

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions and General Requirements, apply to this work as if specified in this section.

1.02 DESCRIPTION OF WORK

- A. This Section specifies the material requirements and performance criteria for complete special trackwork including turnouts to be furnished in accordance with the Contract Drawings.
- B. Except as modified herein, special trackwork shall be designed, manufactured, tested, assembled, inspected, handled and shipped in accordance with the current edition of the American Railway Engineering and Maintenance-of-Way Association (AREMA) Portfolio of Trackwork Plans, and the AREMA Manual of Railway Engineering.

1.03 REFERENCE STANDARDS

- A. Comply with all applicable local, State and Federal codes provisions of most recent edition, including all addenda, of following codes, specifications, standards, and recommended practices, except as otherwise indicated:
 - 1. AREMA MANUAL – American Railway Engineering and Maintenance-of-Way Association, Manual for Railway Engineering
 - 2. AREMA PORTFOLIO – American Railway Engineering and Maintenance-of-Way Association, Portfolio of Trackwork Plans
 - 3. FRA-DOT – Federal Railroad Administration, Department of Transportation

1.04 QUALITY ASSURANCE

- A. All special trackwork specified shall be standardized throughout the project trackage. Mixing and matching of different materials from different suppliers shall not be permitted. All furnished special trackwork assemblies shall be furnish from a single supplier.
- B. Testing and inspection shall conform to the AREMA Manual, AREMA Portfolio and these specifications.
- C. The Contractor shall notify the Engineer five (5) business days in advance of all material delivery.
 - 1. Upon delivery, any material identified as unsatisfactory or deficient, at the discretion of the Engineer, will be loaded back on to the delivery truck and sent back to the Contractor's plant at the Contractor's expense.
 - 2. If identified deficiencies require replacement, modification, or repair of special trackwork components, the Engineer and Engineer's representative may perform site inspections at the Contractor's plant prior to any additional trackwork material shipments. Site inspections shall be at the Contractor's expense, and the Contractor shall make available all tools, measuring devices, materials, and personnel typical of material inspection and quality assurance review.

1.05 SUBMITTALS

- A. All special trackwork shall be provided by the Contractor in exact accordance with the Contract Documents. All material provided in this manner will not require a shop drawing submittal or review.
- B. The Contractor shall submit, under the provisions of Section 01 33 00, "SUBMITTALS PROCEDURES", the following information:
 - 1. Within 14 days of an executed purchase order, the Contractor shall submit shop drawings and certificates for any and all deviations of the special trackwork materials from the Contract Drawings. All special trackwork submittals shall be approved by the Engineer prior to beginning manufacture or fabrication of submitted material or component.
 - 2. Bill of Materials: Upon delivery, submit a complete bill of materials for all supplied special trackwork materials.

1.06 CORRELATION OF THE CONTRACT DOCUMENTS

- A. In the event of a conflict or discrepancy between or among the Contract Documents with respect to the Special Trackwork, the conflict or discrepancy will be resolved by means of the Contract Drawings taking the highest priority over the specifications herein. This requirement is a variance to the precedence described in Section 00 72 00 General Conditions and applies only to the special trackwork.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The following specifications shall be followed in conjunction with the Contract Drawings for a No 9 Turnout. The Contract Drawings shall be consulted first and take priority over the written specifications for all of the following special trackwork components, see Article 1.06.

2.02 TURNOUTS

- A. Turnouts shall be No. 9 turnouts with rail bound manganese frogs fabricated in accordance with the BNSF/Union Pacific Common Standards except as modified in the Contract Drawings and in the specifications herein. See Article 2.01 for discussion on order of priority.
- B. Rail, switch points, and frog castings shall be new, fabricated in the United States or Canada. Rail shall be 115RE as shown on the Drawings and conform to Section 34 05 17 "Railroad Work". There is not a Buy America contract requirement.
- C. Turnouts shall have 16'-6" switch points with graduated risers. Turnouts shall be furnished with appurtenant hardware for hand throw switches as indicated in the Contract Drawings and in these specifications and as directed by the Engineer. Switch points shall be Samson undercut type and be manufactured per AREMA Specifications for Special Trackwork and with AREMA Plan No. 221-12 Detail 5100 and modified as required to meet the geometry and accommodate appurtenances shown on Contract Drawings, including drilling for horizontal switch rods with transit style clips. Samson points shall be head hardened and double reinforced with transit

style clips. Turnouts shall include curved, straight, closure rails utilizing 115 RE rail with screw spikes and elastic fasteners. Switches shall have manganese tips per AREMA Plan No. 220-08.

- D. Guardrails shall be new, 13'-0" long, conform to AREMA Plan No. 504-03, shall be set according to AREMA Plan No. 502 and fastened with screw spike plates and elastic fasteners.
- E. The special trackwork components shall be designed to be hand thrown capable of providing 300 pounds of force at mid-stroke and 500 pounds of force at the end of the throw.
- F. Frogs shall be one piece, rail-bound manganese, and heavy walled. Contractor shall use resilient fastening system for all frog base plates and gage plates.
- G. Frogs shall conform to AREMA Portfolio of Trackwork Plans, Plan No. 623-03, 16' rail bound manganese steel frog for 115 RE rail with screw spike plates and elastic fasteners. Frogs shall be drilled for three (3) bolts to match the specified rail.
- H. The arm ends of the frogs shall be beveled as per AREMA Portfolio Plan No. 1005-03 "Beveling of Rail Ends for Special Trackwork". Rail bending shall be done with great care to avoid stress build up and injury to the rails. Rail shall be bent cold whenever possible. If heating the rail should be necessary, the surface temperature of the rail shall not exceed 800° F and the surface of the remainder of the rail section shall not exceed 1100° F. Heating shall be done in a manner so as to have a minimal adverse effect on the metal.
- I. All switch ties shall be provided by the Contractor and shall conform to Section 34 11 32 "Timber Ties".
- J. Switch point guards shall be furnished for all switches. Switch point guards shall be boltless adjustable switch point guard Model U69 as manufactured by A&K Railroad Materials, Model FM as manufactured by Western-Cullen-Hayes, Model 33C1 as manufactured by Voestalpine Nortrak or approved equal. Switch point guards shall be furnished with appropriate switch plates and mounting hardware. Switch point guards may be sourced from Europe.
- K. Switch stands shall be Racor Model 22-E trailable, adjustable switch stands with low banner, "Backsaver" handle, adjustable connecting rod and bolts with lock washers and cotter pins. The bolt hole in the switch stands, connecting rods and switch rods (42-inches) shall all be the same matching diameter with matching size bolts. Mismatch of bolts and bolt holes will be cause for rejection.
- L. Turnouts shall be of bolted design. All switch bolts shall be designed for use with cotter pins and shall be installed with lock washers for cotter pins.
- M. Switch rods and clips shall be insulated. Switch rods shall be horizontal and conform to AREMA Plan No. 222-03. Switch rods shall conform to AREMA Specification Section M6. The Contractor shall furnish switch rods with all associated slide and runoff plates.
- N. Switch rods shall conform to the AAR Signal Manual, Part 14.5.3, Signal Specifications, "Recommended Developmental Criteria for Insulating Material".
 - 1. Fiber angles, plates and end posts shall be fabricated of fiberglass mat reinforced polyester, 3/16-inch thick, GPO- I sheet stock, NEMA Class B.

2. Fiber bushings shall be fabricated of NEMA Grade 10 epoxy glass fabric.
3. All cut edges of fiberglass shall be sealed with Sherwin Williams Polane, 2-part coatings or an accepted equal.
4. Prior to assembly, all contact metal surfaces shall be painted with General Electric Insulating Enamel, Red Glyptol No. 1202 or equal.

O. Gage Plates

1. Plates shall conform to the AREMA "Specifications for Special Trackwork", Section M7, rolled "Mild Steel".
2. Insulation shall conform to the AAR Signal Manual, Part 116, Signal Specifications, "Assembly and Test of Insulated Track Fittings".
3. Insulated gage plates shall be provided for all turnouts.

2.03 RAIL

- A. Rail shall be new 115 RE as shown on the Drawings, head hardened rail for turnouts and conform to Section 34 05 17 "Railroad Work". Bid Alternate relay rail shall not be used in the turnouts.

2.04 JOINT BARS:

- A. Joint bars shall conform to the AREMA Manual, Chapter 4, Part 3 "Joining of Rail", Section 3.1 and 3.2. Joint Bars shall be 6-hole, 36 inches long, conforming to the AREMA Manual for Railway Engineering, Section 3.2 "Joint Bars and Assemblies."
- B. The bars shall be smoothly rolled, or forged, true to template and shall accurately fit the rails for which they are intended and shall provide a true alignment of the gage and running surfaces of the two rails being connected. A variation of $\pm 1/32$ inch from the specified size of holes, or $\pm 1/16$ inch from the specified location of holes, and of $\pm 1/8$ inch from the specified length of joint bar will be permitted.
- C. Joint Bars shall be provided with the full number of bolts, nuts and lockwashers.
- D. The Contractor shall provide joint bars for all joints internal to the turnout.

2.05 TRACK BOLTS, NUTS, AND SPRING WASHERS

- A. Track bolts and square nuts shall be new, conforming to the current AREMA Manual, Chapter 4, Part 3, "Specifications for Heated Treated Carbon Steel Track Bolts and Carbon Steel Nuts". Spring washers shall be new conforming to the current AREMA manual Chapter 4, Part 2, "Specification for Spring Washers". For each track bolt, provide a square nut and spring washer of proper size for each bolt.
- B. The Contractor shall provide all track bolts, nuts and washers necessary to build a complete turnout with all appurtenances identified in the Contract Documents.

2.06 SWITCH TIES

- A. Switch ties shall conform to Section 34 11 32, "Timber Ties".

2.07 OTHER TRACK MATERIAL

- A. Other track material, including, but not limited to, tie plates, elastic clips and screw spikes, shall conform to Sections 34 05 17 "Railroad Work" and 34 11 32, "Timber Ties".

PART 3 – EXECUTION

NOT USED

END OF SECTION