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State of West Virginia Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

#### Request for Quotation

RMA900010

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ADDRESS	CORRESPO	NDENCE TO 7	ATTENTION OF

RON PRICE 304-558-0492

6H-₽ +0

WV STATE RAIL AUTHORITY
(DBA) SOUTH BRANCH VALLEY
RAILROAD
120 WATER PLANT DRIVE
MOOREFIELD, WV

 DATE PRINTED
 TERMS OF SALE
 SHIP VIA
 F.O.B.
 FREIGHT TERMS

 12/02/2008
 FREIGHT TERMS

BID OPENING DATE:	12/16/	2008	BID	OPENING TIME 03	:30PM
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0001	1 Track constr	7700	160-52 OSSTIE & BRIDGE		
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SIGNATURE	[F	SEE'RE	VERSE SIDE FOR TERMS AND C	DATE	TO BE NOTED ABOVE

# GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

- 1. Awards will be made in the best interest of the State of West Virginia.
- 2. The State may accept or reject in part, or in whole, any bid.
- 3. All quotations are governed by the West Virginia Code and the Legislative Rules of the Purchasing Division.
- 4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
- 5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
- 6. Payment may only be made after the delivery and acceptance of goods or services.
- 7. Interest may be paid for late payment in accordance with the West Virginia Code.
- 8. Vendor preference will be granted upon written request in accordance with the West Virginia Code.
- 9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
- 10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
- 11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
- 12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
- 13. BANKRUPTCY: In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.
- 14. HIPAA BUSINESS ASSOCIATE ADDENDUM: The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (http://www.state.wv.us/admin/purchase/vrc/hipaa.htm) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
- 15. WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT: If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

#### **INSTRUCTIONS TO BIDDERS**

- 1. Use the quotation forms provided by the Purchasing Division.
- 2. SPECIFICATIONS: Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as EQUAL to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
- 3. Complete all sections of the quotation form.
- 4. Unit prices shall prevail in case of discrepancy.
- 5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
- **6. BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130

#### Addendum #2

This addendum will completely replace the original RFQ for RMA900010 All changes from the original will be in italics. Removed sections will be shown as strikethroughs. PLEASE READ CAREFULLY AS SOME MATERIAL REQUIREMENTS HAVE CHANGED.

The West Virginia Purchasing Division for the agency, The West Virginia State Rail Authority is soliciting bids for track construction, crosstie and bridge tie replacement and surfacing. All work is located on the West Virginia Central Railroad (WVCR).

#### DESCRIPTION OF WORK

3000 TIES TOTAL FOR REPLACEMENT: MP 5 to MP 11 – 650 ties; Belington Yard MP 11.3 - 75 ties; MP 15.8 to MP 26.5 – 575 ties and MP 29.0 to MP 38.4 – 1200 ties; Dailey Branch MP 0 to MP 1 – 200 ties; Norton Coalton Branch MP 0.2 to MP 1.8 - 300 ties (75% of the 3000 ties are in curves)

#### 1. Tie Replacement

- a. Ties will be handled carefully to avoid damage in accordance with AREMA specifications.
- b. The contractor will replace only those ties marked for replacement by WVCR. Ties needing to be gaged will also be marked in the field.
- c. The contractor will remove and properly dispose of old ties. Ties must be stacked clear of tracks and must not be stacked on property other than WVCR right-of-way.
- d. New and old ties can be stored at Belington, Elkins and Bowden until removed.

#### 2. Spiking of Ties

- a. New ties will be spiked to a gage of 56 ½ inches, plus or minus ¼ inch. Additional ties will be plugged and respiked to correct gage to ensure there is no abrupt change in gage where ties are replaced.
- b. All ties replaced or respiked will have new spikes. Old spikes will not be reused. Spikes shall be started and driven vertically and square with the rail. They shall have full bearing against the side of the rail base. Spikes shall not be overdriven. Ties on tangents will get four spikes per tie. Ties on curves will get six spikes per tie. The correct spiking pattern will be used on all new ties and any adjacent ties that are respiked to correct gage.

#### 3. Rail Anchors

a. All rail anchors will be reapplied in their existing location and properly fitted against ties.

#### 4. Tamping

- a. Tie gang will tamp all newly inserted ties as they are placed in the track and ballast will be replaced at ends of ties. Tamping for tie replacement will be done as described in section 5 of these specifications.
- 5. Final Surfacing, Alinement and Ballast Regulating
  - a. Contractor will use a Jackson 6700, Mark IV or equivalent tamper to give the track within the designated area a "skin lift" and establish best fit for curves including appropriate spirals. Surfacing will taper into bridges and grade crossings.
  - b. Two insertions will be made for each tie.
  - c. WVCR will provide information on superelevation of curves.
  - d. When surfacing a turnout, tamping will continue for a distance of at least 100 feet onto the side track to ensure uniform surface through the turnout.
  - e. A ballast regulator will follow the tamper to regulate ballast and reshape shoulders. Contractor will place any additional ballast where it may be needed after surfacing. All curves with welded rail will have a ballast shoulder of at least 12 inches on the outside of the curve.
  - f. All ballast will be installed in the field by the Durbin & Greenbrier Valley Railroad. Contractor will only be responsible for regulating ballast to proper shoulders and depths.

#### SURFACING AND BALLAST REGULATION:

In addition to the areas where ties are installed, there will be additional surfacing of approximately seven (7) miles. This surfacing will be at various locations along the railroad from MP 6.2 - MP 90.5 - (See item 5 above)

An area on the Coalton Branch where ties are to be replaced is at a private crossing. No other private crossing will be located in the additional surfacing areas. The timbers at this one private crossing will be removed and reinstalled by the DGVR. This will not be the responsibility of the contractor.

#### **TIE REPLACEMENT ON BRIDGE 28.8**

This bridge is 221 feet long and is located in Elkins, WV crossing the Tygart Valley River and Barron Avenue. Bridge is a four-span steel structure. The running rails are 115# CWR. All 194 bridge ties and 4 parapet ties are to be replaced. The bridge ties are (163) 10" x 10" x 12" x 12" x 12" and (31) 10" x 10" x 16' 10" x 12" x 16' ties dapped to fit on the steel spans. The parapet ties are (4) 10" x 10" x 10". All steel strap tie spacers are to be replaced with timber outer guard rail.

- 1. <u>Bridge Tie Installation</u>: Every third tie will be anchored to the top of the girder flanges with new, galvanized ¾" hook bolts, nuts and washers. No more than 8 to 10 ties may be removed at one time due to the CWR. (Note: This is only if CWR is not completely removed from bridge prior to tie installation. If CWR is removed, contractor must reinstall CWR according to the CWR program that is attached. Attachment D) New ties will be shifted to eliminate bunching that has occurred with the existing ties. Tie spacing should remain standard with current spacing. All four (4) parapet ties will be replaced.
- 2. <u>Timber Outer Guard Rail</u>: The timber outer guard rails shall be placed at the same location as the current metal straps. Contractor shall measure location of current straps from track center prior to removing. The timber shall be anchored to each tie with ¾" x 10" washer head drive spikes. The ¾" holes for the drive spikes shall be drilled through the guard rails only and the holes placed in alternate patterns over each tie, three inches (3") inside the edge of the timber. See attached drawing. (Attachment A) At the ends of each span, the outer guard rail shall end on the last tie of the span to allow structure expansion and shall not be connected to the backwall or approach tie. Guard rails shall be notched in the field as necessary to clear heads of the hook bolts.
- 2. <u>Steel Strap Tie Spacers</u> are to be replaced on new bridge ties exactly as they are currently placed on existing ties.
- 3. Inner Guard Rail: The inner guard rail on the bridge shall be re-installed as shown in the attached sketch. (Attachment A) The rail will be spiked to each tie with two spikes per rail, without plates, and will be fully bolted. There are 9 joints per rail, four bolts will be used for each joint. Contractor can reuse joint bars and supply new bolts and washers. NOTE: Some discussion took place at the pre-bid concerning a change in the number of ties needing to be spiked. There is no change to what is listed here.
- 4. Running Rails: Existing tie plates will be re-used with new ¼" thick solid neoprene (no fabric) tie pads placed between the tie plates and bridge ties. Rails will be spiked to 56 ½" gage with new, 6" cut spikes. They will be spiked to proper alinement without any irregularities. Contractor will be responsible to adjust rail as necessary to eliminate stress that develops as a result of the tie replacement. Spiking pattern will be four spikes per tie plate.
- 5. Walkway: The timber on the walkway will be replaced and the metal walkway re-installed. (68) 3" x 9" x 14' timbers will be cut to fit for the walkway. The posts for the handrail will be replaced and the existing handrailing will be reinstalled. (33) 3 ½" x 5 ½" x 58" treated lumber posts will be replaced. The metal grate is attached to the walkway with a nail and metal clasp. The walkway boards are attached to the walkway support timbers with nails. Contractor is to replace in kind. See pictures showing detail of post and handrail attachment.

#### INSTALL one #8 132 lb turnout and 800 feet of track at the JF Allen Siding

Contractor will construct 800 feet of track and one #8 turnout. The #8 132 lb turnout will connect back to the mainline and side track with comp welds. The entire turnout except for the frog will be welded. Rail will be transported to the worksite by the SRA. Rail & OTM for the siding is the responsibility of the contractor, 100RB as described in the materials section. The SRA will provide the turnout including the 132# rail and matching joint bars.

Crossties will not be spaced in excess of 24" centers. Ties will be handled carefully to avoid damage in accordance with AREMA specifications.

Rail will be spiked to a gage of 56 ½ inches, plus or minus ¼ inch. Spikes shall be started and driven vertically and square with rail. They shall have full bearing against the side of the rail base. Spikes shall not be overdriven. Spiking pattern shall be as shown in Attachment B.

Rail anchors will be properly fitted against the ties and will not be moved by driving them along the rail. Anchors shall be applied as shown in Attachment C. (now attached) Turnouts will have all ties box anchored.

There will be six inches of ballast beneath the ties and between the ends of the ties and the slope of the ballast shoulder. Cribs will be filled but no ballast will be left on top of the ties. Ballast will be supplied by JF Allen but contractor is responsible for placing as needed.

All trackage will be lined and surfaced. Two insertions will be made per tie. Ballast will be regulated for proper shoulders.

Equipment and materials can be stored on-site.

#### **CONDUCT OF WORK**

Train Traffic: Freight trains run from MP 0 to 29. During late winter and spring, freight trains typically operate five days a week. Excursion trains run weekends thru Memorial Day, and Thursday, Friday, Saturday and Sunday during June. Additional excursions may be scheduled during weekdays or weekends on an as needed basis. Updated schedules will be provided to the contractor by DGVR. The track must be made safe for train traffic on those days. No train traffic will be going across the bridge at MP 28.8 until May 1, 2009 with the exception of emergency runs which will be coordinated with the contractor and DGVR. Contractor will need to coordinate all work with the Durbin & Greenbrier Valley Railroad, the operator of the WVCR. Contact for track access is Matt Reese, Superintendent at 304-636-9477 ext. 107 or 304-612-7990.

Contractor will be responsible to provide a radio or radios capable of communicating with the DGVR. The radio must be a minimum of 40 watts. The contractor can get a

radio from Hammicks Radios, 304-636-6210 and have it programmed with the same frequency as the DGVR. Each work crew must be equipped with a radio. All work will be subject to inspection by the SRA and WVCR.

The contractor will comply with all safety rules and regulations as required by the Federal Railroad Administration, WVCR and other parties as applicable.

The successful bidder will be required to have ALL employees that will be working on this project attend a ½ day class on track safety and track access. Also a mandatory preconstruction meeting will be held with all employees working on the project, the WVCR operator and their employees and a representative from the SRA. This meeting will assure that everyone understands the entire scope of work as outlined in the awarded purchase order. Also, it will be mandatory that a weekly status report be submitted to the SRA. This report will be signed by the contractor and railroad representative and will list the work completed for the week. A final inspection of all completed work will be conducted by the contractor, the DGVR and an SRA representative to assure all work is completed as stated in the specifications. Final payment will be withheld until this inspection is complete.

Contractor will use Heavy and Highway Construction Rates as established for Barbour, Randolph and Pocahontas Counties. These rates are pursuant to WV Code 21-5A, et. Seq. and are available at <a href="https://www.wvsos.com/adlaw/wagerates">www.wvsos.com/adlaw/wagerates</a>. Contractor will be responsible for submitting certified payrolls to the SRA.

There are sidings at Belington, Elkins, Bowden and Bemis that can be used to tie-up equipment.

Contractor will be responsible for clean up of the work site. All debris and refuse will be removed from WVCR property and disposed of properly. This includes old bridge ties, crossties, and spikes removed during this project. All other track material will remain the property of the WVCR. This track material needs to be clear of the track and stacked along the railroad right of way.

Additional bid items spelled out for clarification: All bidders must attach a "No Debt Affidavit" form that was attached to addendum #1. Failure to do so will result in disqualification of the bid. The bid bond must also be submitted with raised seals from both the surety and the principal. All bidders must have a valid WV Contractor's License at the time of bid submittal.

A copy of the attendees of the pre-bid meeting is attached for your information.

The buyer for this project will be Ron Price 304-558-0492 (not Frank Whittaker)

#### **MATERIALS**

For the turnout and track installation at the JF Allen siding, SRA will provide switch, switch ties, crossties and ballast. & rail and tie plates. Contractor will be responsible for spikes, bolts, anchors, joint bars, comp bars, 100RB rail and tie plates. filter fabrie.

Contractor will be responsible for all materials for the other projects listed above.

Bridge ties will be new (163) 10" x 10" x 12" 10" x 12" x 12' & (31)10" x 10" x 16' 10" x 12" x 16' Grade 1 Southern Yellow Pine, dense structural 65, creosote pressure-treated to 10# or refusal. Timber outer guard rails shall be 4" x 8" Southern Yellow Pine creosote pressure-treated to 12# or refusal.

Parapet ties will be new (4) 10" x 10" x 10' Grade 1 Southern Yellow Pine, dense structural 65, creosote pressure-treated to 10# or refusal.

Walkway lumber will be new (68) 3" x 9" x 14' treated lumber cut to fit walkway. The treated lumber does not necessarily have to be creosote pressure treated.

Walkway posts will be new (33) 3  $\frac{1}{2}$ " x 5  $\frac{1}{2}$ " x 58" treated lumber. Existing handrailing will be reinstalled on new posts.

The contractor will prepare the dapping plans for ties installed on Bridge 28.8. These ties will be dapped to at least ½" and no more than ½" wider than flange width. Timber outer guard rails will be sized to fit each span of the bridge.

Crossties (3000) will be 7" x 9" x 8'6" industrial grade. Specifications in AREMA Chapter 3 will govern. Ties will be mixed hardwoods and oak, 100% end plated and crossote pressure treated to 7# retention or refusal.

Contractor will provide treated tie plugs and cut track spikes 5/8" x 6" per AREMA specifications.

Bolts and washers must be new and conform to AREMA specifications.

Anchors shall be the proper size for the rail to which they are applied. Anchors will be new or reformed and be compatible with industry rail anchor machines.

800 tf (1600 ft of rail) This will be 100RB relay rail AREMA Class 3 grade. Wear shall be no greater than 1/4" on top and gage side. Rail ends shall be square and shall have been saw cut. Torch cut rails will not be accepted. Rails shall be straight horizontally. Rails shall be straight vertically with no upsweep or droop permissible. Rails shall be

clean in appearance and free of obvious defects. Bases shall be solid and free of visual defects. Slight indentations or spike notching with a maximum depth of 1/8" and maximum length of 3/4" is permissible. Slight pitting is also allowable. Webs must be free of visual defects. Slight pitting is permissible. This is a change from the original RFQ so the contractor can easily match the rail and joint bars. Contractor will need to provide a sufficient number of joint bars for the rail provided.

The 100RB rail requires 53 pairs of four

Two pairs of 100-132 comp bars and four pairs of 122-132 comp bars.

Tie plates must meet AREMA specifications suitable for 100lb RB rail. They will be single shoulder with a cant of 1:40. Plate will have no less than six (6) square spike holes. Tie plates shall not be bent or have excessively worn spike holes.

Tie plates must meet AREMA specifications suitable for 132lb RB rail. They will be double shoulder with a cant of 1:40. Plate will have no less than six (6) square spike holes. Tie plates shall not be bent or have excessively worn spike holes.

Contractor is responsible for all weld kits meeting AREMA specifications.

Filter fabric for turnout will be sixteen-ounce needle punch, non woven.

#### **BIDDING REQUIREMENTS**

The contractor MUST have previous experience in the replacement of railroad bridge decks, crosstie replacement, turnout installation, rail placement and track surfacing. References may be required to prove past experience.

A mandatory pre-bid meeting will be held on November 10, 2008 at 10:00 am. Everyone will meet at the Belington Yard in Belington, WV. This meeting includes an inspection trip of the portion of railroad where the work will be completed. Bidders must provide their own hy-rail equipment or make arrangements with other potential vendors to ride with them. Contractors wishing to attend should inform Frank Whittaker at 304-558-2316 by November 7, 2008. Questions prior to the prebid inspection must be submitted in writing and will be addressed at the meeting. Email Frank.m.whittaker@wv.gov

The quantities in the RFQ are for estimating purposes only. The awarded unit price will be used to determine the cost of the actual scope of work authorized.

For bidding purposes, contractor is to give a unit cost for each item listed below. Low bid will be determined by the lowest total amount for all unit costs multiplied by the estimated quantities as listed below:

Tie Replacement (excluding gaging)
Estimated quantity 3,000 ties x unit cost \$ per tie =
\$
Gaging (new and respiked crossties)
Estimated quantity 2,300 ties x unit cost \$ per tie =
\$
Surfacing/Ballast Regulation
Estimated 7 miles x 5,280 feet/mile x unit cost \$ per track foot =
\$
Complete Replacement of Bridge Ties and Outer Guard Rails on Bridge 28.8
One bridge total unit cost \$
Track Construction (includes all labor and joint bars, comp bars, spikes, anchors, rail, tie plates and bolts)
Estimated quantity 800 track feet x unit cost \$ per T.F. =
<b>\$</b>
Turnout Construction (includes all labor and welds, joint bars, spikes, anchors, tie
plates and bolts)
One turnout total x unit cost \$ =
\$
TOTAL OF ALL ITEMS \$

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# SPIKING PATTERN "C"



# SPIKING PATTERN "D"

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PLATE

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PANOENTS AND CURYES LESS TRAY 2 DECHER

WITH SPEED UP TO 45 HPH

WITH SPEEB-UNEATER THAN 45 HPH"

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SPECIAL INSTRUCTIONS FUN THE HEETIND UM PASSINU OF TRAINS. "

BIDE THACK - AN AUXILIANT THACK FOR PUNFUSES UTHER THAN NEETING ON PASSING TRAINS.

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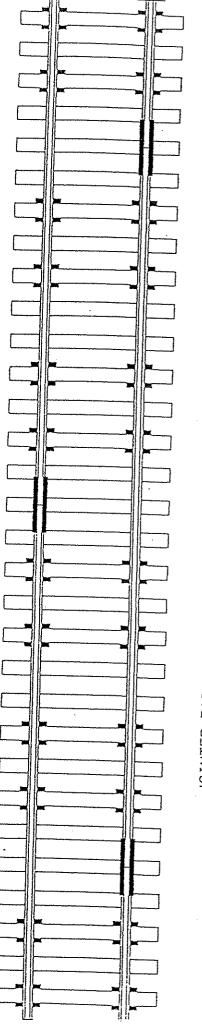
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CURYES OVER 12 DEGREE

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SIDE THACKS . SPEEDS UP TO 25 HPH

CURYES OVER 6 DECREE



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JOINTED RAIL . 16 ANCHORS PER 39 FOOT RAIL, BOX ANCHOR 8 TIES. RAIL ANCHOR PATTERNS

## Durbin & Greenbrier Valley RR D/B/A West Virginia Central RR

RULES AND INSTRUCTIONS
FOR THE
INSTALLATION, MAINTENANCE
AND
INSPECTION
OF
CONTINUOUS WELDED RAIL

Attachment D

#### CONTINUOUS WELDED RAIL INSTRUCTIONS

#### I. INSTALLATION

#### A. RAIL

- 1. If tie renewal and track surfacing are to be undertaken in conjunction with the laying of continuous welded rail, the tie and surfacing work must precede the rail laying.
- A full ballast section should, in typical circumstances, be in place before normal speeds are resumed where continuous welded rail is installed in conjunction with tie and surfacing work. A normal full ballast section includes cribs being full to within 1 inch of the top of the tie and extending outward at that elevation at least 6 inches from the end of the tie to the edge of slope on tangent track and on the insides of curves, and 12 inches from the end of tie to edge of slope on the outside of curves, with normal ballast slopes being approximately 1.5 to 1. It is realized that it will not be practical to have a full ballast section in all cases, and in these cases resistance to bucking due to other factors may be taken into consideration.
- 3. Continuous welded rail must be installed at a temperature to minimize track buckling in the summer due to high compressive forces in the rail and rail pullaparts in the winter when the rail is in tension. The rail, at the time rail anchors are applied, must be in neither compression nor tension and is referred to as being in a stress-free state and at a temperature referred to as the rail neutral temperature. (See Section I.A.4)
- 4. Continuous welded rail should be installed at a temperature not less than 90 degrees nor more than 100 degrees Fahrenheit. Rail temperature will be measured with at least two rail thermometers placed on the web of the rail on the shaded side. Rail thermometers must be checked on a regular basis by placing two thermometers adjacent to each other. If the readings vary by more than 5 degrees, a third thermometer must be used to determine which of the two is accurate. Inaccurate rail thermometers must be replaced.
- 5. When rail heaters, or equivalent, are not available, and it becomes necessary to install and anchor rail at a temperature less than 90 degrees, a report must be made to the General Manager indicating the location of the installed rail and the installation temperature. This location must be identified for rail temperature adjustment before a target temperature arrives.
- 6. CWR installation should be avoided, if possible, during periods of very low ambient temperature. However, if rail <u>must</u> be installed without rail heaters, or equivalent, a report of the location and the installation temperature must be made to the Superintendent.

#### **B. RAIL FASTENERS**

- Two rail holding spikes will be driven in each tie plate on tangent and curves less than 2 degrees. Three rail holding spikes and one hold-down spike on the field side shall be driven in each tie plate on curves of 2 degrees and less than 6 degrees. For curves of 6 degrees or more, three rail holding spikes and two hold-down spikes shall be driven in each tie plate.
- On all welded rail, 200 feet must be box anchored on each side of bolted joints, rail to rail crossings, highway crossings at grade, and open deck bridges. In addition, 200 feet will be box anchored ahead of the point of switch and behind the heel of the frog on the main track and on the turnout side if the siding has continuous welded rail. At all other locations, every other tie will be box anchored. Box anchored means the application of four rail anchors in such a manner that an anchor is bearing against each side of the tie on each rail.
- 3. When anchors are applied, care must be taken to ensure that anchors have full bearing against the tie and that the anchors are not over driven. When an anchor is applied to the rail, there must be an anchor applied to the opposite rail with bearing on the same side of the tie.
- 4. At locations where continuous welded rail joins bolted jointed rail, the welded rail must be box anchored on every tie for 200 feet from the end of the bolted rail. The number of anchors applied to the bolted rail will be uniformly decreased over a distance of eight rail lengths from the box anchored pattern at the joining point to the existing anchor pattern of the bolted rail.
- 5. Turnouts in areas where continuous welded has been laid will be box anchored on every tie on both the main line and turnout side where it is possible to install the anchors. This pattern is to be applied to both welded and bolted turnouts.
- 6. Continuous welded rail on ballast deck bridges will be anchored with the same pattern as the rail adjacent to the bridge. On open-deck timber bridges, anchors will be applied to all ties fastened to the stringers. On open-deck steel bridges, anchors shall be applied as directed by General Manager.
- 7. At the completion of rail installation, with all rail fasteners in place, the date and rail installation temperature will be marked with paint on both sides of the rail web at the end of the rail as delivered to the railroad.

#### II. ADJUSTING NEUTRAL TEMPERATURE

#### A. TRACK CONDITIONS REQUIRING ADJUSTMENT

- 1. Where CWR has been installed at a temperature lower than the minimum allowable temperature range, the General Manager should have been notified as required in Section I.A.5 and I.A.6 and the rail scheduled for temperature adjustment. It is important to complete any temperature adjustments before the onset of a target temperature. Any rail not installed and anchored at a temperature of at least 90 degrees should be scheduled for adjustment.
- 2. The neutral temperature of the rail can only change if the rail moves or if a rail repair improperly performed. Rail installed in track can move when subjected to temperature changes or train movements. As these forces are applied to track, rail movement occurs through anchors wearing into the ties, ties moving in the ballast, or rail moving through the anchors or clips.
- 3. Rail movement can also occur in areas where trains routinely apply brakes. These areas include signal locations, descending grades, permanent speed restrictions, approaching yards, or similar locations on the railroad. At some locations, such as road crossings and turnouts, rail is more resistant to longitudinal creep than in open track. Rail with high longitudinal forces is often found at these locations.
- 4. Curved track has a tendency to move laterally when subjected to temperature changes. In cold weather, rail will contract and pull toward the inside of a curve. This is more pronounced where there is insufficient ballast on the low side of the curve. When this occurs, the curve will have a lower neutral temperature and therefore will develop high compressive forces when the rail temperature increases.
- Many maintenance activities can affect the neutral temperature of the rail. When rail defects are repaired, care must be exercised to be sure that the length of rail installed is the same as the rail removed. Also, any work that significantly disturbs the ballast, such as surfacing, tie renewal, and undercutting, can allow the track to shift in response to traffic and temperature changes until the ballast section is again stabilized.

#### **B. PROCEDURES FOR ADJUSTING NEUTRAL TEMPERATURE**

1. Rail should not be cut more often than absolutely necessary. But de-stressing long distances per cut reduces the chances that reasonably uniform neutral temperature will be achieved. Rail cannot be easily adjusted on track that is overfilled with ballast, track that is uneven in surface or alignment, or on curved track, and attempting to de-stress rail under these conditions should be avoided.

- The length of rail to be adjusted should be no less than 390 feet nor more than 1170 feet depending on the condition to be remedied. Where a repair rail was installed in cool weather, the amount of rail to be de-stressed is likely to be relatively short, and a distance of 390 feet should be used. Where longer lengths of CWR are to be de-stressed, working in 1170 foot segments would be appropriate.
- 3. The rail should be cut in the middle of the length of rail to be de-stressed. Prior to cutting the rail, make two marks on the base of the rail with paint marker approximately 3 feet each side of the location where the cut will be made. Measure and record the distance between the two marks before the rail is cut so the total length adjustment can be measured after the de-stress operation is completed. If the rail temperature is less than the existing neutral temperature, the rail will be in tension and a rail saw may be used to cut the rail. If the rail temperature is higher than the existing neutral temperature, the rail will be in compression and will have to be torch cut. If a torch is used in Class III or higher territory, the rail ends must be cut again with a rail saw unless a weld is made within one hour.
- 4. After the rail is cut, remove the anchors from the rail over the entire length of rail to be de-stressed. If the rail was in compression, the rail ends will have to be offset so the rail is free to expand. The frictional resistance on the base of the rail should be relieved by vibrating the rail or tapping the tie plates. Avoid striking the rail during the process.
- 5. After the stress in the rail has been relieved, measure the rail temperature with a rail thermometer. Table 1 (below) gives the length of rail adjustment required for various lengths of rail being adjusted and temperature differentials.

TABLE 1

Temp Difference Degree F	390 ft. 10 Rail Lengths	585 ft. 15 Rail Lengths	780 ft. 20 Rail Lengths	975 ft. 25 Rail Lengths	1170 ft. 30 Rail Lengths
5 degrees	1/4 Inch	1/4 Inch	¼ Inch	1/4 Inch	½ Inch
10 degrees	1/4 Inch	½ Inch	½ Inch	¾ Inch	1 Inch
15 degrees	½ Inch	¾ Inch	1 Inch	1- <b>1</b> /4 Inch	1-1/4 Inch
20 degrees	½ Inch	1 Inch	1-1/4 Inch	1-1/2 Inch	1-3/4 Inches
25 degrees	¾ Inch	1-1/4 Inch	1-1/2 Inch	1-3/4 Inches	2-1/4 Inches
30 degrees	1 Inch	1-1/4 Inch	1-3/4 Inch	2-1/4 Inches	2-3/4 Inches
35 degrees	1 Inch	1-1/2 Inch	2-1/4 Inch	2-3/4 Inches	3-1/4 Inches
40 degrees	1-1/4 Inch	1-3/4 Inch	2-1/2 Inches	3 Inches	3-1/2 Inches
45 degrees	1-1/2 Inch	2 inches	2-3/4 Inches	3-1/4 Inches	4 Inches
50 degrees	1-1/2 Inch	2-1/4 Inches	3 Inches	3-3/4 Inches	4-1/2 Inches
55 degrees	1-3/4 Inch	2-1/2 Inches	3-1/4 Inches	4-1/4 Inches	5 Inches
60 degrees	1-3/4 Inch	2-3/4 Inches	3-1/2 Inches	4-1/2 Inches	5-1/2 Inches

For example: If the rail temperature was 70 degrees the temperature differential, for a desired neutral temperature of 95 degrees, would be 25 degrees. If the unrestrained rail length was 1170 feet, the amount of rail length adjustment would be found in the table at the intersection of the 25 degrees differential row and the column heading of 1170 ft. In this example, the rail end gap should be 2-1/4 Inches. If the rail was saw cut originally, it must be cut again so that the overall rail end gap is 2-1/4 Inches. If the rail was originally torch cut in class II or higher track, the rail must have a minimum 3/8 inch saw cut off the end of each rail so that the overall rail-end gap is 2-1/4 Inches. If the rail is to be field welded, an additional 1 inch of rail must be removed to accommodate the 1 inch thermite weld.

6. A rail expander can now be used to close the rail end gap for application of joint bars for a bolted joint, or for preparation of the field weld for a welded joint. As the rail expander applies tension to the rail, it is desirable to reduce friction at the rail and tieplate interface by using a rail vibrator or tapping the tie plates. When de-stressing long sections of rail, it is advisable to make match marks on the base of the rail and tie plate at equal increments along the section of rail so that rail movement can be monitored to verify uniform expansion.

- 7. Reapply all rail anchors and other fastenings. Measure the distance between the paint marks made on the base of the rail and record the amount or rail removed on the report of rail neutral temperature adjustment. This report will also include the location of the rail and the date the rail was adjusted.
- 8. Adjust the neutral temperature in the opposite rail using the same procedures. Do not assume that the opposite rail will require the same amount of adjustment.
- At the completion of rail temperature adjustment, the rail will be marked with paint on both sides of the rail web with the date work was accomplished, the adjusted neutral temperature, and the length of rail adjusted.

#### III. MAINTENANCE

#### A. TIE RENEWAL

- 1. If more than 20% of the crossties or switch ties are replaced in any 39 feet, or more than three consecutive crossties are replaced, a 10 mph speed restriction is required if the ambient temperature reaches or exceeds 80°F on the day the work is performed. The speed restriction must remain in effect for the passage of at least 4 train movements totaling at least 32 cars. The speed may then be raised to a maximum of 25 mph under the authority of a person designated under §213.7(a). The 25 mph speed restriction must remain in effect for the passage of at least an additional 4 train movements totaling at least 32 cars. The speed may then be raised to a maximum of 40 mph under the authority of a person designated under §213.7(a).
- 2. When the ambient temperature remains below 80°F on the day the work is performed, a 10 mph speed restriction is required for the passage of the first train. The speed may then be raised to 25 mph under the authority of a person designated under §213.7(a). The 25 mph speed restriction must remain in effect for the passage of at least 4 train movements totaling at least 32 cars. The speed may then be raised to a maximum of 40 mph under the authority of a person designated under §213.7(a).
- 3. If immediately following tie renewal work the ambient temperature is expected to exceed 80°F for an extended period, the duration of temporary speed restrictions should be extended as determined by a person designated under §213.7(a).
- 4. New ties installed shall be spiked and anchors applied in the same pattern as the ties being replaced.
- 5. All newly installed ties must be tamped. When more than 20% of the ties in any 39 feet are being replaced, a power tamper should be used.
- 6. Ballast shall be restored on the ends and in the cribs of all newly installed ties, and slow orders removed.
- 7. The Division's Track Foreman, or other designated person under §213.7(a), is responsible for raising or removing the speed restriction after the passage of the required train traffic and after personal inspection of the track. Speed restrictions should not be removed during the heat of the day (i.e., not during the period from sunrise to sunset).

#### B. OUT-OF-FACE SURFACING

1. Track surfacing disturbs the ballast around the tie and reduces the track lateral resistance. A temporary speed restriction must be placed on all track that is surfaced. The risk is higher during periods of high temperature.

- 2. When the ambient temperature reaches or exceeds 80°F on the day the work is performed, a 10 mph speed restriction must be placed on the track that has been surfaced and must remain in effect for the passage of at least 4 train movements totaling at least 32 cars. The speed may then be raised to 25 mph under the authority of a person designated under §213.7(a). The 25 mph restriction must remain in effect for the passage of at least an additional 4 train movements totaling at least 32 cars. The speed may then be raised to a maximum of 40 mph under the authority of a person designated under §213.7(a).
- 3. When the ambient temperature remains below 80°F on the day the work is performed, a 10 mph restriction is required for the passage of the first train. The speed may then be raised to 25 mph under the authority of a person designated under §213.7(a). The 25 mph speed restriction must remain in effect for the passage of at least 4 train movements totaling at least 32 cars. The speed may then be raised to a maximum of 40 mph under the authority of a person designated under 213.7(a).
- 4. If immediately following out-of-face surfacing work the ambient temperature is expected to exceed 80°F for an extended period, the duration of temporary speed restrictions should be extended as determined by a person designated under §213.7(a).
- 5. The runoff from the surfaced track to the existing track must be left in good cross level and alignment with an adequate ballast section. No condition should be left that would contribute to a track buckle.
- 6. If insufficient ballast exists on the surfaced track, the Division's Track Foreman must be immediately notified and the speed restriction continued in effect until the ballast section has been restored.
- 7. The Division's Track Foreman, or other designated person under §213.7(a), is responsible for raising or removing the speed restriction after the passage of the required train traffic and after personal inspection of the track. Speed restrictions should not be removed during the heat of the day (i.e., not during the period from sunrise to sunset).
- 8. When track is to be surfaced at a rail temperature of 50 degrees or lower, the Division's Track Foreman shall set reference stakes on each curve over 3 degrees before track surfacing begins. Stakes will be placed approximately 250 feet apart and must be placed where they would not present a tripping hazard to railroad personnel.
- 9. The position of the curve will be monitored after surfacing is completed. If the inward movement of the curve is greater than 1 inch, a disturbed track report will be prepared showing the amount of inward movement and the curve must be realigned to its original position before the arrival of warm weather.

#### C. REPLACING DEFECTIVE RAIL

- 1. When replacing defective rail, care must be used to ensure that the length of rail put in the track is exactly equal to the length of rail removed. Prior to cutting continuous welded rail, the rail anchors must be adjusted so that they are bearing tight against the ties. If the rail temperature is below 50 degrees, additional anchors may have to be added to prevent rail movement when the rail is cut.
- 2. If a repair rail is to be installed by temporary use of bolted joints, cut out the defective rail the exact length of the repair rail. A rail saw must be used to cut the rail install the replacement rail and apply joint bars without drilling the holes nearest the rail ends. If a gap exists at the ends of the replacement rail, a rail expander or rail heater must be used to bring the rail ends together before installation of joint bars.
- 3. If the repair rail is to be immediately thermite welded, cut the replacement rail such that the rail ends will be at the center of a tie crib when installed. Cut out the defective rail two inches longer than the length of the replacement rail. Install the replacement rail such that a one inch gap exists at each end of the rail and proceed to weld.
- 4. During periods of extremely cold weather, it may be impossible to join the ends of the replacement rail unless some rail is added. If rail must be unavoidably added, the exact length of the additional rail must be noted on the disturbed rail report so that rail temperature adjustments can be made before the onset of warm weather.
- 5. Rails are in tension when the rail temperature is less than the installation temperature. If anchoring is inadequate to properly hold the rail, the rails may pull apart. To repair a pull-apart, adjust the rail to the correct neutral temperature following the procedures in Section II.B., apply joint bars and reapply the rail anchors. It may be necessary to install additional rail anchors. If the weather is extremely cold, and additional rail must be installed, the exact length of the additional rail must be noted on the disturbed rail report so that rail temperature adjustments can be made before the arrival of warm weather.

#### IV. INSPECTION

- 1. A special inspection of track constructed with continuous welded should be performed on the first warm day of the year when temperatures are expected to exceed 80 degrees, or an appropriately higher temperature where an 80 degree temperature can be reached throughout the year. A special inspection of the same track will be performed every day the temperature is expected to exceed a pre-determined temperature set in the railroad's rules. In cool northern coastal climates such temperature might be as low as 85 degrees, but in hot desert climates might be as high as 110 degrees. In cases where trains do not operate on a given day, the inspection should occur before the next train after such temperatures have been reached. Inspections made because of high temperatures on the day that temperature is exceeded should be made between 1pm and 6pm each day.
- 2. When inspecting CWR track, special attention must be give to areas where rail is likely to have moved. These areas can occur at the bottom of sags, where train braking is likely to occur, or adjacent to locations where the track is extremely well anchored, such as turnouts and grade crossings. Close attention must also be given to bridge approaches and high degree curved track, especially where track surfacing was completed during colder weather.
- During these inspections, particular attention should be paid to the alignment of the rails any waviness or kinky line areas should be inspected on foot to determine if the rail is rolling up out of the plates. Inspectors should be aware of any disturbance of the ballast around the tie cribs or tie ends as an indicator of rail movement. The rail anchors should also be observed to assure that a sufficient number of rail anchors are in place and properly applied tight against the tie to prevent rail movement.
- 4. The inspector should be aware of any track maintenance work that has been recently performed, such as tie replacement, track surfacing, or rail replacement, and make close inspections of those areas to make sure that repairs were properly performed and that the rail is well anchored.

#### V. TRAINING

1. Each employee responsible for the installation, maintenance, inspection, or adjustment of CWR track, and each supervisor directing the action of those employees (including contractors of this railroad) shall receive adequate training in the behavior of CWR track before being assigned to any task requiring knowledge of CWR installation, maintenance, and inspection. This training shall provide instruction on the fundamentals of continuous welded rail, the importance of installing rail within the prescribed laying temperatures, the procedures to be followed in adjusting the neutral temperature of CWR, the essential precautions in maintaining CWR, and how CWR track should be inspected. During the calendar year following the initial training and each calendar year thereafter, each employee responsible for the installation, maintenance, and inspection (including contractors for this railroad) shall be provided with refresher training to

reinforce his/her understanding of the proper handling of CWR track and the proper procedures to be followed in the inspection of CWR track.

#### VI. RECORD KEEPING

- Continuous welded rail shall be marked with white paint at the time the rail is installed or adjusted to indicate the date the work was completed and the installation or adjusted rail temperature.
- A report of installed continuous welded rail will be maintained at the Superintendent's Office indicating the exact location of the rail, the date the work was completed, and the rail temperature at the time of installation.
- 3. The disturbed track reports required in Sections III. 8., III.C.4., and III.C.5, will be maintained in the Superintendent's Office. The reports will indicate the exact location of the rail, the date the report was filed, the amount of inward movement in curves, or the amount of additional rail installed. The reports must indicate when corrective action was taken and what track work was accomplished.
- 4. A report of rail temperature adjustment will be maintained at the Superintendent's Office to indicate the date that rail temperature adjustment was completed, the exact location of rail, the adjusted rail temperature, and the length of rail adjusted.
- 5. It is the Track Foreman's responsibility to see that all disturbed track identified in the reports has had the rail neutral temperature adjusted as specified in Section II.B. before the onset of warm weather and all reports are amended to indicate the date and nature of work completed.
- 6. It is the Track Foreman's responsibility to ensure that all necessary reports are maintained and updated as required.

#### A) Joint Identification and Inventory Procedure

CWR joints will be identified in the following manner, which will allow sufficient precision for personnel to return to the joint and identify it without ambiguity.

From north to south, rail joints will be numbered consecutively and tagged with identification markers. A suffix added to each joint number will designate the appropriate rail.

Example: Joint #24-E will refer to the 24th joint from MP 0.0, located on the East Rail.

Each identified joint will be listed in a compilation of joint locations, which will include the following information:

- Exact Milepost
- Additional location reference and I or the number of ties from a specific landmark or point.
- If joint is tagged and marked.
- Rail Location
- Number of bolts
- Number of bolt holes
- Type of rail connector
- Any additional pertaint information

#### B) Inspection for potential joint failure

#### i) Procedure

Inspectors will examine each designated joint on foot and comply with Part B (ii). The scheduling of these inspections will comply with Parts B (iii) and B (iv).

#### ii) Identification of Non-compliant joints

Track inspectors must thoroughly inspect each designated CWR joint and properly record these listed items if found:

- Joint bars with visible or otherwise detectable cracks
- Loose, bent or missing joint bolt
- Rail End batter or mismatch
- Evidence or excessive longitudinal rail movement, which includes, but not limited to Wide rail gap, defective joint bolts, distributed ballast, surface deviations, gap between tie plates and rail or displaced rail anchors.

#### iii) Scheduling

All CWR joints must be inspected by a qualified person by April 1, 2007 and within 370 days of the previous inspection thereafter, unless the following special conditions are encountered which require a more thorough special inspection.

Indications of joint damage.

- Severe cold weather, with temperatures reaching 10 degrees or more below Zero Fahrenheit.
- Other unusual circumstances that may cause damage to joint.

#### iv) Periodic Inspection

Track Inspectors must, during the normal course of a track inspection, inspect a minimum of five (5) joint bars per week. The five (5) joint bars selected for inspection must not have been previously examined if there are CWR joints which have not received their 370 day inspection.

#### v) Record Keeping

Inspectors must record information on the inspection of rail joints on the designated form. This record must now include for CWR Joints:

- Location of each joint identified with sufficient precision that personnel could subsequently locate and identify the joint without ambiguity.
- Individual information as outlined in Part A
- Results of each joint inspection, which clearly conveys the noted deficiencies.
- Any remedial action recommended or required.

Record keeping will meet the requirements of CFR 49, 213.241 (Inspection Records) and 213.343 (CWR).

#### vi) Remedial action for non-compliant joints

Remedial action will be taken in compliance with CFR 49.213.121.

### Pre-Bid Conference

# SIGN IN SHEET

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Request for Proposal No.: <u>RMA</u>	900010 Date: 11-18-	-08
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3. Kichard Hall American Railroad	2870 Normandy Drive Atlanta OH. 30305 Ameneaurail @bellsouth. 10819 Sterling RD. Williamsport, MD. 21795	T: <u>404-915-</u> 312 F: <u>770-393-</u> 0111
4. Vernow Fear. Track Builders.	Williamsport, MD. 21795 Fearnits@ adicom	T: 240-620:023/ F: 301-223-7327
5. Dave Lungry Railroad Constructors	705 Manty Ave. Pauls boro, NJ. 08066 dluvara @ railnj-com	T:856-423-9386 F856-423 9389
6. <u>PailWorks Track Systeme</u> , I	ywu (a rail works, com	T: <u>856-582-4</u> 292 PF: <u>856-582-6073</u>
7. My Frank. Antere RR. Contractors ormo.	R MATTHEWS @ author MD. com 21740	T: <u>301-797-3730</u> F: <u>301-797-3740</u>
8. GRey Kimble Balfour Berth Rril, Is	100. GAllaway Daive, Eight, Fun, PA 15330 g Kimble e bbai.com	T: <u>724 - 239 - 248</u> 0 F: <u>724 - 239 - 248</u> 8
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10. Avil Barr	P.O. R. & 9 SK 519  Fight, Four, PA 15330.  Abarra allasmiland.com	T: 724 229-4500 F: 724 228 3/83
Please print or write legibly. The fax r	number is essential to contact the attendees in	a timely manner.

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### Pre-Bid Conference

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Request for Proposal No.: RM	1 <b>600</b> 9000/0 Date: _//-/8	'- <i>0</i> 8
Firm & Representative Name	Mailing Address	<u>Telephone &amp;</u> FAX Numbers
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