of the work.

Only the materials furnished by the Contractor will be reimbursed.

The Contractor will furnish all parts, materials, labor, fasteners, tools, equipment, services, and supervision related to items incidental to construction, whether described in this document or not.

Punch List and Contract Close-out: The Engineer will conduct a final walk-through at the end of the project with the Contractor and will develop a punch list of items to be completed or repaired. The Contractor will guarantee its workmanship for a period of one year from the date of final project acceptance (date of advertisement of the Notice of Completion).

- 1.5.2** The Contractor is responsible for the payment of all state and local sales taxes. The Contractor will be responsible for including the cost of sales taxes in the bid prices. The Railroad will not make separate reimbursements for sales taxes unless there is a separate bid item for sales taxes.

- 1.5.3 Released Materials:** The Contractor is responsible for handling all materials released or removed as part of the project, as outlined below:

The Railroad will retain all steel components: rail, plates, anchors, spikes, etc. The Contractor will be instructed as to the location where the steel components will be stockpiled. The project will not be considered 100% complete until all Contractor owned released materials have been removed from the right-of-way, and all Railroad owned materials have been handled as per the Project Documents. All materials not to be retained by the Railroad will become the property of the Contractor and will be removed from the right-of-way and disposed of in a proper and legal manner, within the project time limits. The Contractor will furnish proof of reuse, resale, or disposal to the Railroad for all bridge timbers.

- 1.5.4** Final clean up: Upon completion of the project, and before acceptance and final payment is made, the Contractor will clean the right-of-way, and all ground occupied by the Contractor in connection with the work of all rubbish, debris, materials, and equipment. All work areas will be left in a neat and presentable condition. If areas of the right-of-way are disturbed by the Contractor, the Contractor will restore said areas to proper grade, including ditch lines, and will seed and mulch the areas to provide a permanent stand of grass. The project will not be considered 100% complete until final cleanup is performed.

- 1.5.5** The Contractor will perform all labor in quantities as per the Bid Sheet and final cost schedule.

GENERAL SCOPE OF WORK

- Prior to the start of work, furnish the Engineer with a construction schedule in Gantt Chart format, CPM format, Microsoft Project, or another approved format.
- Prior to the start of work, furnish the Engineer with a list of equipment to be used on the project.
- Prior to the start of work, provide the Engineer with the contact information for the Contractor's representative for project. Also provide the Contractor's office contact information.
- The Scope of Work is defined herein, and by the final cost schedule which is a part of the Agreement. After the Agreement is fully executed, any changes in the Scope of Work, quantities, work locations, or other aspects of the project must be approved through the change order process, with the change order approved by the Engineer, and signed by the Contractor, Railroad, and State before making changes.
- Furnish a working cell phone (or multiple phones if necessary), and have the foreman or superintendent on site keep the working cell phone on hand at all times for communication with the Railroad, satisfying the Railroad's requirements for communication between the Railroad and Contractor. If required by the Railroad to comply with its safety rules, provide a working radio on the proper frequency.
- Keep a copy of the Project Documents, including, but not limited to Plans and Specifications, on site during the entire course of the project.
- Maintain a daily log of weather conditions, equipment in use, working limits, material installed and other relevant data and submit daily log forms, stone tickets, seeding supply tickets, and other delivery forms to the Engineer on a weekly basis.
- Comply with all requirements of the safety section. Each employee that will be working on the railroad right-of-way must complete the annual safety training and/or safety orientation required by the Railroad; conform to the Railroad safety rules; and conform to FRA bridge and track roadway worker protection safety regulations.
- Provide access to the work site. Make arrangements, if necessary, with private landowners. Agreements with private landowners must be in writing, and a copy of any agreements must be provided to the Engineer prior to start of work.
- Furnish a performance and payment bonds, and evidence of the proper insurance to the Engineer at or prior to the Pre-Construction Conference, or earlier if required, meeting the requirements of the Project Documents.
- Perform all construction staking and layout work required for the project.
- Clean the project site of all project related debris, released materials and rubbish, and perform grading, dressing, and seeding with mulch to provide a permanent stand of grass on all disturbed areas, restoring all disturbed areas to pre-project conditions;

- Maintain close contact with the Engineer and Railroad as necessary regarding work to be performed each day, working limits, safety briefings, and permission for track time.
- The on-site Contractor Superintendent or Foreman is responsible for contacting the Engineer on a weekly basis regarding schedule and work in progress.
- Work in such a manner to protect the existing tracks, roadbed, bridges, culverts, streets, driveways, right-of-way, and private property, and other structures and appurtenances from any type of damage during the construction or demolition process, and immediately repair any damage resulting from the Contractor's actions or inactions at the Contractor's expense.

Specific Tasks Include, but are not Limited to the following:

- Flag the right-of-way as necessary to insure that the Contractor does not encroach upon adjacent property owners;
- Inform the Engineer of haul routes to be used prior to the start of work, and provide all traffic control measures required for the safe movement of the Contractor's equipment and the traveling public conforming with the most recent edition of the MUTCD;
- Coordinate any road closings or detours, if necessary, with the local City, County, or State road agency, the local School Superintendent, and local emergency service agencies, if the road is to be closed. Furnish, install, maintain and remove any traffic control devices required for traffic control.

1.6 Control of Work

- 1.6.1 The work will be done in accordance with this document, notes from the pre-construction meeting, the final cost schedule, and addenda.

The Engineer will decide all questions that may arise as to the quality or acceptability of materials furnished; the interpretation of the document, notes from the pre-construction meeting, the final cost schedule, and addenda; and the acceptable fulfillment of the contract on the part of the Contractor.

- 1.6.2 Coordination of Project Drawings, Plans, Specifications, and Special Provisions - The Project drawings, Plans, Specifications, special provisions, Job Showing Notes, and addenda are essential parts of the Project Documents, and a requirement occurring in one is as binding as though occurring in all. They are intended to coordinate with each other and to describe and provide for the complete work. In cases of disagreement, Project Drawings and Plans will govern over Specifications, special provisions will govern over Project Drawings, Plans and Specifications, Job Showing Notes will govern over Plans, Specifications, and special provisions, and addenda will govern over Job Showing Notes, Project Drawings, Plans, Specifications and special provisions.

- 1.6.3 Cooperation of Contractor- The Contractor must give the work his constant attention to facilitate the progress thereof and will cooperate with the Engineer in every possible way. The Contractor must have a competent superintendent on the project site who is authorized to receive orders and act for the Contractor, regardless of how much of the work is subcontracted.

The contract under which the Contractor is working is between the Contractor and the Railroad. The Railroad and TDOT have a separate agreement regarding funding for the work. The Railroad may not arbitrarily change the quantity of materials, type of work, or work location without proper change order.

- 1.6.4 Construction Staking- The Contractor is responsible for all construction staking and/or layout work required for the completion of the project, including flagging the existing right-of-way, and any other staking or layout work that may be necessary. No construction staking will be provided by the Engineer or Railroad.

- 1.6.5 Site Visits by the Engineer-The Engineer will make periodic site visits to ascertain the progress of work, and to review work completed in connection with the approval of Contractor invoices. The Contractor will furnish the Engineer with every reasonable facility for ascertaining whether the work as performed is in general accordance with the requirements and intent of the contract.

1.7 Control of Materials Furnished by Contractor

The Contractor is responsible for the safety, security, and protection of all materials to be furnished and used in the project. The Contractor will not be paid for any stolen or damaged materials, excess materials, or materials delivered to the project site but not installed as a part of the project. The Contractor is responsible for the safety, security and protection of all materials released to the Contractor as a part of this project.

1.8 Materials Furnished by Others

All materials to be installed will be provided by the Contractor.

1.9 Contractor's Responsibilities

1.9.1 General Conditions

- 1.9.1.1 Specifications apply to all work performed by the Contractor for the Knoxville & Holston River Railroad Co., INC. ("KXHR").
- 1.9.1.2 Periodic site visits and final acceptance of the work will be made by the Engineer.

- 1.9.1.3 Pay requests will be made by using an invoice form approved by the Engineer, indicating previous quantities and amounts, current quantities and amounts, and totals. The invoice form must be signed by an Authorized representative of the Contractor for each individual pay request. The form is to be submitted to the Engineer for processing to the Railroad. Pay requests may be submitted as needed by the Contractor. Mobilization can be paid as soon as the Contractor moves onto the project site.
- 1.9.1.4 Documentation for items to be paid by unit quantity, or if required in the Project Documents, must be submitted on a daily or weekly basis to the Engineer, prior to the submittal of invoices, with other supporting documents attached to the invoice for payment. If the Contractor makes a written request to the Engineer, the Engineer will forward an Excel Spreadsheet version of an invoice form to the Contractor via email.

1.9.2 Special Requirements

- 1.9.2.1 A Pre-construction Meeting will be scheduled and held by the Engineer with representatives from the Railroad, Contractor, and, if available, the TDOT representative. At the time of the Preconstruction Meeting, the Contractor will submit its material delivery schedule, Performance and Payment Bonds, and certificate(s) of Insurance. The Engineer will investigate the limits of the Bonds and Insurance provided. If the Engineer determines that a Pre-construction Meeting should be held by phone conference call, then the Contractor will furnish its work schedule, Performance and Payment Bonds and certificate(s) of Insurance prior to entering the railroad right-of-way, after the Project Documents have been fully executed by both the Railroad and the Contractor.
- 1.9.2.2 The operations performed under this contract will be conducted in such a manner and sequence as to cause the least practical interference with the traveling public, fire protection, or other private or public services. It is the Contractor's responsibility to maintain traffic on public and private roads and grade crossings.
- 1.9.2.3 The Contractor is responsible for checking plan quantities prior to bidding and will notify the Engineer of any discrepancies immediately. The Contractor is responsible for regulating the amount of materials placed and will immediately notify the Engineer of any discrepancies in Plan quantities. No quantities will be changed by the Contractor without written approval in the form of a change order, approved by the Engineer and Railroad.

- 1.9.2.4 The Contractor's on-site superintendent is required to telephone the Engineer on a weekly basis during the contract to report the week's Planned activities, whether work is scheduled or not.
- 1.9.2.5 The Contractor will maintain a record of all materials delivered. The Contractor will maintain a daily log of the work performed, the working limits, the materials installed, the labor and equipment on site and whether the equipment is in use or not, the type of work being performed, and the weather conditions. The log form must be signed by the Contractor's representative that day. The daily log form to be used is an attachment in Section 3. The daily logs will be completed by the Contractor daily and must be submitted to the Engineer on a weekly basis.
- 1.9.2.6 The Contractor will conform to all insurance requirements including Railroad Protective Insurance for bodily injury and property damage, as per the Project Documents herein. If the Contractor has general liability insurance that does not exclude work on or near railroads or railroad property, then the Railroad Protective Insurance requirement may be waived, if approved by the Railroad.
- 1.9.2.7 The Contractor is responsible for train delays caused by the Contractor's work. If the Contractor does not clear trains at the time set by the Railroad in its permission to the Contractor for track time, then the Contractor is subject to penalty equal to the resulting cost of train crew labor, additives and overtime, locomotive operating expenses, per diem and car hire expenses, and other reasonable cost incurred by the Railroad as a result of the Contractor's delay whether caused by any action or inaction by the Contractor.**
- 1.9.2.8 The value of any released materials, and any cost relating to the removal of or disposal of released materials off of the right-of-way, and any site clean-up activities are to be included in the cost of other items.

1.9.3 Nondiscrimination Clause

During the term of this contract, Contractor agrees as follows:

- 1.9.3.1 Contractor will not discriminate against any employee, applicant for employment, independent Contractor, or any other person because of race, color, religious creed, ancestry, national origin, age, or sex. Contractor will take affirmative action to ensure that applicants are employed, and that employees or agents are treated during employment, without regard to their race, color, religious creed, ancestry, national origin, age, or sex. Such affirmative action will include, but is not limited to: employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination;

rates of pay or other forms of compensation; and selection for training. Contractor will post in conspicuous places, available to employees, agents, applicants for employment, and other persons, a notice to be provided by the contracting agency setting forth the provisions of this nondiscrimination clause.

- 1.9.3.2 Contractor will, in advertisements or requests for employment placed by it or on its behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, religious creed, ancestry, national origin, age, or sex.
- 1.9.3.3 Contractor will send each labor union or workers' representative with which it has a collective bargaining Agreement or other contract or understanding, a notice advising said labor union or workers' representative of its commitment to this nondiscrimination clause. Similar notice will be sent to every other source of recruitment regularly utilized by Contractor.
- 1.9.3.4 It will be no defense to a finding or noncompliance with this nondiscrimination clause that Contractor had delegated some of its employment practices to any union, training program, or other source of recruitment which prevents it from meeting its obligations. However, if the evidence indicates that the Contractor was not on notice of the third-party discrimination or made a good faith effort to correct it, such factor will be considered in mitigation in determining appropriate sanctions.
- 1.9.3.5 Where the practices of a union or any training program or other source of recruitment will result in the exclusion of minority group persons, so that Contractor will be unable to meet its obligations under this nondiscrimination clause, Contractor will then employ and fill vacancies through other nondiscriminatory employment procedures.
- 1.9.3.6 Contractor will comply with all state and federal laws prohibiting discrimination in hiring or employment opportunities. In the event of Contractor's noncompliance with the nondiscrimination clause of this contract or with any such laws, this contract may be terminated or suspended, in whole or in part, and Contractor may be declared temporarily ineligible for further Department contracts, and other sanctions may be imposed and remedies invoked.
- 1.9.3.7 Contractor will furnish all necessary employment documents and records to, and permit access to its books, records, and accounts by, the contracting agency and the Office of Administration, Bureau of Affirmative Action, for purposes of investigation to ascertain compliance with the provisions of this clause. If Contractor does not possess documents or records reflecting the necessary information requested, it will furnish information on reporting forms supplied by the contracting agency of the Bureau of Affirmative Action.

- 1.9.3.8 Contractor will actively recruit minority subcontractors or subcontractors with substantial minority representation among their employees.
 - 1.9.3.9 Contractor will include the provisions of this nondiscrimination clause in every subcontract, so that such provisions will be binding upon each Subcontractor.
 - 1.9.3.10 Contractor obligations under this clause are limited to the Contractor's facilities within Tennessee or, where the contract is for purchase of goods manufactured outside Tennessee, the facilities at which such goods are produced.
 - 1.9.3.11 The Contractor hereby agrees, warrants, and assures that no person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of this Grant Contract or in the employment practices of the Grantee on the grounds of handicap or disability, age, race, color, religion, sex, national origin, or any other classification protected by federal, Tennessee state constitutional, or statutory law. The Grantee shall, upon request, show proof of nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.
- 1.9.4 The Americans with Disabilities Act During the term of this contract, the Contractor agrees as follows:
- 1.9.4.1 Pursuant to the Federal regulations promulgated under the authority of The American With Disabilities Act, 28 C.F.R. 535.101 et seq., the Contractor understands and agrees that no individual with a disability will, on the basis of the disability, be excluded from participation in this contract or from activities provided for under this contract. As a condition of accepting and executing this contract, the Contractor agrees to comply with the "General Prohibitions Against Discrimination," 28 C.F.R. 535.130, and all other regulations promulgated under Title II of The American With Disabilities Act which are applicable to the benefits, services, programs, and activities provided by the State of Tennessee through contracts with outside Contractors.
 - 1.9.4.2 The Contractor will be responsible for and agrees to Indemnify and hold harmless the Engineer and Railroad from all losses, damages, expenses, claims, demands, suits, and actions brought by any party against the Engineer and/or Railroad as a result of the Contractor's failure to comply with the provisions of paragraph 1 above.
- 1.9.5 Public Accountability. If the Grantee is subject to Tenn. Code Ann. § 8-4-401 et seq., or if this Grant Contract involves the provision of services to citizens by the Grantee on behalf of the State, the Grantee agrees to establish a system through which recipients of services may present grievances about the operation of the service program. The Grantee

shall also display in a prominent place, located near the passageway through which the public enters in order to receive Grant supported services, a sign at least eleven inches (11") in height and seventeen inches (17") in width stating:

1.9.5.1 NOTICE: THIS AGENCY IS A RECIPIENT OF TAXPAYER FUNDING. IF YOU OBSERVE AN AGENCY DIRECTOR OR EMPLOYEE ENGAGING IN ANY ACTIVITY WHICH YOU CONSIDER TO BE ILLEGAL, IMPROPER, OR WASTEFUL, PLEASE CALL THE STATE COMPTROLLER'S TOLL-FREE HOTLINE: 1-800-232-5454.

1.9.5.2 The sign shall be on the form prescribed by the Comptroller of the Treasury. The Grantor State Agency shall obtain copies of the sign from the Comptroller of the Treasury, and upon request from the Grantee, provide Grantee with any necessary signs.

1.9.6 Public Notice. All notices, informational pamphlets, press releases, research reports, signs, and similar public notices prepared and released by the Contractor in relation to this Grant Contract shall include the statement, "This project is funded under a grant contract with the State of Tennessee." All notices by the Grantee in relation to this Grant Contract shall be approved by the State.

1.9.7 Contractor Integrity Provisions

1.9.7.1 Definitions

Confidential information means information that is not public knowledge, or available to the public on request, disclosure of which would give an unfair, unethical, or illegal advantage to another desiring to contract with the Railroad.

Consent means written permission signed by a duly authorized officer or employee of the Railroad, provided that where the material facts have been disclosed, in writing, by pre-qualification, bid, proposal, or contractual terms, the Railroad will be deemed to have consented by virtue of execution of this Agreement.

Contractor means the individual or entity that has entered into this Agreement with the Railroad, including directors, officers, partners, managers, key employees, and owners of more than a 5% interest.

Financial Interest means: (1) Ownership of more than a 5% interest in any business; or (2) Holding a position as an officer, director, trustee, partner, employee, or the like, or holding any position of management.

Gratuity means any payment of more than nominal monetary value in the form of cash, travel, entertainment, gifts, meals, lodging, loans,

subscriptions, advances, deposits of money, services, employment, or contracts of any kind.

- 1.9.7.2 The Contractor will maintain the highest standards of integrity in the performance of this Agreement and will take no action in violation of local, state or federal laws, regulations, or other requirements that govern this project.
- 1.9.7.3 The Contractor will not disclose to others any confidential information gained by virtue of this Agreement.
- 1.9.7.4 The Contractor will not, in connection with this or any other Agreement with the Railroad, directly or indirectly, offer, confer, or agree to confer any pecuniary benefit on anyone as consideration for the decision, opinion, recommendation vote, other exercise of discretion, or violation of a known legal duty by any officer or employee of the Railroad.
- 1.9.7.5 The Contractor will not, in connection with this or any other Agreement with the Railroad, directly or indirectly, offer, give, or agree or promise to give to anyone any gratuity for the benefit of or at the direction or request of any officer or employee of the TDOT .
- 1.9.7.6 Except with the consent of the Railroad, neither the Contractor nor anyone in privity with him or her will accept or agree to accept from, or give or agree to give to, any person, any gratuity from any person in connection with the performance of work under this Agreement except as provided therein.
- 1.9.7.7 Except with the consent of the Railroad, which will not be unreasonably withheld, the Contractor must not have a financial interest in the Railroad, or any other Contractor, subcontractor, or supplier providing services, labor, or material on this project. The Contractor must make a request in writing to the Railroad to request permission to bid if it has the financial interests lists above. The Contractor must also make a request in writing to the Railroad if it intends to supply any materials required for the project that may be furnished to other Contractors bidding on the project, along with the prices for said items to be offered for sale or subcontract at least 5 days prior to the date of the job showing.
- 1.9.7.8 The Contractor, upon being informed that any violation of these provisions has occurred or may occur, will immediately notify the Railroad in writing.
- 1.9.7.9 The Contractor, by execution of this Agreement and by the submission of any bills or invoices for payment pursuant thereto, certifies and represents that he or she has not violated any of these provisions.

- 1.9.7.10 The Contractor will, upon the inquiry or request of the Inspector General of the State or any of that official's agents or representatives, will provide, or if appropriate, make promptly available for inspection or copying, any information of any type or form deemed relevant by the Inspector General to the Contractor's integrity or responsibility, as those terms are defined by the State's statutes, regulations, or management directives. Such information may include, but will not be limited to, the Contractor's business or financial records, documents or files of any type or form, which refer to or concern this Agreement. The Contractor will retain such information for a period of three years beyond the termination of the contract unless otherwise provided by law.
- 1.9.7.11 For violation of any of the above provisions, the Railroad may terminate this and any other Agreement with the Contractor, claim liquidated damages in an amount equal to the value of anything received in breach of these provisions, claim damages for all expenses incurred in obtaining another Contractor to complete performance hereunder, and debar and suspend the Contractor from doing business with the Railroad. These rights and remedies are cumulative, and the use or nonuse of anyone will not preclude the use of all or any other. These rights and remedies are in addition to those the Railroad may have under law, statute, regulation, or otherwise.

1.9.8 Special Provision Regarding Debarred and Properly Licensed Contractors

- 1.9.8.1 The Contractor certifies that it is not currently under suspension or debarment by any state or federal authority.
- 1.9.8.2 If the Contractor enters into any subcontracts under this contract with subcontractors who are currently suspended or debarred by the state or federal authority, or who become suspended or debarred by the state or federal authority during the term of this contract, or any extensions or renewals thereof, the Railroad will have the right to require the Contractor to terminate such subcontracts.
- 1.9.8.3 The Contractor agrees that it will be responsible for reimbursing the Railroad for all necessary and reasonable costs and expenses incurred by the Office of the Inspector General relating to an investigation of the Contractor's compliance with the terms of this or any other agreement between the Contractor and the Railroad which results in the suspension or debarment of the Contractor.
- 1.9.8.4 All Bidders are hereby advised that no award of this contract will be made to any firm or individual that is currently debarred by the State of Tennessee. All Bidders must be properly licensed with the State of Tennessee Board for Licensing Contractors for the designated type of construction services, and in conformance with the amount of the bid.

1.9.9 Environmental Compliance and Responsibilities

- 1.9.9.1 The Contractor will comply with all permit requirements, regulations and guidelines of the U.S. Environmental Protection Agency, U.S. Corps of Engineers, and the Tennessee Department of Environment and Conservation.
- 1.9.9.2 The Project does not call for or require any alterations to aquatic resources or waters of the State. It is not intended that the Contractor occupy the channel of any stream with any equipment.
- 1.9.9.3 If the Contractor intends to make any alterations to a blueline stream (waters of the State) or have any equipment in any stream, it will be the responsibility of the Contractor to comply with all State and Federal rules and regulations, and to attain any necessary permits for the Contractor's work.
- 1.9.9.4 There will be no excavation within the limits of stream channels on this project.
- 1.9.9.5 Erosion control measures are required for this project, to conform to the Plans and Specifications, and Storm Water Pollution Prevention Plan (SWPPP) if one is provided. If a permit is required for the Contractor's work, it will be the responsibility of the Contractor to apply for and obtain the permit, and the Contractor will be responsible for complying with all permit requirements.
- 1.9.9.6 The Contractor will not change the oil on any piece of machinery or perform other similar maintenance work on its machinery on railroad right-of-way.
- 1.9.9.7 No trash, litter, rubbish, waste oil, filters, or machine parts will be disposed of on railroad right-of-way.
- 1.9.9.8 All released materials and debris will be removed from the site and legally and properly disposed of off of the railroad right-of-way.
- 1.9.9.9 The Contractor will not burn any material without proper permit from the local authority.
- 1.9.9.10 All demolition materials must be removed from the project site and disposed of off of the railroad right-of-way.
- 1.9.9.11 All treated timber materials that are released from this project will be reused for some other purpose, sold for material to be reused, or disposed of in a proper and legal manner. If materials are sold, the Contractor will immediately furnish a copy of the bill of sale to the Engineer and Railroad and will furnish a copy of the Consumer Information Sheets for treated timber materials to the buyer.

1.9.9.12 The Contractor will not allow any released materials to float or drift downstream and shall immediately retrieve any materials moving downstream.

1.9.10 Conflicts of Interest. The Contractor warrants that no part of the total Grant contract Amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Contractor in connection with any work contemplated or performed relative to this Grant Contract.

1.9.11 Lobbying. The Contractor certifies, to the best of its knowledge and belief, that:

1.9.11.1 No federally appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

1.9.11.2 If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, grant, loan, or cooperative agreement, the Grantee shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

1.9.11.3 The Contractor shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

1.9.11.4 This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into and is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352.

1.10 Contract Closeout

1.10.1 The following items must be completed in order to close the contract:

- 1.10.1.1 The Contractor must complete all work outlined in the Scope of Work, Plans, and Specifications, and as provided for in the contract and final cost schedule, including approved change orders.
- 1.10.1.2 The Contractor must remove all released materials.
- 1.10.1.3 The Contractor must dispose of all released materials in a proper and legal manner, according to the Project Documents.
- 1.10.1.4 The Contractor must submit a notarized release of liens to the Engineer.
- 1.10.1.5 The Engineer will advertise the Notice of Completion for the project on behalf of the Railroad and will allow the notice to be in the public domain for 10 days prior to approval of the Contractor's project invoice.

1.11 Project Forms

The Contractor will be responsible for using and completing the 'Daily Log' form. The form will be completed each day, and copies will be sent to the Engineer on a weekly basis.

The requirements and forms to submit certified payrolls are provided in Section 3, Attachments.

1.12 Safety Requirements

The Contractor will be solely responsible for the safety of its workers and the public on the project site, and in mobilization and demobilization, storage areas, and other locations used in the execution of this project.

- 1.12.1 Refer to Section 3, herein, for any rules, forms, or other safety related documents. If Railroad Rules are not included in this document, then the Contractor is responsible for getting the training for its employees required by the FRA and the Railroad.
- 1.12.2 Maintain close contact with the Engineer, and Railroad as necessary, regarding work to be performed each day, working limits, safety briefings, and permission for track time.
- 1.12.3 Complete safety training and/or safety orientation required by the Railroad; conform to the Railroad safety rules; and conform to FRA bridge and track worker safety regulations.
- 1.12.4 Trains will not be cleared by the Contractor to cross tracks unless the Contractor's foreman has deemed the track is safe.

- 1.12.5 Where track has been disturbed by surfacing or tie renewal, trains should not exceed 10 mph until sufficient tonnage has crossed the area to stabilize the track.
- 1.12.6 The Contractor will maintain close contact with the Railroad Office in Knoxville, TN, Cody Spangler, at phone# (865) 705-507 , , and on a daily basis, will report to the Railroad as to the activities planned for that day;
- 1.12.7 Permission for all track time must be obtained from the Railroad. Daily contact with the Railroad will be maintained whether the Contractor is working or not.
- 1.12.8 The Contractor will be solely responsible for daily supervision and worker and site safety, and will obey all safety and operating rules, and regulations of the Railroad.
- 1.12.9 The Contractor will hold harmless the Engineer and Railroad for any liability and/or damages resulting from the Contractor's action or inaction or negligence.
- 1.12.10 The Contractor will conform to all OSHA, Federal Railroad Administration (FRA), and Railroad Rules where applicable. When performing work on bridges, the Contractor must conform to the most recent FRA regulations for bridge worker safety. At a minimum, hard hats will be worn when danger of falling materials is possible, and safety glasses will be used in all repair work where metal to metal contact can occur. It is the responsibility of the Contractor to check the condition of all equipment, and be familiar with and enforce all FRA safety regulations.
- 1.12.11 Faulty equipment must not be placed in service. Any fall protection gear in use during a fall must be disposed of and may not be reused.
- 1.12.12 The Contractor will be responsible for reimbursing the Railroad or Engineer for any fines levied against the Railroad and/or Engineer due to violation of regulations committed by the Contractor or through negligence of the Contractor.
- 1.12.13 The existing bridge structures may not be used in any way to brace, shore, or support any new construction.
- 1.12.14 The cost of providing safety equipment and conforming to all rules and regulations herein will be included in the cost of other items.
- 1.12.15 The track will not be occupied or fouled without permission from the Railroad. Permission for track time will be recorded as required by the Railroad's Safety Rules and procedures; and,

- 1.12.16 If not included in Section 3, Attachments, herein, the Contractor will obtain a copy of the Railroad's Safety Manual or whatever means they use for posting and enforcing preferred safety rules and must abide by these rules while performing work under this contract. The Contractor must be aware that these rules may change from Railroad to Railroad and may be additional to FRA or other governing agency rules.

1.13 Records

- 1.13.1 The Grantee and any approved subcontractor shall maintain documentation for all charges under this Grant Contract. The books, records, and documents of the Grantee and any approved subcontractor, insofar as they relate to work performed or money received under this Grant Contract, shall be maintained in accordance with applicable Tennessee law. In no case shall the records be maintained for a period of less than five (5) full years from the date of the final payment. The Grantee's records shall be subject to audit at any reasonable time and upon reasonable notice by the Grantor State Agency, the Comptroller of the Treasury, or their duly appointed representatives.
- 1.13.2 The records shall be maintained in accordance with Governmental Accounting Standards Board (GASB) Accounting Standards or the Financial Accounting Standards Board (FASB) Accounting Standards Codification, as applicable, and any related AICPA Industry Audit and Accounting guides.
- 1.13.3 In addition, documentation of grant applications, budgets, reports, awards, and expenditures will be maintained in accordance with U.S. Office of Management and Budget's Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.
- 1.13.4 Grant expenditures shall be made in accordance with local government purchasing policies and procedures and purchasing procedures for local governments authorized under state law.
- 1.13.5 The Grantee shall also comply with any recordkeeping and reporting requirements prescribed by the Tennessee Comptroller of the Treasury.
- 1.13.6 The Grantee shall establish a system of internal controls that utilize the COSO Internal Control - Integrated Framework model as the basic foundation for the internal control system. The Grantee shall incorporate any additional Comptroller of the Treasury directives into its internal control system.
- 1.13.7 Any other required records or reports which are not contemplated in the above standards shall follow the format designated by the head of the Granter State Agency, the Central Procurement Office, or the Commissioner of Finance and Administration of the State of Tennessee.

SECTION 2 - RAILROAD TRACK SPECIFICATIONS

2.1 Introduction

- 2.1.1 References
- 2.1.2 Submittals
 - 2.1.2.1 Rail
 - 2.1.2.2 Rail Anchors
 - 2.1.2.3 Cut Track Spikes
 - 2.1.2.4 Joint Bars
 - 2.1.2.5 Field Weld Rail (Thermite Welding Procedures)
 - 2.1.2.6 Switch Point Protectors
 - 2.1.2.7 Gage Rods
 - 2.1.2.8 Components or Products
 - 2.1.2.9 Schedule of Materials and Equipment
 - 2.1.2.10 Ultrasonic Rail Testing
 - 2.1.2.11 Manufacturer's Certificate of Compliance
- 2.1.3 Deliveries, Storage, and Handling of Materials
 - 2.1.3.1 Materials and Samples
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2.2 Rail

- 2.2.1 Description
- 2.2.2 Materials
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2.3 Rail Anchors

- 2.3.1 Description
- 2.3.2 Materials
- 2.3.3 Equipment
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2.4 Cut Track Spikes

- 2.4.1 Description
- 2.4.2 Materials
- 2.4.3 Equipment
- 2.4.4 Construction Requirements
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2.5 Joint Bars

- 2.5.1 Description
- 2.5.2 Materials
- 2.5.3 Equipment

- 2.5.4 Construction Requirements
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2.6 Field Weld Rail (Thermite Welding Procedures)

- 2.6.1 Description
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2.7 Switch Point Protectors

- 2.7.1 Description
- 2.7.2 Materials
- 2.7.3 Equipment
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2.8 Gage Rods

- 2.8.1 Description
- 2.8.2 Materials
- 2.8.3 Equipment
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2.9 Rail Testing

- 2.9.1 Description
- 2.9.2 Materials
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SECTION 2 - RAILROAD TRACK SPECIFICATIONS

2.1 Introduction

This section includes specifications for track maintenance, rehabilitation, and/or construction.

The Contractor is required to conform to the Project Documents for this project, including, but not limited to the Plans and Specifications, Construction Details, Attachments, including job showing notes and addenda, and the final cost schedule.

The Contractor will supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the work in accordance with the Project Documents.

The Contractor will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will be responsible to see that the finished work complies accurately with the Project Documents and Plans and Specifications herein.

2.1.1 References

The publications listed below form a part of the Specifications to the extent referenced. The publications are referred to in the text by basic designation only.

AREMA MRE - Manual for Railway Engineering, most recent edition

AREMA PTWP - Portfolio of Trackwork Plans - most recent edition

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) - Most recent guidelines for testing materials.

2.1.2 Submittals

The Engineer's approval is required for submittals for all materials to be provided by the Contractor. Submittals must be sent to the Engineer, and confirmation/approval received by the Contractor prior to installation.

Certifications for all materials used must come from the individual suppliers.

The certifications must state that the materials meet or exceed the guidelines and specifications in the Project Documents. The project Specifications may be more stringent or restrictive than AREMA Guidelines.

All materials and equipment furnished by the Contractor for the project will be new and of good quality, except as may be otherwise provided in the Project Documents in the materials portion of each section. All material and equipment will be applied, installed, connected, cleaned, and conditioned in accordance with the instructions of the applicable supplier or manufacturer, except as may be otherwise provided in the Project Documents.

Shipping documents for materials are also required to be sent to the Engineer. This is a requirement if the Contractor desires to be paid for 90% of material cost for materials delivered to the project site, but not installed.

Items incidental to construction will be furnished and installed or applied by the Contractor at no additional cost to the Owner. Examples include but are not limited to bolts, nuts, washers, cotter pins, plug wood or plugging compound, and in some instances spikes or rail anchors, etc.

2.1.2.1 Rail

Manufacturer's data on new rail, including: rail weight, rail section, drilling, rail length, date rolled, ultrasonic testing results and the name of the mill where the rail was rolled.

For relay rail the required information will include weight, section, lengths, and the name of the supplier.

Ultrasonic rail testing results must be submitted to the Engineer prior to final acceptance.

The total maximum allowable vertical wear on the rail head and the maximum allowable horizontal wear on the side of the rail is noted in the Specifications. Provide information regarding the wear data for relay rail.

Rail delivered with curve wear or observable defects will be rejected, regardless of test results.

2.1.2.2 Rail Anchors

Submit the manufacturer's information and Certificate of Compliance for materials.

2.1.2.3 Cut Track Spikes

Submit the manufacturer's information and Certificate of Compliance for materials.

2.1.2.4 Joint Bars

The design of the joint bars to be furnished with each rail section will be provided. Include the type of joint bar and method of manufacture, along with the number of bolt holes, rail section, and whether new or relay material.

2.1.2.5 Field Weld Rail (Thermite Welding Procedures)

Submit the name of the person or persons certified to make field welds. A detailed statement covering the step-by-step procedures to be employed in making the welds, including a complete description of each of the following items, as applicable, and any other essential characteristics included in the welding procedure:

- The manufacturer's trade name for the welding process.
- The method to be used for cutting and cleaning the rail ends. Flame, or torch, cutting of rail ends will not be allowed.
- The minimum and maximum spacing between rail ends.
- The method used for maintaining the rails in alignment during the welding operation.
- The method used for preheating, including time and temperature.
- The tapping procedure, including the minimum time required to cool the weld under the mold insulation.
- The method used (including a description of special tools and equipment) for removing the upset metal and finishing the weld to the final contour.
- Quality control procedures to be utilized.
- The contractual agreements with any subcontractor employed by the Contractor for performance of the work.

2.1.2.6 Switch Point Protectors

Prior to ordering the protectors, Contractor will inventory the rail weight of each turnout so that the correct corresponding size can be ordered.

The Contractor will furnish the Engineer with the Manufacturer's name, size and type. Proposed switch point protectors to be Western-Cullen-Hayes Model FM Switch Point Guards or equal.

2.1.2.7 Gage Rods

The design of the gage rods to be furnished will be provided. Include the type of gage rod, whether insulated or non-insulated, and whether new or relay material.

2.1.2.8 Components or Products

Performance data for components or products proposed as an equivalent to those herein specified. The Engineer's written approval is required for any such equivalent type component or product that the Contractor proposes to use. Submit prior to ordering materials.

2.1.2.9 Schedule of Materials and Equipment

A complete schedule of the materials proposed for installation within 10 days of receipt of Notice to Proceed, and before installation of the materials. The schedule will include a list of equipment proposed for the work.

All certifications of compliance are due no later than 30 days from the date of Notice to Proceed unless stated otherwise herein.

2.1.2.10 Ultrasonic Testing

Provide the type of testing equipment to be used, and name of the testing company - the Engineer may require a statement of qualifications from the testing company.

Results of ultrasonic rail or field weld testing will include a list of defects and rail stationing, and/or weld number. Defects will be marked by paint on the rail. All scrap rail to be scrapped will be painted with a red mark.

2.1.2.11 Manufacturer's Certificate of Conformance

Manufacturer's certificate of conformance is required for the following materials:

- Rail
- Joint Bars
- Rail Anchors
- Track Spikes
- Rail Welding Process

2.1.3 Delivery, Storage, and Handling of Materials

2.1.3.1 Materials and Samples

The Contractor is responsible for notifying the Engineer when materials are delivered to the project site, or to a fabricating facility, if applicable. If any fabrication of materials occurs offsite, the Contractor will notify the Engineer prior to fabrication, and will furnish shop drawings for approval prior to fabrication of materials.

The Engineer will notify the Contractor as to the status of materials approved or disapproved. Disapproved materials that have already been delivered to the project site will be promptly segregated from the approved materials and removed from the premises. If materials are disapproved, acceptable replacement materials will be provided at no additional cost to the Authority.

Initial approval by the Engineer will not prevent the removal and replacement of materials that are materially defective or materials not meeting this specification that are discovered during construction and/or routine quality control/quality assurance operations.

The Contractor is solely responsible for the security and protection of all materials delivered to the project site. The Contractor is responsible for replacing lost, stolen, or damaged materials at no additional cost to the Authority.

All track materials will be handled in such a manner as to protect such materials from being damaged and will be stored in such a manner as to be protected from vandalism. Materials damaged during unloading, handling, or installation will be replaced by the Contractor at the Contractor's cost.

2.1.4 Qualifications

- 2.1.4.1 Track construction tasks will be performed under the direction of qualified and competent supervisory personnel experienced in railroad track construction and maintenance.

All track crew members will be knowledgeable of the applicable Safety Rules.

All track crew members and other workers with the need to foul the track must be trained in Roadway Worker Protection and all such members must carry their RWP card on their person when on Railroad property.

- 2.1.4.2 Welding will be performed under the direct supervision of an experienced welding supervisor or foreman.

2.1.5 Site Conditions

Temporary Work:

During construction, the Contractor will restore the track to a condition both safe and suitable for service as needed by the Railroad for its regular train operations.

Track time must be scheduled with the Railroad, and the track restored and/or cleared for service by the designated time. The Contractor is responsible for train delays. Any penalty for delays will be outlined in the liquidated damages section of the project Documents, and/or in the general conditions.

Drainage will be maintained through the project site during the full term of the project. Accumulation of water that might be detrimental to or affect the stability of the roadbed will not be permitted. Ditches will be maintained in good working condition, and no debris will be allowed to block ditches or culverts.

Empty spike kegs and similar containers will not be left in or near ditches but will be disposed of off the Railroad right-of-way as soon as they are emptied.

The Contractor will be responsible for restoring any railroad and/or grade crossing signal bond wires disturbed by his forces during the project, at no additional cost to the Authority or Railroad, unless otherwise stated.

The Contractor will stabilize slopes, and seed with mulch any areas disturbed by construction activities to restore and maintain a permanent stand of grass.

End Of Section

2.9 Rail

2.9.1 Description

Rail will have a unit weight of 136 pounds per yard and may be new or Class 1 relay with blank ends. Rail to be upgraded will be installed in accordance with all applicable Sections of these Specifications.

2.9.2 Materials

2.2.1.1 New Rail

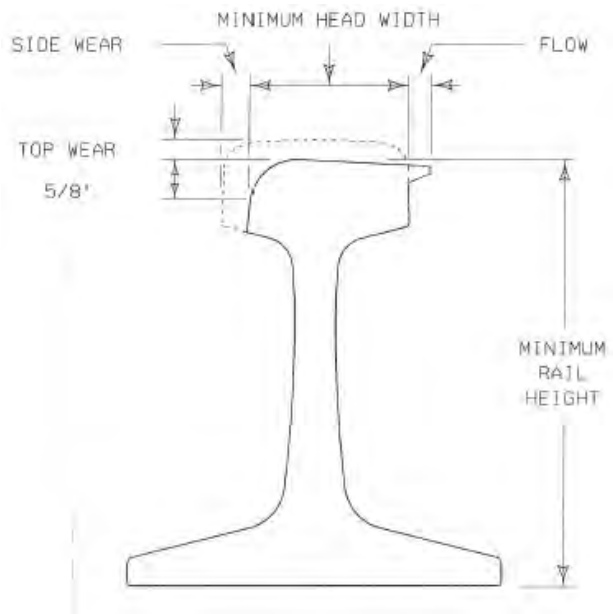
Full length rail, preferably seventy-eight (78') feet, shall be used except in cutting closures and installing turnouts or crossings. No rail shorter than thirty-three (33') feet long on curves and nineteen feet six inches (19'-6") on tangents shall be used except in turnouts and track crossings.

2.2.1.2 Relay Rail

Relay Rail is a rail that is in service and removed for various reasons. Relay Rail may be internally produced rail from rail programs or may be acquired from a rail supplier.

See table below for qualifying rail specifications:

Rail Section	Design Rail Height	Max Top Wear	Min Rail Height	Design Rail Head Width	Max Side Wear High	Min Head Width High	Max Flow on 1 Side
Class 1 - Main Line - Greater than 10 MGT to 20 MGT per year - Very minor engine burns & corrugations.							
141RE	7 7/16	3/8	7 1/16	3 1/16	5/16	2 3/4	1/8
140RE	7 5/16	1/4	7 1/16	3	5/16	2 11/16	1/8
136RE	7 5/16	1/4	7 1/16	2 15/16	5/16	2 5/8	1/8
136NYC	7 9/32	1/4	7 1/32	2 15/16	5/16	2 5/8	1/8
132RE	7 1/8	3/16	6 15/16	3	5/16	2 11/16	1/8
131RE	7 1/8	3/16	6 15/16	3	5/16	2 11/16	1/8
127DY/DYM	7	3/16	6 13/16	3	5/16	2 11/16	1/8
122CB	8 25/32	3/16	6 19/32	2 15/16	5/16	2 5/8	1/8
115RE	6 5/8	1/8	6 1/2	2 7/8	5/16	2 9/16	1/8



2.9.3 Equipment

The Contractor will furnish all necessary equipment to move or install the materials listed above. All equipment cost will be included in the contract price (see measure and payment section below).

2.9.4 Measurement and Payment

For all rail-related work under this section will be made as a lump sum item under the install rail unit price, said payment will be payment in full for all materials, labor, equipment, testing, and incidentals necessary to replace the rail with all its various components as defined on the Plans or outlined in the Scope of work.

The Contractor will not exceed contract quantities without proper change order, approved by the Engineer.

End Of Section

2.10 Rail Anchors

2.10.1 Description

2.10.2 Materials

Rail Anchors

New installation - Rail anchors for rail laying will be new and conform to the rail section being used. Sizes will conform to the various sizes of rail on the project and to "Specifications for Rail Anchors" in Chapter 5, Part 7 of AREMA MRE. Anchors may be either drive-on or spring type.

General – the Contractor will furnish and install new rail anchors as per the scope of work.

2.10.3 Equipment

Where special tools are required to install or remove anchors, the Contractor will furnish a minimum of one tool for each 5,000 anchors, or fraction thereof, not to exceed 2 tools per job.

2.10.4 Construction Requirements

On existing track, rail anchors will be removed before installing crossties and/or rail and will be replaced immediately after the new ties and/or rail is installed.

The Contractor will furnish and install rail anchors as per the scope of work, conforming to the rail section at each location.

Anchors will be adjusted to fit snugly against the sides of the crosstie and will be applied to the rail with sufficient force as to properly secure the anchor. Crossties will be perpendicular to the centerline of track and straightened by the Contractor as necessary before rail anchors are applied. If ties are not straightened prior to applying anchors, the Contractor will be responsible for removing anchors, straightening ties, reapplying anchors, and dressing ballast, at no extra cost.

No rail anchors will be applied in grade crossings.

The cost to furnish and/or install new or relay rail anchors will be included in the cost of "Upgrade Rail" item.

The cost of removing and reapplying existing rail anchors will be included in the price for the "Upgrade Rail" item. New installation - Rail anchors for rail laying will be new, conforming to the rail section being used. Sizes will conform to the various sizes of rail on the project and to "Specifications for Rail Anchors" in Chapter 5, Part 7 of AREMA MRE. Anchors may be either drive-on or spring type.

Rail anchors will be applied immediately after the rail has been laid and adjusted for temperature. Anchors may later require removal and replacement to de-stress the welded rail.

Anchors will not be applied within 1-inch or over the top of an existing weld.

Anchors must be on the same side of the same tie on both rails.

Turnouts will have anchors applied to all rails on the switch ties where possible.

On roadbed approaches to bridges of 50 feet or more in length, rail will be box anchored longitudinally at each tie for a distance of 200 feet away from the bridge, unless otherwise specified by the Engineer.

2.10.5 Measurement and Payment

For all rail-related work under this section will be made as a lump sum item under the install rail unit price, said payment will be payment in full for all materials, labor, equipment, testing, and incidentals necessary to construct the track with all its various components as defined on the Plans or outlined in the Scope of work.

The Contractor will not exceed contract quantities without proper change order, approved by the Engineer.

Payment for rail, spikes, bolts, nuts, spring washers, gage rods, rail anchors, welds, and surfacing and lining track, is to be included in the cost of the "Construct Track, Complete" item.

End Of Section

2.11 Cut Track Spikes

2.11.1 Description

2.4.2 Materials

New, high carbon steel, cut track spikes, conforming to Chapter 5, Part 2 of AREMA MRE, will be utilized. Track spikes will be 5/8" square by 6" long. Spiking will conform to the appropriate pattern detail as shown in these Specifications.

2.4.3 Equipment

The Contractor will furnish all necessary equipment to move or install the materials listed above. All equipment cost will be included in the contract price (see measure and payment section below).

Spiking Procedures - Rail will be spiked promptly after being laid. Spikes will be started and driven vertically and square with the rail. In no case will spikes be overdriven or straightened while being driven. Spikes will not be installed through the slots in skirted-type, slotted joint bars (angle bars). No spikes will be driven against the ends of joint bars. Spikes started crooked will be pulled, the holes plugged, and spikes re-driven. Spikes will be driven with the underside of the head of the spike contacting the top of the base of the rail with a minimum of pressure.

Number of Spikes – in general, the Contractor will conform to the spiking pattern detail. Four rail-holding spikes will be used on each tie on tangents and curves less than 2 degrees (Spiking Pattern "A"). On curves 2 degrees or greater but not more than 6 degrees, eight spikes will be used on each tie with the spikes located as follows: High rail, one rail-holding spike and one plate holding spike on the field side and two on the gage side; Low rail, two rail-holding spikes on the gage side, one rail-holding spike and one plate-holding spike on the field side (Spiking Pattern "C"). Curves 6 degrees and greater will be spiked with ten spikes per tie located as follows: High rail, one rail-holding spike and one plate-holding spike on the field side, two rail-holding spikes and one plate-holding spike on the gage side; Low rail, two rail-holding and one plate-holding spike on the gage side; one rail-holding and one plate-holding spike on the field side (Spiking Pattern "D"). Eight rail- holding spikes will be used on each tie through road crossings.

When placing spikes in existing track which may contain tie plates with fewer than the required number of spike holes, Contractor will place spikes to the extent possible to attain the desired spiking pattern.

2.4.4 Construction Requirements

2.4.5 Measurement and Payment

For all rail-related work under this section will be made as a lump sum item under the install rail unit price, said payment will be payment in full for all materials, labor, equipment, testing,

and incidentals necessary to construct the track with all its various components as defined on the Plans or outlined in the Scope of work.

The Contractor will not exceed contract quantities without proper change order, approved by the Engineer.

Payment for rail, spikes, bolts, nuts, spring washers, gage rods, rail anchors, welds, and surfacing and lining track, is to be included in the cost of the "Furnish and Install Rail" item.

End Of Section

2.5 Joint Bars

2.5.1 Description

The Contractor will furnish and install any temporary or permanent joint bars required for the completion of the project. Temporary joint bars are needed for any joints in active track that are not yet welded as the track must remain in service as much as possible. Permanent joint bars be needed to replace existing joint bars, when and if needed.

2.5.2 Materials

Joint bars for track construction will be new or good quality relay toeless forged bars, conforming to the rail section and bolt hole pattern of the rail being used. Joint bars will have six holes per bar, and end holes will be bolted using at least 2 bolts per end.

Wrap around bars, full toe bars, and slotted bars are not acceptable. Individual bars will be inspected for cracks prior to installation.

Field welds, if tested, and compromise welds, if tested, are acceptable substitutions for rail joint bars.

Material will conform to AREMA guidelines and recommendations.

2.5.3 Equipment

The Contractor will furnish all necessary equipment to move or install the materials listed above. All equipment cost will be included in the contract price (see measure and payment section below).

2.5.4 Construction Requirements

Joint bars will be clean prior to installation. Joint bars will be installed with at least 4 bolts per bar, two each end.

2.5.5 Measurement and Payment

Payment for work and materials related to temporary and permanent joint bars and will be included in the cost of other items.

End Of Section

2.6 Field Weld Rail

2.6.1 Description

All joints in the rail being replaced will be welded. Any joints created by the relocation of the turnout will be welded.

2.6.2. Materials

Rail Welding Kits - Kits for thermite type rail welds will be approved by the Engineer before use.

2.6.3 Equipment

The Contractor will furnish all necessary equipment to move or install the materials listed above. All equipment cost will be included in the contract price (see measure and payment section below).

2.6.4 Construction Requirements

The Contractor will furnish rail-welding kits and will make field welds at locations as per the scope of work. Welds will be made by qualified personnel.

Rail ends at joints will be blank, or, if drilled, will be cropped so that no bolt hole is within five and one-half inches (5 ½") of the proposed weld. The remaining bolt holes will be packed with sand prior to making the weld.

Cropping of rail ends will be accomplished by using a rail saw. No torch cutting of rails will be allowed.

Prior to performing the weld, the rail will be properly aligned on both the gage side and running surface.

The Contractor is responsible for ordering and furnishing all weld kits.

Payment for field welds will be based on the number of field welds completed, and payment made per the unit bid price.

End Preparation - Rails to be welded will meet the requirements of AREMA MRE, Paragraph 1, "Specifications for Fabrication of Continuous Welded Rail" given in Chapter 4, Part 2 of AREMA MRE. The rail ends will be aligned in accordance with the paragraph entitled "Gap and Alignment". Rail ends will show no steel defects, dents, or porosity before welding. Bolt holes will not be made, or permitted to remain, in the ends of the rail to be welded. One handling hole may be made in each end of the welded string. Rail ends containing such holes will be cropped during track construction. Rail which must be cut for any reason will be cut squarely and cleanly by means of approved rail saws or abrasive cutting wheels in

accordance with Chapter 5 of AREMA MRE, article, "Recommended Practice For Use of Abrasive Wheels".

Cleaning - The rails to be welded will be cleaned of grease, oil, dirt, loose scale, and moisture to a minimum of 6 inches back from the rail ends, including the railhead surface. Cleaning will be accomplished by use of a wire brush, to completely remove dirt and loose oxide and by use of oxygen-acetylene torch to remove grease, oil and moisture. A power grinder with an abrasive wheel will be used to remove scale, rust, burrs, lipped metal and mill brands which would interfere with the fit of the mold for 2 inches on each side of the rail ends.

Gap and Alignment - The minimum and maximum spacing between rail ends will be as specified by the rail welding kit manufacturer and the approved welding procedures.

The ends of the rails to be welded will be properly gapped and aligned to produce a weld conforming to the alignment tolerances below. Alignment of rail will be made on the head of the rail. The rail gap and alignment will be held constant during the complete welding cycle.

Vertical alignment will be such that a flat running surface is provided. Any adjustment for the difference in the height of the rails will be made at the base.

Horizontal alignment will be such that any difference in the width of rail heads occurs on the field side. Horizontal offsets will not exceed 0.04 inch in the head and/or 0.12 inch in the base.

Surface Misalignment Tolerance - Combined vertical offset and crown camber will not exceed 0.04 in./ft at 315 degrees C (600 degrees F) or less. Combined vertical offset and dip camber will not exceed 0.01 in./ft at 315 degrees C (600 degrees F) or less.

Gage Misalignment Tolerance - Combined horizontal offset and horizontal kink camber will not exceed 0.04 in./ft at 315 degrees C (600 degrees F) or less.

Thermite Welding - Welding will be done in accordance with Chapter 4, Part 2 of AREMA MRE, articles "Thermite Welding - Rail Joints" and "Specifications for Fabrication of Continuous Welded Rail", except as modified by these Specifications. All welds will be visually inspected at the time of welding.

Thermite Weld Preheating - The rail ends will be preheated prior to welding to a sufficient temperature and for sufficient time as indicated in the approved welding procedures to insure full fusion of the weld metal to the rail ends without cracking of the rail or weld.

Thermite Weld Cooling - The molds will be left in place after tapping for sufficient time to permit complete solidification of the molten metal and proper slow cooling to prevent cracking and provide a complete weld with proper hardness and ductility.

Weld Finishing and Tolerances - Welded joints in finished track will be brought to a true surface and alignment by means of a proper grinding or planing machine (shear). Finish grinding will be performed with an approved grinder operated by a skilled workman grinding evenly and leaving the joints in a smooth and satisfactory condition. Finishing will eliminate

all cracks. The completed weld will be finished by mechanically controlled grinding in conformance with the following requirements:

A finished deviation of not more than plus or minus 0.01 inch of the parent section of the rail head surface will be allowed. The gage side of the rail head will be finished to plus or minus 0.01 inch of the parent section.

Welds produced by welding kits which are specially designed to produce reinforced welds need not be ground in the finishing area except as necessary to remove fins, burrs, cracks, etc.

Weld Quality - Each completed weld will have full penetration and complete fusion and be entirely free of cracks or fissures. Welds will meet the acceptance criteria given in AWS D 1.1

Weld Numbering - The Contractor will semi-permanently mark a sequential weld number on the rail immediately adjacent to the weld using a quality lead paint marker at the time the weld is made. Welds will be numbered sequentially in the order in which they are made. Replacement welds (made to correct defective welds) will be assigned a new sequential number by adding a letter to the defective weld number (i.e., defective weld 347 would be replaced by 347A).

Visual Inspection - Each welded joint will be thoroughly inspected by the Contractor in the presence of the Engineer after removal of the mold and grinding of excess metal. The Contractor will pay particular attention to surface cracking, slag inclusion, gas pockets, and lack of fusion. The Contractor will correct or replace, at no extra cost, any weld found to be defective. The method of correction will be as approved by the Engineer.

Testing - Each weld will be ultrasonically tested following the visual inspection. The method of testing and acceptance will be in accordance with AWS D1.1 The Contractor will correct or replace all defective welds, at no additional cost. The method of correction will be as approved by the Engineer. Ultrasonic testing will be performed by the Contractor after the rail has been installed in track. The testing will determine whether each weld meets the criteria specified. Welds which are deemed unacceptable by the Engineer will be cut out of the rail and replaced by a section of new rail and two new welds. Saw cuts will be made at least 6 inches from the centerline of the faulty weld. Replacement welds and replacement rails will be at the sole expense of the Contractor. Replacement welds will be renumbered as indicated, and retested.

Additional Rail Markings- in addition to the weld number, the following information is to be marked on the web of the rail at each weld:

Initials of person making weld

Ambient (air) temperature at time of weld

Rail temperature (taken with a rail thermometer placed on the shady side of the rail)

Date of weld Time of day weld was made

RECORD OF FIELD WELD

INSTALLATION_____WELD NUMBER_____

FINAL INSTALLED LOCATION_____TRACK_____

STATION_____RAIL L. R. (Circle)

DATE TIME AM / PM (Circle)

AIR TEMPERATURE____F. WEATHER_____

RAIL TEMPERATURE____F.

WELD KIT MANUFACTURER

RAIL GAP (NEAREST 1/16 IN.)_____ RAIL CUT REQUIRED? YES NO

BACK RAIL

MANUFACTURER_____ USED RAIL? YES NO (Circle)
YEAR/MONTH ROLLED_____ HEAT NUMBER_____

AHEAD RAIL

MANUFACTURER_____ USED RAIL? YES NO (Circle)
YEAR/MONTH ROLLED_____ HEAT NUMBER_____

REMARKS:

ULTRASONIC TEST DATE AND RESULTS_____

KIT MFG, REPRESENTATIVE PRESENT_____ WELDING FOREMAN_____
(Initial)

ENGINEER'S REPRESENTATIVE PRESENT _____ RECORDER_____
(Signed) _____ (Initial)

_____ RECORDER_____
(Signed) _____ (Initial)

2.6.5 Measurement and Payment

Contractor will be paid per weld at the rate found in the bid sheet. Said payment will be in full for all materials, labor, equipment, testing, and incidentals necessary to weld the track, including all costs associated with any temporary joint bar installation prior to a joint being welded, so the track may remain in service as required by the Railroad.

The Contractor will not exceed contract quantities without proper change order, approved by the Engineer.

End Of Section

2.7 Switch Point Protectors

2.7.1 Description

Contractor will furnish and install switch point protectors at 53 locations. Prior to ordering the protectors, Contractor will inventory the rail weight of each turnout so that the correct corresponding size and models can be ordered.

2.7.2 Materials

Switch point protector type to be Western-Cullen-Hayes Model FM Switch Point Guard basic unit or equal. The switch point protector package will have slide plates included and the unit will be bolted to the rail unless the switch is a spring switch.

2.7.3 Equipment

The Contractor will furnish all necessary equipment to deliver and install the materials listed above. All equipment cost will be included in the contract.

2.7.4 Construction Requirements

Contractor will furnish and install switch point protectors at 53 locations to be marked by the Engineer in the field prior to ordering and installation. Drilling of the rail for bolted installation, ballast needed for hand tamping is incidental to the work and shall be included in the price of furnishing and installing the switch point protectors.

The Contractor will verify that track gage is not tight and that the stock rail has full head width at the switch point. Excessive railhead side wear will be brought to the attention of the Engineer. Locate and mark the location on the stock rail for the horizontal center lines of the mounting bolt holes. Locate and mark the vertical hole centers matching the dimensions of the bolt hole spacing of the unit. Drill two 1-1/8" diameter holes, ensuring that holes do not exceed 1-1/8" diameter which could cause bolt head failure.

The rail will be jacked sufficiently to remove existing slide plates. With rail elevated, position the switch point protector. Adjust ties for proper spacing and ensure that ties are at right angles to stock rail. Lower the rail, ensuring that the stock rail base rests in seats of switch point protector. Spike the switch point protector securely.

2.7.5 Measurement and Payment

Payment for furnishing and installing switch point protectors will be paid for according to the unit price bid.

End Of Section

2.8 Gage Rods

2.8.1 Description

Where existing gage rods are present, the Contractor will remove them as necessary for the track rail or crosstie work. Gage rod will be reinstalled or replaced if not in reusable condition.

2.8.2 Materials

Existing gage rods will be removed if proposed construction so requires.

New gage rods will be the double-clamp style manufactured in conformance with “Specifications for Special Trackwork” of AREMA MRE. The double clamp style gage rods will be threaded on both ends and be equipped with four malleable steel casting clamps to rigidly hold both sides of the base of rail.

2.8.3 Equipment

The Contractor will furnish all necessary equipment to move or install the materials listed above. All equipment cost will be included in the contract price (see measure and payment section below).

2.8.4 Construction Requirements

Existing gage rods will be removed if proposed construction so requires. Gage rods will be reinstalled upon completion of the new work.

New gage rods, if called for within the Plans, will be installed in the areas, and at the intervals, designated.

End Of Section

2.9 Rail Testing

2.9.1 Description

The Contractor is responsible for testing the rail provided for this project, and for testing all field welds made in this project. Testing will be completed prior to approval of all rail laying. 10% of the total install rail related items may be retained until testing is complete, and reports have been submitted to the Engineer.

2.9.2 Materials

None

2.9.3 Equipment

The Contractor will submit the proposed equipment for testing to the Engineer for approval. The equipment will, at a minimum, be capable of testing for defects using ultrasonic equipment designed for testing rail and field welds.

2.9.4 Construction Requirements

None

2.9.5 Measurement and Payment

The cost of testing field welds and rail will be included in the cost of furnishing or installing rail and OTM.

End Of Section

SECTION 5 – STRUCTURES

- 5.1. Introduction
 - 5.1.1. References
 - 5.1.2. Submittals
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 - 5.2.1. Description
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 - 5.2.13. Measurement and Payment

- 5.3. Steel Structures – N/A

- 5.4. Painting – N/A

- 5.5. Concrete Structures – N/A

- 5.6. Waterproofing – N/A

- 5.7. Piling
 - 5.7.1. Description
 - 5.7.2. Materials
 - 5.7.3. Equipment
 - 5.7.4. Driving Piles – N/A
 - 5.7.5. Bearing Value and Penetration – N/A
 - 5.7.6. Pile Splices
 - 5.7.7. Pile Tips – N/A
 - 5.7.8. Cutoffs and Treatment of Pile Heads – N/A
 - 5.7.9. Measurement and Payment

- 5.8. Precast-Prestressed Concrete Bridge Members – N/A

- 5.9. Bearings – N/A

5.10. Grout – N/A

5.11. Bridge Railings – N/A

SECTION 5 – Structures

5.1 Introduction

This section includes specifications for bridge rehabilitation and construction.

The Contractor is required to conform to the Project Documents for this project, including Plans and Specifications. The Contractor will supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the work in accordance with the Project Documents.

The Contractor will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will be responsible to see that the finished work complies accurately with the Project Documents and Plans and Specifications herein.

5.1.1. References

The publications listed below form a part of the Specifications to the extent referenced. The publications are referred to in the text by basic designation only.

NOTE: All references below should be the current edition.

AREMA MRE - Manual for Railway Engineering

AMERICAN INSTITUTE FOR STEEL CONSTRUCTION (AISC)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

AMERICAN WELDING SOCIETY (AWS)

AWSD1.5 Bridge Welding Code - Steel

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWS)

AWPA M2 Standard for Inspection of Treated Timber Products

AWPA M6 Brands Used on Forest Products

AWPA P2 Standard for Creosote Solutions

ACI STANDARD 318 for concrete design and construction

Tennessee Department of Transportation (TDOT) Standard Specifications for Road and Bridge Construction

5.1.2. Submittals

Submittals having a "GA" designation must have the Engineer's approval.

Submittals having an "FIO" designation are for information only, but must be submitted to the engineer for record and to assure proper payment.

All materials and equipment furnished by the Contractor for the project will be new and of good quality, except as may be otherwise provided in the Project Documents. All material and equipment will be applied, installed, connected, cleaned, and conditioned in accordance with the instructions of the applicable supplier, except as may be otherwise provided in the Project Documents.

A. Steel Components; GA

Certification must include the name of the steel supplier, strength, grade, size and type and other data provided by the mill certificates.

B. Precast, Prestressed Concrete Girders; GA

Certification must include the name of the supplier, ACI and PCI membership status, shop drawings, the mix design, and references of similar work with respect to the size and type of girders proposed for this particular project.

C. Portland Cement Concrete; GA

Certification must include the name of the supplier, ACI membership status, and the mix designs.

D. Grout; GA

Certification must include the name of supplier, curing strengths with respect to time and temperature, and other data provided by the manufacturer's technical data sheets.

E. Timber; GA

Certification must include the name of the timber supplier, type and method of treatment, size, type of timber, grade, and other data provided by the mill certificates.

F. Elastomeric Bearing Pads; GA

Certification must include the name of supplier, type of material, compressive and tensile strength, durometer number, and other data provided by the mill certificates.

G. Pile Driving; FIO

Pile driving logs must be submitted to the engineer for any piling driven on this project. Logs shall include as a minimum the date, time, weather, operator, type and specifications of the hammer, pile size, pile type, location in structure, depth of penetration, total length, # of splices, location of splices, type of splice, length of cut-off, # of blows per inch at termination, resulting load capacity, and sample calculations specific to the hammer for determining load capacity.

H. Miscellaneous Bridge Materials; FIO

Manufacturer's data for all bridge materials to be furnished.

5.1.3. Delivery, Storage, and Handling of Materials

Materials and Samples

The Contractor is responsible for notifying the Engineer when materials are delivered to the project site, or to a fabricating facility, if applicable. If any fabrication of materials occurs offsite, the Contractor will notify the Engineer prior to fabrication, and will furnish shop drawings for approval prior to fabrication of materials.

The Engineer will notify the Contractor as to the status of materials approved or disapproved. Disapproved materials that have already been delivered to the project site will be promptly segregated from the approved materials and removed from the premises. If materials are disapproved, acceptable replacement materials will be provided at no additional cost to the Authority.

Initial approval by the Engineer will not prevent the removal and replacement of materials that are materially defective or materials not meeting this specification that are discovered during construction and/or routine quality control/quality assurance operations.

The Contractor is solely responsible for the security and protection of all materials delivered to the project site. The Contractor is responsible for replacing lost, stolen or damaged materials at no additional cost to the Authority.

All structural materials will be handled in such a manner as to protect such materials from being damaged and will be stored in such a manner as to be protected from vandalism. Materials damaged during unloading, handling, or installation will be replaced by the Contractor at the Contractor's cost.

5.1.4. Qualifications

A. Bridge Construction

Bridge construction will be performed under the direction of qualified and competent supervisory personnel experienced in railroad bridge construction.

B. Welding

Welding will be performed under the direct supervision of a certified welding supervisor or foreman.

C. Jacking/ Rigging

Jacking and moving of heavy structures will be performed under the direction of qualified and competent supervisory personnel experienced in rigging operations. The Contractor will be responsible for any damages occurring as a result of negligence or improper handling.

5.1.5. Site Conditions

During construction, the Contractor will restore the bridge and track to a condition both safe and suitable for service as needed by the Railroad for its regular train operations.

Track time must be scheduled with the Railroad, and the track restored and/or cleared for service by the designated time. The Contractor is responsible for train delays. Any penalty for delays will be outlined in the liquidated damages section of the project Documents, and/or in the general conditions.

Drainage will be maintained through the project site during the full term of the project. Accumulation of water that might be detrimental to, or affect the stability of the roadbed will not be permitted. Ditches will be maintained in good working condition, and no debris will be allowed to block ditches or culverts.

END OF SECTION

5.2 Timber Structures

5.2.1. Description

This work will consist of constructing structures or parts of structures composed of treated timber. Timber structures will be constructed on prepared foundations at the locations indicated or directed with the dimensions, lines and grades shown on the Plans or as directed by the Engineer, and in accordance with these Specifications.

Parts of timber structures to be constructed with materials other than timber, such as concrete, steel, etc., will be constructed in accordance with the requirements of the Sections pertaining to the respective types of structure.

The Contractor will be responsible for purchasing, cutting, loading, transporting, distributing, and installing all timber required to complete the work indicated on the Plans and Specifications or as so designated within the Scope of Work.

5.2.2. Materials

Lumber, including structural lumber, is the product of the saw and planing mill not further than by sawing, resawing, passing lengthwise through a standard planing machine, cross cutting to length and working. After the lumber is produced, it is necessary to inspect each piece individually to determine its grade. Lumber that is so graded that working stresses can be assigned is called stress-graded or structural lumber. Existing grading rules for structural lumber issued by the industry's regional agencies are in conformity generally with the recommendations of ASTM D 2555 and ASTM D 245 and the range of grades available is adequate for railway purposes.

Timber material will be new, dense graded southern pine, or approved equal, in accordance with paragraph 423 of the Southern Pine Inspection Bureau's Grading Rules, 1987 Edition, effective 3-15-77, except to be free of wane, and will meet all other AREMA guidelines and Specifications for material and treatment.

All timber material will be thoroughly air seasoned or properly conditioned for preservative treatment, and pressure treated as per AREMA MRE Chapter 3, with an appropriate creosote-coal tar preserving process.

It is recommended that structural lumber be purchased in accordance with the grading rules of the industry's agency publishing rules for the species.

When ordering structural lumber an inquiry or purchase order should clearly stipulate: quantity in board feet or number of pieces; thickness, width and length; whether rough or surfaced and extent of surfacing; stress-grade; species of wood; the name and date of the rule book and the name of the organization issuing it; any exceptions to or modifications of the grading rules such as:

- Lumber to be free of wane;
- Seasoned, stating the method and acceptable moisture content (Note that mills do not ordinarily season beam and stringer or post and timber sizes.);
- Special heartwood requirements;
- Special shear grades;
- Special provisions to make joist and plank or beam and stringer grades suitable for continuous spans;
- Special provisions to make joist and plank or beam and stringer grades suitable as columns or tension members;
- Special inspection provisions; and, provisions for treatment.

All exposed untreated timber such as where timber is cut, will be coated using an approved timber preservative, at time of cutting.

All timber construction will conform to Chapter 7 of the AREMA Manual of Railway Engineering. All connections and workmanship are subject to approval by the Engineer.

Steel hardware for timber connections will be A307 or better.

All bolts must be accompanied by a matching nut and washer. Bolts for connecting structural timber will have washers conforming to AREMA standards.

Holes for timber connections will be bored at the same diameter as the bolt, and 1/8" less than the nominal diameter of lag screws in timber.

5.2.3. Equipment

All equipment necessary for the satisfactory performance of this construction will be on the project and approved by the Engineer before work will be permitted to begin.

5.2.4. Mud Blocking

Mud blocks will be firmly and evenly bedded to a solid bearing and tamped in place. Blocking will conform to size as noted on the Bid Sheet and Scope of Work.

5.2.5. Sills

Nominal size of sills will be 14 1/2" x 15" x (12', 14', 16', 18' or 20'), as noted on the Bid Sheet and Scope of Work.

Sills are to be installed at various locations as noted on the Plans or as directed by the Engineer. Top of sill elevations will be such that a level or constant top of rail grade is achieved across the entire bridge. If necessary, the Contractor will cut the tops of existing piling or posts to provide a uniform bearing across the tops of all piling or posts in each bent.

Sills will be placed while the piles are held in correct position. Where drift bolts (pins) are used for making the connection, the ends of piles will be bored the same diameter as the drift bolt to a depth of 9 inches into the piling. Drift pins for connecting sills to piling will be 24-inch button head drift pins.

OsmoWeld, or approved equal epoxy filler and sealant, will be used at the interface of all timber posts and sills.

5.2.6. Caps

Nominal size of caps will be 14 1/2" x 15" x (12', 14', 16', 18' or 20'), as noted on the Bid Sheet and Scope of Work.

Caps are to be installed at various locations as noted on the Plans or as directed by the Engineer. Top of cap elevations will be such that a level or constant top of rail grade is achieved across the entire bridge. If necessary, the Contractor will cut the tops of existing piling or posts to provide a uniform bearing across the tops of all piling or posts in each bent.

Caps will be placed while the piles are held in correct position. Where drift bolts (pins) are used for making the connection, the ends of piles will be bored the same diameter as the drift bolt to a depth of 9 inches into the piling. Drift pins for connecting caps to piling will be 24-inch button head drift pins.

OsmoWeld, or approved equal epoxy filler and sealant, will be used at the interface of all timber posts and caps.

5.2.7. Posts for Bents

Posts will be fastened to sills and pedestals with dowels of not less than 3/4" diameter extending into posts and sills as shown on the Plans.

OsmoWeld, or approved equal epoxy filler and sealant, will be used at the interface of all timber posts and caps and/or sills.

Where bents are being rebuilt or posts replaced, track surface and line will be restored to uniform surface and line, and the bents will be realigned and plumbed as much as possible using the means and methods determined by the Contractor.

5.2.8. Framed Bents

Bent timbers will be cut and framed to a close fit in such a manner that they will have an even bearing over the entire contact surface of the joint. No blocking or shimming will be allowed in making joint, nor will open joints be permitted.

OsmoWeld, or approved equal epoxy filler and sealant, will be used at the interface of all timber posts and caps and/or sills.

Where bents are being rebuilt or posts replaced, track surface and line will be restored to uniform surface and line, and the bents will be realigned and plumbed as much as possible using the means and methods determined by the Contractor.

Contractor will use all new 3" x 10" treated timber bracing, with all new fasteners to make the connections as per the Plan details or as per Chapter 7 of the AREMA Manual for Railway Engineering.

5.2.9. Stringers

All stringers will be set or placed to required elevations as to give decking an even bearing at all contacts or intersections.

Nominal size of stringers will be 8" x 16" x 14'-0", as noted on the Bid Sheet and Scope of Work.

Unless otherwise specified, outside stringers will have butt joints, but interior stringers will be framed to bear over the full width of cap at each end of the stringer.

Connections will be made as per the Plan details or as per Chapter 7 of the AREMA Manual for Railway Engineering.

All exposed untreated timber such as where timber is cut, will be coated using an approved timber preservative, at time of cutting.

5.2.10. Bracing

Contractor will use all new 3" x 10" treated timber bracing, with all new fasteners to make the connections as per the Plan details or as per Chapter 7 of the AREMA Manual for Railway Engineering.

All exposed untreated timber such as where timber is cut, will be coated using an approved timber preservative, at time of cutting.

5.2.11. Deck Boards

All deck boards will be constructed as indicated on the Plans, or as directed by the Engineer. Deck Boards will have even, full and uniform free bearing on each and all stringers and will not be pulled or warped so as to have such bearing. Shims and wedges will not be permitted unless approved by the Engineer.

Nominal size of deck boards will be 5" x 9" x 14'-0", as noted on the Bid Sheet and Scope of Work.

Connections will be made as per the Plan details or as per Chapter 7 of the AREMA Manual for Railway Engineering.

All exposed untreated timber such as where timber is cut, will be coated using an approved timber preservative, at time of cutting.

5.2.11. Ballast Guard

Nominal size of deck boards will be 8" x 12", as noted on the Bid Sheet and Scope of Work.

Connections will be made as per the Plan details or as per Chapter 7 of the AREMA Manual for Railway Engineering.

All exposed untreated timber such as where timber is cut, will be coated using an approved timber preservative, at time of cutting.

5.2.12. Measurement and Payment

For all treated timber products used, including hardware, and for all labor, equipment and tools, payment will be included in the unit bid price.

The Contractor will not exceed contract quantities without proper change order, approved by the Engineer.

Payment will not be made for any treated timber in excess of the specified quantity without proper approved change order.

The accepted quantity of treated timber will be paid for at the contract unit price bid as listed in the Bid Sheet, and as per the final cost schedule. Such payment will be full compensation for furnishing and installing treated timber under the Contract.

END OF SECTION

- 5.3. Steel Structures – N/A**
- 5.4. Painting – N/A**
- 5.5. Concrete Structures – N/A**
- 5.6. Waterproofing – N/A**

5.7. Piling

5.7.1. Description

This work will consist of piling furnished and driven or placed in accordance with these Specifications and Plans or as directed by the Engineer.

5.7.2. Materials

Structural steel piles will be rolled steel sections of the weight and shape called for on the Plans. They will be structural steel meeting the requirements of ASTM A36. All steel piles that extend above the ground or water surface will be protected by painting if weathering steel is not used. Piles bent or otherwise damaged will be rejected.

All timber piles will be cut from live, solid, sound trees. They will be free from defects such as injurious ring shakes, large, loose or unsound knots, decay or other defects which might impair their strength or durability. All timber piles will have a minimum diameter of 12" and will be treated timber. Timber piling will conform Chapter 7, Section 1.9 of the AREMA Manual for Railway Engineering.

5.7.3. Equipment

All equipment necessary for the satisfactory performance of this construction will be on the project and approved by the Engineer before work will be permitted to begin.

5.7.4. Driving Piles – N/A

5.7.5. Bearing Value and Penetration – N/A

5.7.6. Pile Splices

Full-length steel or timber piles will always be used where practicable, but if splices cannot be avoided, a method of splicing as detailed on the Plans will be used. Spliced piles will have a full, true and even bearing at the joint.

The Contractor will strive to have only one splice per pile and not have a splice above ground.

5.7.7. Pile Tips – N/A

5.7.8. Cutoffs and Treatment of Pile Heads – N/A

5.7.9. Measurement and Payment

For all piling used, including hardware, and for all labor, equipment and tools, payment will be included in the unit bid price.

The Contractor will not exceed contract quantities without proper change order, approved by the Engineer.

Payment will not be made for any piling in excess of the specified quantity without proper approved change order.

The accepted quantity of piling will be paid for at the contract unit price bid as listed in the Bid Sheet, and as per the final cost schedule. Furnished piling delivered to the project site will be paid in full up to the quantity listed on the bid sheet and per the final cost schedule. Installed piling item will only be paid for based on the measured linear feet driven up to the proposed pile cut off elevation.

END OF SECTION

- 5.8. Precast-Prestressed Concrete Bridge Members – N/A**
- 5.9. Bearings – N/A**
- 5.10. Grout – N/A**
- 5.11. Bridge Railings – N/A**

SECTION 10 - AGREEMENT

10.1 Insurance Requirements

Bidder hereby agrees that his/her own cost and expense, he/she will have or procured prior to commencement of any work under this Agreement, and will maintain in full force and effect until all work has been completed and accepted, and will require all subcontractors likewise to procure and maintain, unless they are covered by the Contractor's policies, insurance of the following kinds and minimum amounts. Insurance companies used to satisfy the insurance requirements of this Agreement will maintain an "A", financial size V classification as published by A.M. Best Rating Guide.

10.1.1 Workmen's Compensation Insurance, which fully meets the requirements of any Workmen's Compensation Law in force where the work is to be performed. Employer's Liability insurance will be an amount no less than \$500,000 each accident for bodily injury, \$500,000 policy limit for bodily injury by disease, and \$500,000 each employee for bodily injury by disease.

10.1.2 Commercial General Liability - Contractor will carry commercial general liability insurance on an "occurrence" form covering all operations by or on behalf of the Contractor providing insurance for bodily injury liability, property damage liability and personal injury liability for the limits of liability indicated below and including coverage for:

- A. Premises and Operations
- B. Products and Completed Operations
- C. Owners and Contractors Protective
- D. Blanket Contractual Liability insuring the obligations assumed by the Contractor under this agreement.
- E. Broad Form Property Damage (including completed operations)
- F. The Explosion Collapse and Underground Hazards
- G. Cross Suits Liability
- H. Independent Contractors
- I. Delete any reference or restriction: to work performed within fifty (50) feet of a railroad or railroad property, and affecting any railroad bridge or trestle, tracks, roadbeds, tunnel underpass, or crossing; or that refers to any agreement which indemnifies a railroad.

The limits of liability will not be less than:

\$ 1,000,000. Each occurrence (combined single limit for Bodily Injury and Property Damage)

\$ 1,000,000. for Personal injury Liability

\$ 1,000,000. Aggregate for Products - Completed Operations

\$ 2,000,000. General Aggregate

Except with respect to bodily injury and property damage included within the products and completed operations hazards, the aggregate limit will apply separately to each project.

The above insurance must be maintained during the term of the project.

Additional Insured/Waivers of Subrogation - The Contractor will have the following endorsement added to their General Liability policy:

It is hereby agreed and understood that:

The Railroad and Engineer, including directors, officers and employees thereof, are hereby added as Additional Insureds with respect to accidents, occurrences, claims and damages arising out of or resulting from the Work or Project.

The coverage afforded the additional insureds under the policy will be primary insurance. If the additional insured has other insurance, which is applicable to the loss, such other insurance will be on an excess, contingent and non-contributory basis. The amount of the Contractor's liability under this policy will not be reduced by the existence of such other insurance.

10.1.3 Automobile Liability Insurance (Bodily Injury and Property Damage Liability) including coverage for owned, hired and non-owned automobiles. The limits of liability will not be less than \$1,000,000 Combined Single Limit each accident for Bodily Injury and Property Damage combined.

10.1.4 Excess Liability (Umbrella) - Excess Liability or Umbrella in excess of the Employer Liability, General Liability, and Auto Liability Coverage with a limit of not less than \$1,000,000 for each occurrence and in the per annum aggregate.

10.1.5 Railroad Protective Liability - The Contractor will obtain a policy of Railroad Protective Liability insurance naming the Railroad as named insured. The policy will provide limits of liability of \$2,000,000 each occurrence, and \$6,000,000 in the aggregate.

The Contractor will include the cost of railroad protective liability insurance for this project in the cost of other items on the bid sheet.

Prior to the start of work the Contractor will furnish the Engineer and Railroad proof of all insurance, including railroad protective liability insurance in the amount of two million dollars (\$2,000,000) per occurrence, six million dollars (\$6,000,000) aggregate, showing the Railroad as insured. A copy of the insurance certificate will be furnished to the Engineer and the Railroad.

In lieu of Railroad Protective Liability Insurance, CONTRACTOR may utilize their Commercial Liability coverage. To utilize their Commercial Liability coverage, both railroad perils within fifty feet of the right of way and items under the Federal Employer

Liability Act must be covered. Coverage of at least \$2,000,000 per occurrence and an aggregate limit of \$6,000,000 over the life of the policy must be maintained. Insurance shall be primary and without right of contribution from other insurance that may be in effect and without subordination.

10.2 BID SHEET

KXHR Project - Tennessee FY2020 Short Line Railroad Preservation Grant Funds Program

Date _____ Place _____

Proposal of _____
(hereinafter called Bidder)

(a corporation) (a partnership) (an individual doing business as _____)

[Strike out inapplicable terms]

Dear Sir or Madam:

The Bidder, in compliance with your invitation for bids for KXHR’s Project - TDOT Project # 47RR20S3004 of Tennessee’s Short Line Railroad Preservation Grant Program FY2020, the Bidder, having examined the RFP and other Plans and Specifications, provided as described herein, with the related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of labor, hereby proposes to furnish all material for the project in accordance with the RFP and other provided Project Documents, within the time set forth therein, and at the prices stated on the final cost schedule. These prices are to cover all expenses incurred in performing the work required under the Project Documents, of which this Agreement is a part.

The Bidder hereby agrees to commence work under this Agreement within thirty (30) days of the date of written “Notice to Proceed” of the Railroad and to fully complete the project within 180 calendar days as stipulated in the Specifications. The Bidder further agrees to pay as liquidated damages, the sum of \$500.00 for each consecutive calendar day thereafter until the project is 100% complete.

The Bidder acknowledges receipt of the following addenda:

Date: _____

Date: _____

Date: _____

Date: _____

Date: _____

Date: _____

Date: _____

Date: _____

The Bidder understands that the Railroad reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that the bid will be good and may not be withdrawn for a period of 120 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written Notice of Award of this bid, Bidder will execute the formal agreement attached within ten days and deliver the required Performance and Payment Bonds by the date of the Preconstruction Meeting, or before entering the property to begin work if a Preconstruction Meeting is not held.

The Bid Sheet must be filled out by the Bidder completely, listing a unit price in numerals, unit price in words, and extended amount for each bid item. Unit prices in words will govern in cases where the unit price and extended price do not agree. Incomplete forms will not be considered. The extended amount is calculated by multiplying the quantity times the unit price for each item.

The total contract amount may be increased or decreased by 25% by the Railroad, based on the total bid amount and availability of funds. The Railroad reserves the right to increase or decrease unit quantities, to be determined upon the availability of funds.

The Railroad reserves the right to reject any or all bids.

The project will not be considered complete until the Receiving 3rd Party completes all task assigned to them and which may require the Contractor to provide additional materials up to the completion of work. Upon completion of the project, the Engineer will determine final acceptance of the project.

Refer to the 'Instructions to Bidders' (Section 1) of the Project Documents for detailed requirements.

The price for mobilization will not exceed 5% of the total bid price, or the bid will be rejected.

The Bid Sheet must be signed, or the bid will be rejected.

The Contractor is required to submit its Bid in a sealed envelope. The sealed bid envelope must have the required Contractor license information on the outside of the envelope as described in Section 1.4 or the bid will be rejected.

Construction contractors must submit an affidavit stating compliance with drug-free workplace program at time of bid submission. Refer to the Attachments Section of these Project Documents.

10.3 CONTRACTOR'S LIST OF SUBCONTRACTORS OR THIRD-PARTY CONTRACTORS

The Contractor, as attested below, hereby acknowledges that the firm(s) listed below will be engaged to work on all or part of the Scope of Work as noted in the Specifications herein. The Contractor stipulates that no other companies will be engaged to perform work under this Agreement without notification and the expressed written permission of the Engineer.

This form is to be submitted with the Bid:

Subcontractor Company Name

Address

City/State/Zip Code

Contact Name

Phone Number

Subcontractor Company Name

Address

City/State/Zip Code

Contact Name

Phone Number

I attest that the above listed subcontractors will be used on this project.

Signed/Title

Date

10.4 BID BOND

The Contractor will provide a bid bond as per the form attached.

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ and

as Principle

_____ as Surety

are hereby held and firmly bound unto the Knox County Railroad Authority and Knoxville & Holston River Railroad Co., INC. (Obligees)

_____ Address of Obligees

in the penal sum of _____ Dollars. (\$_____)

for the payment of which, well and truly to be made the said principal and said surety hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns, firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION is such that whereas, the Principle has submitted to the Railroad a certain BID attached hereto and hereby made a part hereof to enter into an Agreement in writing, for the Knoxville & Holston River Railroad Co., INC. on TDOT Project # 47RR20S3004 of Tennessee’s Short Line Railroad Preservation Grant Program FY2020.

NOW, THEREFORE,

- a. If said BID will be rejected or
- b. If said BID will be accepted and the Principal will execute and enter into an Agreement with obligees in the Form of Agreement attached hereto (properly completed in accordance with said BID) and will furnish a 100% Bond for the faithful performance of said Agreement, and for the prompt payment of all persons performing labor and furnishing materials in connection therewith,

and will in all other respects perform the Agreement created by the acceptance of said BID, or in the event of the failure of the principal to enter such Agreement and give such bond or bonds, if the principal will pay the obligees the difference not to exceed the penalty here of between the amount specified in said BID and such larger amount for which the obligees in good faith contract with another party to perform the work covered by said BID, then this obligation will be void, otherwise the same will remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder will, in no event, exceed the penal 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 will be in no way impaired or affected by any extension of the time within which the Railroad may accept such BOND; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principle and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year as set forth.

Signed and sealed this _____ day of _____ 20__

Principle (L.S.) Witness _____

By: _____
Title

Surety Witness _____

By: _____
Title

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Tennessee.

10.5 PERFORMANCE BOND

The Contractor will provide a performance and payment bond as per the form attached. The Contractor will include the cost of bonds in the unit price for each bid item.

KNOW ALL MEN BY THESE PRESENTS,

that _____
(Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called Contractor, and, _____
_____, a corporation duly organized under the laws of the
State of _____ as Surety, hereinafter called Surety, are held and firmly
bound unto the Knox County Railroad Authority and Knoxville & Holston River Railroad Co.,
INC. as Obligees, hereinafter, hereinafter called Railroad, in the amount of
_____ Dollars
(\$ _____), for the payment whereof Contractor and Surety bind themselves,
their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, Contractor has by written Agreement dated _____, 20____,
entered into an Agreement with the Railroad for KXHR Project - TDOT Project #
47RR20S3004 of Tennessee's Short Line Railroad Preservation Grant Program FY2020, in
accordance with this RFP and other Project Documents, Plans, Specifications, or
attachments, prepared by

Railroad Consultants, PLLC
213 Uptown Square, Murfreesboro, TN 37129

which Project Documents are by reference made a part hereof, and is hereinafter referred
to as the Agreement.

NOW, THEREFORE,

The conditions of this obligation is such that, if Contractor will promptly and faithfully perform
said Agreement, then this obligation will be null and void; otherwise it will remain in full force
and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Railroad.

Whenever the Contractor will be, and declared by the Railroad to be in default under the
Agreement, the Railroad having performed Railroad's obligations thereunder, the Surety may
promptly remedy the default, or will promptly

- 1) Complete the Project in accordance with the terms and conditions, or
- 2) Obtain a bid or bids for completing the Project in accordance with its terms and conditions,
and upon termination by Surety of the lowest responsible bidder, or, if the Railroad elects,
upon determination by the Railroad and the Surety jointly of the lowest responsible bidder,

arrange for a contract between such bidder and Railroad, and make available as Work progresses (even though there should be a default or a succession of defaults under the Agreement or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Agreement price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Agreement price", as used in this paragraph, will mean the total amount payable by Railroad to Contractor under the Agreement and any amendments thereto, less the amount properly paid by the Railroad to the Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which the final payment under the Agreement falls due.

No right of action will accrue on this bond to or for the use of any person or corporation other than the Railroad herein or the heirs, executors, administrators, or successors of the Railroad.

Signed and sealed this _____ day of _____, 20____, year first set forth above.

(Principle) (Seal)

(Witness)

(Witness)

By _____
(Attorney-in-Fact)

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Tennessee.

10.6 PAYMENT BOND

LABOR AND MATERIAL *This Bond is Issued Simultaneously with Performance Bond in Favor of the Railroad Conditioned on the Full and Faithful Performance of the Agreement*

KNOW ALL MEN BY THESE PRESENTS,

that _____
(Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called Contractor, and, _____
_____, a corporation duly organized under the laws of the
State of _____ as Surety, hereinafter called Surety, are held and firmly
bound unto the Knoxville & Holston River Railroad Co., INC. ("KXHR"),

as Obligees, hereinafter, hereinafter called Railroad, in the amount of
_____ Dollars
(\$ _____), for the payment whereof Contractor and Surety bind themselves,
their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, Contractor has by written Agreement dated _____, 20____,
entered into an Agreement with the Railroad for KXHR Project - TDOT Project #
47RR20S3004 of Tennessee's Short Line Railroad Preservation Grant Program FY2020, in
accordance with this RFP and other Project Documents, Plans, Specifications, or
attachments, prepared by

Railroad Consultants, PLLC
213 Uptown Square, Murfreesboro, TN 37129

which Agreement is by reference made a part hereof, and is hereinafter referred to as the
Project.

NOW, THEREFORE,

The conditions of this obligation is such that, if Principal will promptly make payment to all
claimants as hereinafter defined, for all labor and material used or reasonably required for
use in the performance of the Agreement, then this obligation will be void; otherwise it will
remain in full force and effect, subject, however, to the following conditions.

1. A claimant is defined as one having a direct contract with the Principal or with a
subcontractor of the Principal for labor, material, or both, used or reasonably required for use
in the performance of the Agreement, labor and material being construed to include that part
of water, gas, power, light, heat, oil, gasoline telephone service or rental equipment directly
applicable to the Agreement.

2. The above named Principal and Surety hereby jointly and severally agree with the Railroad that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Railroad will not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action will be commenced hereunder by any claimant:

a) Unless Claimant, other than one having a direct contract with the Principal, will have given written notice to any two of the following: the Principal, the Railroad, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice will be served by mailing the same by registered mail, or certified mail, postage prepaid, in an envelope addressed to the Principal, Railroad or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which the legal process may be served in the State in which the aforesaid project is located, saved that such service may not be made by a public officer.

b) After the expiration of one year following the date on which Principal ceased work on said Agreement, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation will be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

c) Other than in a State court of competent jurisdiction in and for the County or other political subdivision of the State in which the project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond will be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by surety of mechanics' liens which may be filed of record against said improvement, where or not claimed for the amount of such lien be presented under and against this bond.

Signed and sealed this _____ day of _____, 20____.

(Principal) (Seal)

(Witness)

(Witness)

By _____
(Attorney-in-Fact)

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Tennessee.

10.7 MOBILIZATION

The Contractor will be reimbursed for mobilization as per the lump sum bid price for mobilization on the bid sheet. The Contractor may invoice for all mobilization expenses on the first invoice.

It is a requirement that the price for mobilization may not exceed 5% of the total bid amount, or the bid will be rejected. To check this condition, divide the amount for mobilization by the total bid amount. The result must be less than 0.0500, or the bid will be rejected.

10.8 AGREEMENT

(Contract)

This Agreement, made this _____ day of _____, 20____, by and between the Knox County Railroad Authority and Knoxville & Holston River Railroad Co., INC., herein called "Railroad", acting herein through its chairman, and _____ (a corporation) (a partnership) (an individual doing business as _____)

of _____, County of _____ and state of _____, hereinafter called "Contractor".

Witnesseth: That for and in consideration of the payments and agreements herein mentioned, to be made and performed by the Railroad, the Contractor hereby agrees with the Railroad to commence and complete the construction described as follows:

To provide all materials in order to complete the KXHR Project - TDOT Project # 47RR20S3004 of Tennessee's Short Line Railroad Preservation Grant Program FY2020, in accordance with this RFP and other Project Documents, Plans, Specifications, or attachments, and at the unit prices quoted, hereinafter called the "project", for the sum of _____ Dollars (\$_____)

and all extra work in connection therewith, under the terms as stated in the Project Documents; and as this (its or their) own property cost and expense to furnish all the materials, insurance, bonds, access, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated on the Bid Sheet, the final cost schedule, the Project Documents, Plans and Specifications as prepared by Railroad Consultants, PLLC, herein entitled the "Engineer", all of which are made a part hereof and collectively evidence and constitute the Agreement.

The Contractor hereby agrees to commence the work under this Agreement within thirty (30) days after the date of written "Notice to Proceed", and will complete the project within 45 calendar days from the date of written "Notice to Proceed".

The undersigned bidder hereby certifies that he has received, read, and executed the following numbered addenda: _____.
Liquidated Damages: \$500.00 per calendar day beyond 45 calendar days after date of written "Notice to Proceed".

The Railroad agrees to pay the Contractor in current funds for the performance of the Agreement, subject to additions and deductions, as provided in the Agreement, signed change orders, or contract amendments, and to make payments on account thereof as provided in the Specifications.

IN WITNESS WHEREOF, the parties to these presents have executed this Agreement in five (5) counterparts, each of which will be deemed an original, in the year and day first above mentioned.

(Seal)

ATTEST:

Knoxville & Holston River Railroad Co., INC.

Date:_____

Witness

Date:_____

(Seal)

ATTEST:

Knox County Railroad Authority

Date:_____

(Seal)

ATTEST:

Contractor (Signature)

Date:_____

Print Name and Title

Witness

Date:_____

(Address and Zip Code)

(City, State, Zip Code)

Note: Secretary of Railroad should attest. If Contractor is a corporation, Secretary or Designee should attest.

10.9 CERTIFICATE OF RAILROAD'S ATTORNEY

I, the undersigned, _____, the duly authorized and acting legal representative of the Knoxville & Holston River Railroad Co., INC. do hereby certify as follows:

I have examined the attached Agreement(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper representative of the Knoxville & Holston River Railroad Co., INC.; that said representatives have full power and authority to execute said agreements on behalf of the Railroad.

Attorney

Date: _____

ATTACHMENTS

- **Daily Log**
- **Location Maps**
- **Consumer Information Sheets for Treated Timber**
- **State of Tennessee Wage Rate Decision**
- **Drug-Free Workplace Requirements**
- **Law Regarding Conflict of Interest**
- **Law Regarding Lobbying**
- **Plan Details**
- **Tennessee Code Annotated Section 62-6-119**
- **Project Contact List**
- **Contractor's Bid Sheet**
- **Final Cost Schedule**
- **Job Showing Notes**
- **Addenda**

Daily Log Form

DAILY LOG

KXHR Railroad Project – Tennessee FY2020 Short Line Railroad Preservation Program

Date: _____ Weather Conditions: _____

Air Temp. °F: Hi _____ Low _____ Date: _____ mm/dd/yyyy

Working Limits:

Description of Work:

Items Installed:

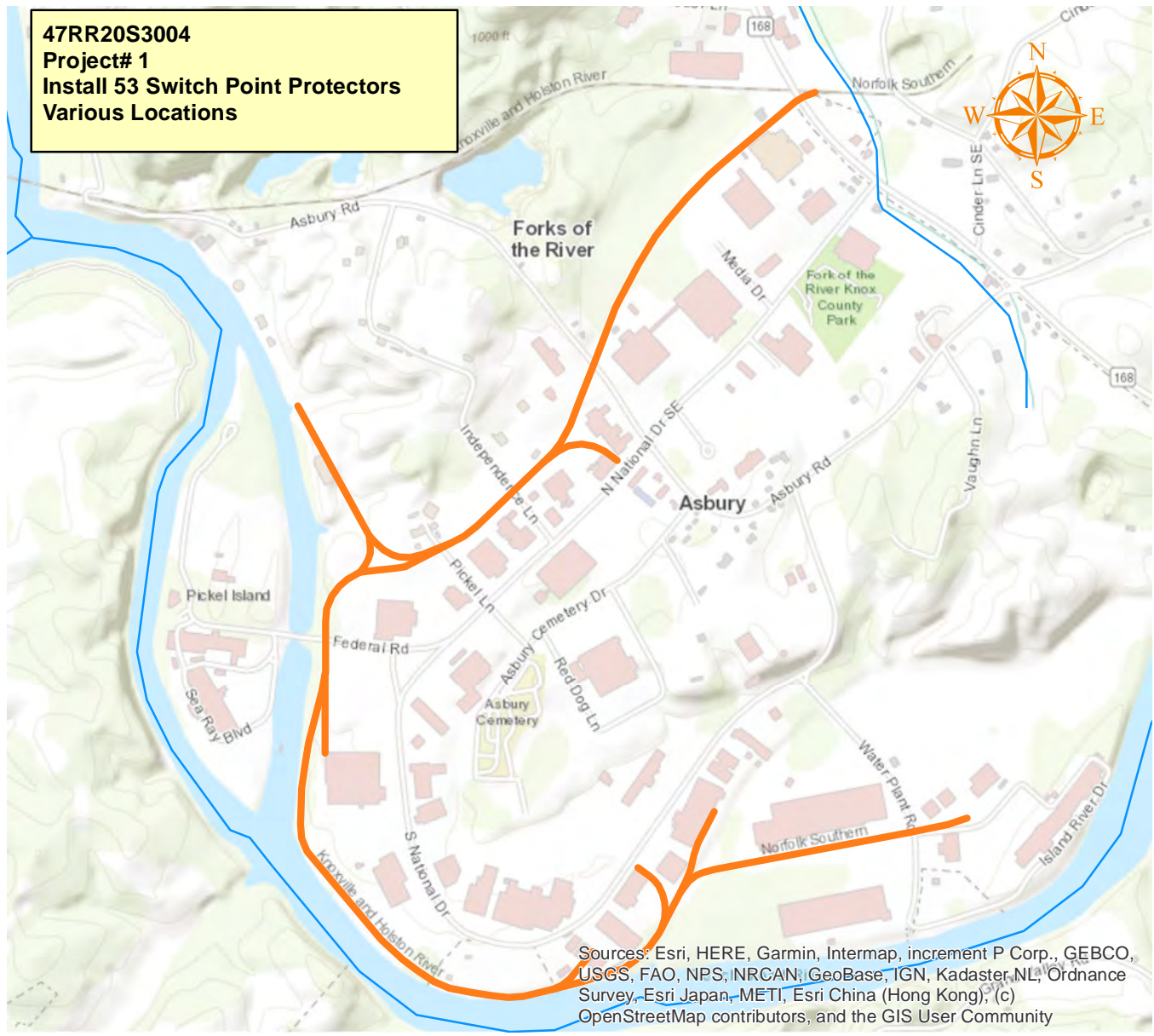
<u>Item No.</u>	<u>Description</u>	<u>Units</u>	<u>Quantity</u>	<u>From MP</u>	<u>To MP</u>

Contractor: _____

Name of Person Submitting Report: _____

Location Maps

47RR20S3004
Project# 1
Install 53 Switch Point Protectors
Various Locations



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster.NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

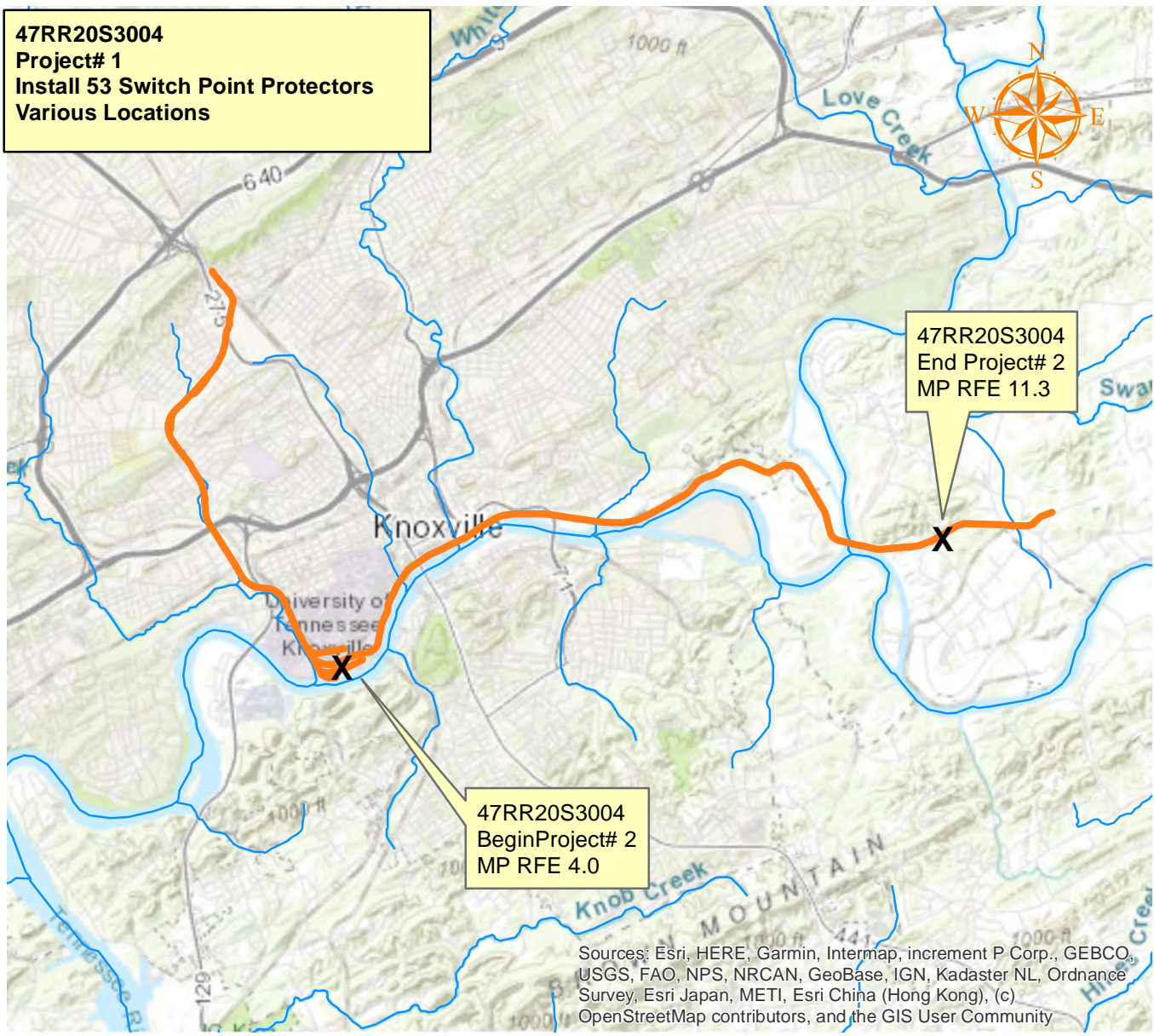
Legend

— KXHR (FOR)



Knoxville and Holston River Railroad

47RR20S3004
Project# 1
Install 53 Switch Point Protectors
Various Locations



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Legend

— KXHR (RFE)



Knoxville and Holston River Railroad

47RR20S3004
Project# 1
Install 53 Switch Point Protectors
Various Locations



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Legend

— KXHR (K and A)



Knoxville and Holston River Railroad

Consumer Information Sheets for Treated Timber

Consumer Information Sheet

INORGANIC ARSENIC PRESSURE-TREATED WOOD

Including: CCA, ACA, and ACZA)

CONSUMER INFORMATION

This wood has been preserved by pressure treatment with an EPA-registered pesticide containing inorganic arsenic to protect it from insect attack and decay; Wood treated with inorganic arsenic should be used only where such protection is important.

Inorganic arsenic penetrates deeply into and remains in the pressure-treated wood for a long time. Exposure to inorganic arsenic may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use or dispose of the treated wood.

USE SITE PRECAUTIONS

Wood pressure-treated with waterborne arsenical preservatives may be used inside residences as long as all sawdust and construction debris are cleaned up and disposed of after construction.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use treated wood for cutting-boards or countertops.

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives, which may come into contact with the honey.

Treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

HANDLING PRECAUTIONS

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves, fireplaces, or residential boilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

When power-sawing and machining, wear goggles to protect eyes from flying particles.

After working with the wood, and before eating, drinking, and use of tobacco products, wash exposed areas thoroughly.

If preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Approved by the U.S. Environmental Protection Agency 9/85.

Consumer Information Sheet

PENTACHLOROPHENOL PRESSURE-TREATED WOOD

CONSUMER INFORMATION

This wood has been preserved by pressure-treatment with an EPA-registered pesticide containing pentachlorophenol to protect it from insect attack and decay. Wood treated with pentachlorophenol should be used only where such protection is important.

Pentachlorophenol penetrates deeply into and remains in the pressure-treated wood for a long time. Exposure to pentachlorophenol may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use and dispose of the treated wood.

USE SITE PRECAUTIONS

Logs treated with pentachlorophenol should not be used for log homes.

Wood treated with pentachlorophenol should not be used where it will be in frequent or prolonged contact with bare skin (for example, chairs and other outdoor furniture), unless an effective sealer has been applied.

Pentachlorophenol-treated wood should not be used in residential, industrial, or commercial interiors except for laminated beams or for building components which are in ground contact and are subject to decay or insect infestation and where two coats of an appropriate sealer are applied. Sealers may be applied at the installation site.

Wood treated with pentachlorophenol should not be used in the interiors of farm buildings where there may be direct contact with domestic animals or livestock, which may crib (bite) or lick the wood.

In interiors of farm buildings where domestic animals or livestock are unlikely to crib (bite) or lick the wood, pentachlorophenol-treated wood may be used for building components that are in ground contact and are subject to decay or insect infestation and where two coats of an appropriate sealer are applied. Sealers may be applied at the installation site.

Do not use pentachlorophenol-treated wood for furrowing or brooding facilities.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use treated wood for cutting-boards or countertops.

Approved by the U.S. Environmental Protection Agency

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives which may come into contact with the honey.

Pentachlorophenol-treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

Do not use pentachlorophenol-treated wood where it may come into direct or indirect contact with drinking water for domestic animals or livestock, except for uses involving incidental contact such as docks and bridges.

HANDLING PRECAUTIONS

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves, fireplaces, or residential boilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers rated at 20 million BTU/hour or greater heat input or its equivalent in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

Avoid frequent or prolonged skin contact with pentachlorophenol-treated wood; when handling the treated wood, wear long sleeved shirts and long pants and use gloves impervious to the chemicals (for example, gloves that are vinyl-coated).

When power sawing and machining, wear goggles to protect eyes from flying particles.

After working with the wood, and before eating, drinking, and use of tobacco products, wash exposed areas thoroughly.

If oily preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Urethane, shellac, latex epoxy enamel and varnish are acceptable sealers for pentachlorophenol-treated wood.

Consumer Information Sheet

CREOSOTE PRESSURE-TREATED WOOD

CONSUMER INFORMATION

This wood has been preserved by pressure-treatment with an EPA-registered pesticide containing creosote to protect it from insect attack and decay. Wood treated with creosote should be used only where such protection is important.

Creosote may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use the treated wood.

USE SITE PRECAUTIONS

Wood treated with creosote should not be used where it will be in frequent or prolonged contact with bare skin (for example, chairs and other outdoor furniture) unless an effective sealer has been applied.

Creosote-treated wood should not be used in residential interiors. Creosote-treated wood in interiors of industrial buildings should be used only for industrial building components, which are in ground contact and are subject to decay or insect infestation and wood block flooring. For such uses, two coats of an appropriate sealer must be applied. Sealers may be applied at the installation site.

Wood treated with creosote should not be used in the interiors of farm buildings where there may be direct contact with domestic animals or livestock, which may crib (bite) or lick the wood.

In interiors of farm buildings where domestic animals or livestock are unlikely to crib (bite) or lick the wood, creosote-treated wood may be used for building components which are in ground contact and are subject to decay or insect infestation if two coats of an effective sealer are applied. Sealers may be applied at the installation site.

Do not use creosote-treated wood for furrowing or brooding facilities.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such use would be structures or containers for storing silage or food.

Do not use treated wood for putting boards or countertops.

Only treated wood that is visibly clean and free of surface residues should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives, which may come into contact with the honey.

Creosote-treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

Do not use creosote-treated wood where it may come into direct or indirect contact with drinking water for domestic animals or livestock, except for uses involving incidental contact such as docks and bridges.

HANDLING PRECAUTIONS

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves, fireplaces, or residential boilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

Avoid frequent or prolonged skin contact with creosote-treated wood; when handling the treated wood, wear long sleeved shirts and long pants and use gloves impervious to the chemicals (for example, gloves that are vinyl-coated).

When power-sawing and machining, wear goggles to protect eyes from flying particles.

After working with the wood, and before eating, drinking, and use of tobacco products, wash exposed areas thoroughly.

If oily preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Coal tar pitch and coal tar pitch emulsion are effective sealers for creosote-treated wood-block flooring.

Urethane, epoxy, and shellac are acceptable sealers for all creosote treated wood.

State of Tennessee Wage Rate Decision



CLASSIFICATION	CRAFT NUMBER	2020
Blaster	1	23.03
Bricklayer	2	16.60
Carpenter/Leadsperson	3	20.40
Class "A" Operators	4	22.29
Class "B" Operators	5	19.88
Class "C" Operators	6	20.66
Class "D" Operators	7	19.18
Concrete Finisher	8	18.38
Drill Operator (Caisson)	9	34.55
Electrician	10	32.85
Farm Tractor Operator (Power Broom)	11	15.72
Ironworkers Reinforcing	12	18.96
Ironworkers (Structural)	13	19.67
Large Crane Operator	14	23.80
Mechanic (Class I) Heavy Duty	15	24.99
Mechanic (Class II) Light Duty	16	22.14
Painter/Sandblaster	17	30.69
Skilled Laborer	18	17.85
Survey Instrument Operator	19	26.45
Sweeping Machine (Vacuum) Operator	20	18.27
Truck Driver (2 axles)	21	17.88
Truck Driver (3/4 axles)	22	17.36
Truck Driver (5 or more axles)	23	19.57
Unskilled Laborer	24	15.33
Worksite Traffic Coordinator	25	19.66

**Drug-Free Workplace Requirements
and Affidavit for submittal at time of bid
submittal**

Drug-Free Workplace Requirements

CONSTRUCTION CONTRACTORS MUST SUBMIT AFFIDAVIT STATING COMPLIANCE WITH DRUG-FREE WORKPLACE PROGRAM AT TIME OF BID SUBMISSION

Under the provisions of Tennessee Code Annotated § 50-9-113 enacted by the General Assembly last year, employers with five (5) or more employees who contract with either the state or a local government to provide **construction services** are required to submit an affidavit stating that they have a drug free workplace program that complies with Title 50, Chapter 9, in effect at the time of submission of a bid at least to the extent required of governmental entities. The statute imposes other requirements on the Contractor, but the county's responsibility is specifically limited in section (b) of the statute as follows:

(a) A written affidavit by the principal officer of a covered employer provided to a local government at the time such bid or contract is submitted stating that the employer is in compliance with this section shall absolve the local government of all further responsibility under this section and any liability arising from the employer's compliance or failure of compliance with the provisions of this section.

This statute went into effect on January 1, 2001. As stated in the statute, the Authority is only required to obtain an affidavit stating that the Contractor is in compliance with T.C.A. § 50-9-113. The affidavit must be submitted with the bid or contract for construction services.

Local governments are not to enter into a contract for construction services with any employer who is not in compliance with the provisions of T.C.A. § 50-9-113.

The affidavit attached must be completed by the Contractor and submitted with the BID. The affidavit complies with the minimum requirements of T.C.A. § 50-9-113(b), quoted above.

DRUG-FREE WORKPLACE AFFIDAVIT

The undersigned, principal officer of

_____, (hereinafter referred to as The undersigned, principal officer of _____ (the "Contractor"), an employer of five (5) or more employees contracting with the Knox County Railroad Authority to provide construction services, hereby states under oath as follows:

The undersigned is a principal officer of the Contractor, and is duly authorized to execute this Affidavit on behalf of the Contractor.

The Contractor submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the *Tennessee Code Annotated*.

The Contractor is in compliance with T.C.A. § 50-9-113 Further affiant saith not.

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of _____, 20__ Notary Public

My commission expires: _____

STATE OF _____ COUNTY OF _____

Principal Officer

Law Regarding Conflict of Interest

LAW REGARDING CONFLICT OF INTEREST

Conflict of Interest

Tennessee Code Annotated 5-21-121 states the following:

(a) The director, purchasing agent, members of the committee, members of the county legislative body, or other officials, employees, or members of the board of education or highway commission shall not be financially interested or have any personal beneficial interest, either directly or indirectly, in the purchase of any supplies, materials, equipment or contractual services for the county.

(b) No firm, corporation, partnership, association or individual furnishing any such supplies, materials, equipment or contractual services, shall give or offer nor shall the director or purchasing agent or any assistant or employee accept or receive directly or indirectly from any person, firm, corporation, partnership or association to whom any contract may be awarded, by rebate, gift or otherwise, any money or other things of value whatsoever, or any promise, obligation or contract for future reward or compensation.

The Attorney General of the State of Tennessee has opined that a conflict of interest extends to spouses of the referenced persons.

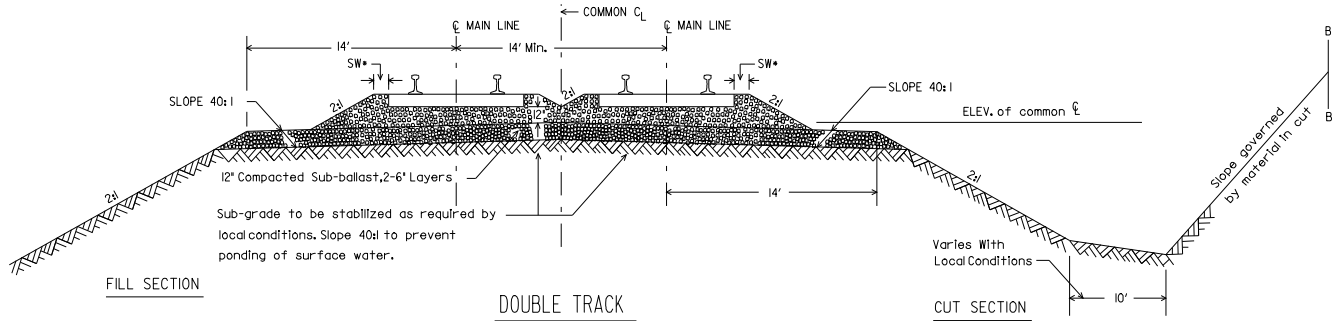
Since the Knox County Railroad Authority is a quasi governmental body created by legislation in the State of Tennessee, the law as stated above applies to the Authority.

Law Regarding Lobbying

Lobbying. The Grantee/Authority certifies, to the best of its knowledge and belief, that:

- a. No federally appropriated funds have been paid or will be paid, by or on behalf of the Grantee/Authority, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, and entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
- b. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this grant, loan, or cooperative agreement, the Grantee/Authority shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- c. The Grantee/Authority shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-grants, subcontracts, and contracts under grants, loans, and cooperative agreements) and that all recipients of federally appropriated funds shall certify and disclose accordingly.

NS Typical Roadbed Section Conforms with AREMA



FILL SECTION

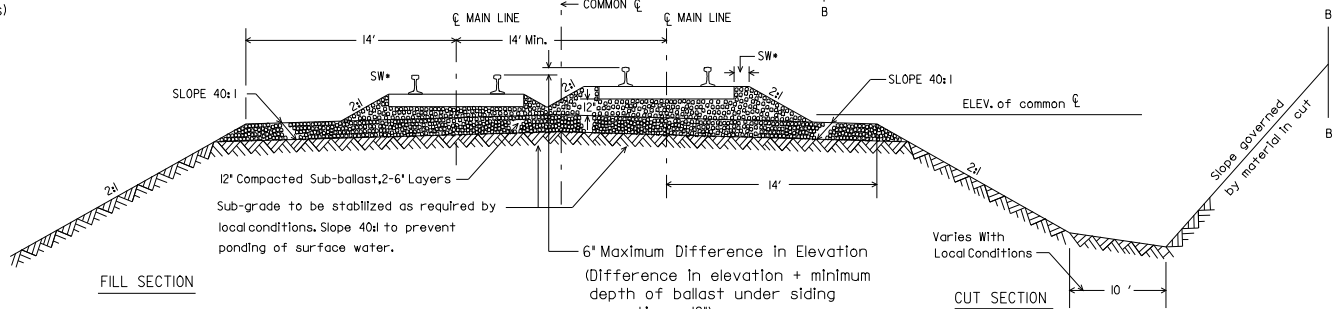
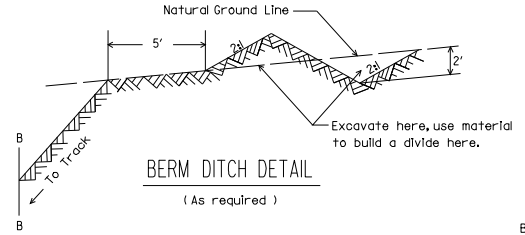
DOUBLE TRACK

CUT SECTION

SHOULDER WIDTH (SW) *

BALLAST WIDTH FROM END OF TIE TO EDGE OF SLOPE

	<u>Jointed Rail</u>	<u>Welded Rail</u>
SW (inside of Curve)	0'	6'
SW (Outside of Curve)	6'	12'
SW (Tangent both sides)	0'	6'



FILL SECTION

SINGLE MAIN TRACK AND PASSING SIDING

CUT SECTION

- (1) Sub-grade may be stabilized with lime, lime-fly ash, cement or stone.
- (2) Tamping of ballast must not disturb compacted sub-ballast.
- (3) Top of sub-grade is to be crowned.

NORFOLK SOUTHERN RAILWAY COMPANY

ROADBED SECTION

DOUBLE MAIN TRACKS

JANUARY 1989

Atlanta, Georgia

REVISION
6-25-90
CHANGED DEPTH OF BALLAST UNDER TIE FROM 15" TO 12"

DATE

Tennessee Code Annotated Section 62-6-119

**Tennessee Code Annotated Section 62-
6-119
Bid documents - Required disclosures by bidders**

(a) Any person or entity preparing plans, specifications or any other documentation for inclusion in an invitation to bid or comparable bid document including any electronic bidding documents, shall reference this chapter in such documentation and include a specific statement informing the invited bidder that it is necessary for such bidder to be properly licensed at the time of the bid and provide evidence of compliance with the applicable provisions of this chapter before such bid may be considered.

(b) The person or entity involved in the preparation of the invitation to bid or comparable bid documents, including any electronic bid documents, shall direct that the following information be written upon the bid envelope or provided within the electronic bid document:

(1) The name, license number, expiration date thereof, and license classification of the contractor applying to bid for the prime contract;

(2) The name, license number, expiration date thereof, and license classification of the contractor applying to bid for the masonry contract where the total cost of the materials and labor for the masonry portion of the construction project exceeds one hundred thousand dollars (\$100,000);

(3) The name, license number, expiration date thereof, and license classification of the contractor applying to bid for the electrical, plumbing, heating, ventilation, or air conditioning contracts except when such contractor's portion of the construction project is less than twenty-five thousand dollars (\$25,000);

(4) For each vertical closed loop geothermal heating and cooling project, the company name, department of environment and conservation license number, classification (G, L or G,L) and the expiration date, except when the geothermal portion of the construction project is in an amount less than twenty-five thousand dollars (\$25,000);

(5) Prime contractor bidders who are to perform the masonry portion of the construction project which exceeds one hundred thousand dollars (\$100,000), materials and labor, the electrical, plumbing, heating, ventilation or air conditioning or the geothermal heating and cooling must be so designated; and

(6) Only one (1) contractor in each of the classifications listed above shall be written on the bid envelope or provided within the electronic bid document.

(c) Failure of any bidder to furnish the required information shall void such bid and such bid shall not be considered. Upon opening of the bid envelope or initial opening of an electronic bid, the names of all contractors listed shall be read aloud at the official bid opening and incorporated into the bid. Prior to awarding a contract, the awarding person or entity and its authorized representatives shall verify the accuracy, correctness and completeness of the required information, and any discrepancies found in the spelling of names of bidders, transposition of license numbers, or other similar typographical errors or omissions may be corrected within forty-eight (48) hours after the bid opening excluding weekends and state-recognized holidays.

(d) No invitation to bid may require that any subcontractor be identified, listed or designated until the final bid submission by the prime contractor, or that any prime contractor accept the bid of any subcontractor until the final bid submission by the prime contractor. This subsection (d) shall apply only to design/bid/build procurements where cost is the primary criterion for the contract award.

(e) Any person or entity, public and private, awarding a bid to a contractor who is not licensed in accordance with this chapter shall be subject to the penalty provided in § 62-6-120(b).

(f) Notwithstanding the Uniform Administrative Procedures Act, compiled in title 4, chapter 5, relative to the amount of civil penalties that may be imposed, the board may impose a civil penalty not to exceed five thousand dollars (\$5,000) for willful violation of this section.

Project Contact List

EMERGENCY AND PROJECT CONTACT INFORMATION	
Knox County Emergency	911
Tennessee Highway Patrol	865-594-5800
Fire Dept. Downtown HQ	865-675-0775
Fort Sanders Reg. Med. Center, 1901 W. Clinch Ave.	865-541-1111
Emergency Room	865-541-1285
UT Medical Center, 1924 Alcoa Hwy	865-544-9000
Emergency Room	865-544-9401
Poison Control Centers	800-222-1222
Knoxville Police Dept	865-215-7000
Emergency Spills	
Norfolk Southern Corporation Environmental Spills	800-453-2530
TN Emergency Line for Hazardous Material Spills	800-262-3300
Tennessee Department of Transportation	
TN Emergency Management	800-262-3400
State Headquarters	615-741-2848
Rail Office	615-741-2781
Tennessee One-Call	800-351-1111
Knox County Railroad Authority	
Hon. Glenn Jacobs, Chairman	865-215-2005
Knoxville & Holston River Railroad	
Mr. Peter "Doc" Claussen, Jr.	865-525-9400

Contractor's Bid Sheet

prepared by:



**Bid Schedule for Bridge Work
KNOXVILLE HOLSTON RIVER RAILROAD**



TDOT SHORT LINE RAILROAD PRESERVATION GRANT PROGRAM FY2020

KNOXVILLE HOLSTON RIVER RAILROAD

Knox County, TN

Date:10/21/2020

RC File: 192100008TN_KCRA_Bridge

Item	Rev.	Description	Qty	Unit	Unit Price	Cost
TDOT#47RR20S3004						
<i>Project#1 Installation of Western-Cullen-Hayes Model FM Switch Point Guard basic unit or equal</i>						
001		Project#1 Mobilization	1	Ea		\$ -
002		Furnish and Install Switch Point Protectors as Located by Engineer	53	Ea		\$ -
TDOT#47RR20S3004 Project#1 Subtotal						\$ -
<i>Project#2 Upgrade 2.3 miles with New 136lb Rail multiple locations on RFE Line MP 4.0 to 11.3 = 12,129 TF</i>						
003		Project#2 Mobilization	1	LS		\$ -
004		Furnish and Install New 136RE Rail (~550 Tons)	12,129	TF		\$ -
005		Furnish and Install Thermanite Welding Kits (Est. Based on 78' sticks)	311	Ea		\$ -
006		Furnish and Install Grade 4/5 crossties - 3% Estimated Unusable Ties	220	Ea		\$ -
007		Furnish and Install Temporary Joint Bars (Estimated Amount to Reduce Service Impacts)	150	Ea		\$ -
008		Furnish Rail Anchors (Material Only, Installation in Line Item 004)	12,000	Ea		\$ -
009		Furnish Spikes by Keg (Material Only, Installation in Line Item 004)	45	Ea		\$ -
010		Furnish Tie Plugs Bundles (Material Only, Installation in Line Item 004)	30	Ea		\$ -
TDOT#47RR20S3004 Project#2 Subtotal						\$ -
Alt 004		Furnish and Install 136RE Class 1 Relay Rail w/Blank Ends (~550 Tons)	12,129	TF		\$ -
Alt 005		Furnish and Install Thermanite Welding Kits (Est. Based on 39' sticks)	622	Ea		\$ -
TDOT#47RR20S3004 Project#2 Subtotal with Alternate Bid Items						\$ -

prepared by:



**Bid Schedule for Bridge Work
KNOXVILLE HOLSTON RIVER RAILROAD**



TDOT SHORT LINE RAILROAD PRESERVATION GRANT PROGRAM FY2020

KNOXVILLE HOLSTON RIVER RAILROAD

Knox County, TN

Date:10/21/2020

RC File: 192100008TN_KCRA_Bridge

Item	Rev.	Description	Qty	Unit	Unit Price	Cost
Project#3 Various bridge improvements/repairs on the timber open deck bridge at the KA 1.8						
011		Project#3and Project#4 Mobilization	1	LS		
012		BENT 1 - FURNISH & INSTALL 12" TREATED TIMBER POST, 2 @ 28'-0 TO REPLACE POSTS 1 & 4	56	LF		
013		SPAN 3 - FURNISH & INSTALL TREATED TIMBER STRINGERS, 2 @ 8" X 16" X 14'-0" TO REPLACE STRINGERS 4 & 5	28	LF		
014		BENT 4A - FURNISH & INSTALL 12" TREATED TIMBER POST, 1 @ 28'-0 TO REPLACE POST 4	28	LF		
015		BENT 4A - FURNISH & INSTALL TREATED TIMBER TOP CAP, 1 @ 14" X 14" X 18'-0	18	LF		
016		BENT 4A - FURNISH & INSTALL TREATED TIMBER BOTTOM CAP, 2 @ 12" X 12" X 18'-0	2	EA		
017		BENT 4B - FURNISH & INSTALL TREATED TIMBER TOP CAP, 1 @ 14" X 14" X 18'-0	18	LF		
018		BENT 5A - FURNISH & INSTALL 12" TREATED TIMBER POST, 1 @ 28'-0 TO REPLACE POST 4.	28	LF		
019		BENT 5A - FURNISH & INSTALL TREATED TIMBER TOP CAP, 1 @ 14" X 14" X 18'-0	18	LF		
020		BENT 5A - FURNISH & INSTALL TREATED TIMBER MIDDLE CAP, 1 @ 12 X 12" X 18'-0	18	LF		
021		BENT 5A/B - FURNISH & INSTALL TREATED TIMBER BLOCKING (CUT TO APPROPRIATE SIZE, 3 PCS FOR EACH BEARING), 2 @ 12" X 12" X 18'-0	36	LF		
022		BENT 5B - FURNISH & INSTALL 12" TREATED TIMBER POST, 1 @ 28'-0 TO REPLACE POST 4	28	LF		
023		BENT 5B - FURNISH & INSTALL TREATED TIMBER TOP CAP, 1 @ 14" X 14" X 18'-0	18	LF		
024		BENT 5B - FURNISH & INSTALL TREATED TIMBER MIDDLE CAP, 1 @ 12" X 12" X 18'-0	18	LF		
025		BENT 5B - FURNISH & INSTALL TREATED TIMBER LOWER CAP, 1 @ 12" X 12" X 18'-0	18	LF		
026		SPAN 5 - FURNISH & INSTALL TREATED TIMBER STRINGERS, 1 @ 8" X 16" X 14'-0" TO REPLACE STRINGER 2	14	LF		
027		BENT 6 - FURNISH & INSTALL 12" TREATED TIMBER POST, 1 @ 28'-0 TO REPLACE POST 4	28	LF		
028		BENT 6 - FURNISH & INSTALL TREATED TIMBER TOP CAP, 1 @ 14" X 14" X 18'-0	1	EA		
029		FURNISH & INSTALL NEW TREATED DECK TIES WITH NEW SPIKES, 30 @ 10" X 9" X 10'-0	30	EA		
030		FURNISH & INSTALL NEW TREATED GUARD TIMBER WITH NEW HARDWARE, 12 @ 5" X 8" X 16'-0	1600	TN		
031		SPAN 7 - FURNISH & INSTALL TREATED TIMBER STRINGERS, 1 @ 8" X 16" X 14'-0" TO REPLACE STRINGER 2	14	LF		
032		FURNISH & INSTALL NEW WALKWAY, DECK & RAILS	1	LS		
TDOT#47RR20S3004 Project#3 Subtotal						

prepared by:



Bid Schedule for Bridge Work KNOXVILLE HOLSTON RIVER RAILROAD



TDOT SHORT LINE RAILROAD PRESERVATION GRANT PROGRAM FY2020

KNOXVILLE HOLSTON RIVER RAILROAD

Knox County, TN

Date: 10/21/2020

RC File: 19210008TN_KCRA_Bridge

Project#4 Various bridge improvements/repairs on the timber open deck bridge at the KA 2.5

033	BENT 2 - FURNISH & INSTALL TREATED TIMBER MUD BLOCKING, 8 @ 16" X 9" X 6'-0	48	LF		
034	BENT 3 - FURNISH & INSTALL TREATED TIMBER MUD BLOCKING, 8 @ 16" X 9" X 6'-0	48	LF		
035	BENT 4 - FURNISH & INSTALL TREATED TIMBER MUD BLOCKING, 8 @ 16" X 9" X 6'-0	48	LF		
036	BENT 4 - FURNISH & INSTALL TREATED TIMBER BOTTOM SILL, 1 @ 12" X 12" X 10'-0	10	LF		
037	BENT 4 - FURNISH & INSTALL 12" X 12" TREATED TIMBER POST, 1 @ 12'-0 TO REPLACE POST 1	12	LF		
038	BENT 7 - FURNISH & INSTALL TREATED TIMBER MUD BLOCKING, 12 @ 16" X 9" X 6'-0	72	LF		
039	BENT 7 - FURNISH & INSTALL TREATED TIMBER SILL, 1 @ 12" X 12" X 24'-0	24	LF		
040	BENT 8 - FURNISH & INSTALL TREATED TIMBER MUD BLOCKING, 12 @ 16" X 9" X 6'-0	72	LF		
041	BENT 8 - FURNISH & INSTALL 12" X 12" TREATED TIMBER POST, 1 @ 18'-0 TO REPLACE POST 1	18	LF		
042	BENT 10 - FURNISH & INSTALL TREATED TIMBER MUD BLOCKING, 12 @ 16" X 9" X 6'-0	72	LF		
043	BENT 10 - FURNISH & INSTALL 12" X 12" TREATED TIMBER POST, 1 @ 24'-0 TO REPLACE POST 1	24	LF		
044	BENT 10 - FURNISH & INSTALL TREATED TIMBER CAP 12" X 12" X 14'-0	150	Ea		
045	BENT 11 - FURNISH & INSTALL TREATED TIMBER MUD BLOCKING, 12 @ 16" X 9" X 6'-0	72	LF		
046	BENT 11 - FURNISH & INSTALL TREATED TIMBER BOTTOM SILL, 1 @ 12" X 12" X 24'-0	24	LF		
047	BENT 11 - FURNISH & INSTALL 12" X 12" TREATED TIMBER POSTS, 2 @ 18'-0 TO REPLACE POST 1S 1 & 3	36	LF		
048	BENT 13 - FURNISH & INSTALL TREATED TIMBER MUD BLOCKING, 12 @ 16" X 9" X 6'-0	72	LF		
049	BENT 13 - FURNISH & INSTALL 12" X 12" TREATED TIMBER POST, 1 @ 20'-0 TO REPLACE POST 1	20	LF		
050	HEADWALL BEHIND BENT 16 - FURNISH & INSTALL TREATED TIMBER, 2 @ 16" X 10" X 20'-0	40	LF		
051	TIMBER DISPOSAL	1	LS		

TDOT#47RR20S3004 Project#4 Subtotal \$ -

052	PERFORMANCE AND PAYMENT BONDS	1	LS		\$ -
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GRAND TOTAL TDOT#47RR20S3004

GRAND TOTAL TDOT#47RR20S3004 with Alternate Bid Items \$ -

F=Furnish; I=Install; M=Maintain; R=Remove; SF=Square Feet; SY=Square Yard; CY=Cubic Yard; LF=Linear Feet; TF=Track Feet; TN=Ton; LS=Lump Sum; EA=Each

NOTE: Offerer must sign and date this form in space provided and return with offer.

Offerer Company Name

Offerer Signature

Offer Date

Addenda
(Intentionally Left Blank)

Job Showing Notes
(Intentionally Left Blank)