BLACK RIVER RAILROAD SYSTEM

2020 TRACK STANDARDS & SPECIFICATIONS

FOR NEW CONSTRUCTION & UPGRADES

WOOD TIES

Unless otherwise specified, wood ties shall be new 7"x 9" x 8' 6" creosoted Grade 5 hardwood. All new ties shall be spiked with a *maximum* of four (4) new spikes and box anchored with four (4) anchors per tie.

Where rail is replaced or track is re-gauged, ties that are not replaced shall be plugged and re-spiked with new spikes.

Overall size of ties shall not be less ¼" of specified dimensions, and shall not have wane exceeding 1" at the rail bearing (tie plate) area.

Ties shall be oak or mixed hardwoods free of any defects that may impair their strength or durability; such as decay, splits, shakes, excessive slope of grains, or numerous holes or knots, bark, wanes, etc.

Ties shall be sterilized during treatment by holding them in 190°- 210° F temperature creosote for at least six hours. This time shall not include creosote filling or emptying, nor temperature adjustments or final vacuum time. Final retentions shall be 8#/CF in oak and 10#/CF for mixed hardwoods.

Except as noted above, all treatment shall be governed by American Wood-Preservers' Association Standards C1, C6, M1, M3, and M4. A 60/40 creosote-coal tar solution conforming to AWPA Standard P-2 shall be used. The solution shall be tested according to AWPA Standard A-1

STEEL TIES

Where steel ties are specified, they shall conform to the specifications of NARSTCO M10, or better, and shall be pre-gauged for the specified rail section. Steel ties shall be fully tamped so that ballast fills inspection holes. Steel ties having Pandrol fasteners do not require anchoring. Steel ties shall not be installed in the approaches to railroad crossings where automatic warning devices are installed. Steel ties shall be spaced on 24" centers unless otherwise specified, or spaced evenly between existing ties when installed in small numbers. On curves of more than 1 degree, steel ties shall not be installed where there is more than one in-effective tie holding gauge on either side.

WOOD TIMBERS

Switch timbers shall be new 7"x 9" creosoted grade hardwood and shall be of length to extend at least 18" beyond the base of the rail on the curved side of the turnout. Switch timbers shall be used to a point at least thrity-eight (38) feet beyond Point of Frog on straight and diverging routes. Two nine (9) foot timbers shall be used ahead of the head timbers.

Head timbers for turnouts and derails shall be nominally fourteen (14) feet long.

Bridge timbers shall be new creosoted grade hardwood to the dimensions specified by the bridge plans and notched and/or lagged to bridge structure.

Overall size of timbers shall not be less ¼" of specified dimensions, and shall not have wane exceeding 1" at the rail bearing (tie plate) area.

Timbers shall be oak or mixed hardwoods free of any defects that may impair their strength or durability; such as decay, splits, shakes, excessive slope of grains, or numerous holes or knots, bark, wanes, etc.

Timbers shall be sterilized during treatment by holding them in 190°- 210° F temperature creosote for at least six hours. This time shall not include creosote filling or emptying, nor temperature adjustments or final vacuum time. Final retentions shall be 8#/CF in oak and 10#/CF for mixed hardwoods. See the current AREMA Chapter 30 for preservation treatment of bridge ties.

Except as noted above, all treatment shall be governed by American Wood-Preservers' Association Standards C1, C6, M1, M3, and M4. A 60/40 creosote-coal tar solution conforming to AWPA Standard P-2 shall be used. The solution shall be tested according to AWPA Standard A-1

STEEL SWITCH TIES

Except when turnout is located in a crossing circuit, steel switch ties may be substituted for wood switch timbers. Steel switch timbers shall be specific to the turnout configuration and design and shall be tamped in accordance with the specifications for steel ties. Steel ties shall meet or exceed the specifications for Nartsco H10 steel ties.

TIE PLATES

Existing tie plates may be re-used when ties are replaced provided that they are not bent or broken and are appropriate for the size of the tie and section of rail.

For new construction double shoulder tie plates, #1 relay or better, and appropriate for the size of the tie and section of rail, shall be used.

TIE SPACING

Unless otherwise specified, for new track, ties shall be spaced evenly, 20 per thirty-nine (39) foot of rail, and with suspended joints. For tie replacement projects, existing tie spacing shall be maintained unless otherwise specified.

GAUGE

For new construction, and rail replacement, rail shall be gauged to a nominal 56-1/2", with a maximum 1/4" deviation.

For tie replacement, rail shall be gauged to a nominal 56-1/2", with a 1/4" maximum deviation at new ties and a maximum 1/2" deviation on the plus side, at old ties.

Any existing track with a gauge in excess of 57-1/2" shall be re-gauged to 56-1/2", with a 1/4" deviation.

Gauge at and between steel ties is typically 56-1/4".

RAIL

Rail used for track replacement or new construction shall be 132#/136#RE cross section, and match supplied turnouts, new or used with less than 3/16" head wear and no corrosion at base of rail. Rail lengths shall be uniform and not less than 39' per section, except in turnouts, connection to existing track, or when adjusting staggers in curves or grade crossings. Rails shall be drilled for 1-1/8" bolts. Rail staggers shall not be less than six (6) feet and shall be ideally one-half the length of the uniform rail.

JOINT BARS

Joint bars shall new or #1 relay and shall match the drilling and cross section of rail. Bars shall be fully bolted with bolts, nuts and lock washers of the correct size. Bars shall not have any cracks. For new construction and rail replacement, six (6) hole bars shall be used.

COMPROMISE JOINT BARS

Compromise bars shall new or #1 relay and shall have the correct drilling, cross sections and be of the appropriate orientation for the rail sections being joined. Bars shall be fully bolted with new bolts, nuts and lock washers of the correct size. Bars shall not have any cracks.

INSULATED JOINT BARS

New Alleghany (or equivalent) encapsulated insulated joint bars shall be used and shall match the drilling and cross section of rail. Bars shall be fully bolted with new bolts, nuts and lock washers of the correct size. For new construction and rail replacement, six (6) hole bars shall be used.

TURNOUTS

Unless otherwise specified, turnouts shall be No. 10 with a 132#/136RE cross section and built to AREA design with Pandrol fasteners. Steel shall be new or relay with not more than 3/16" head wear. Frog shall be rail bound manganese, with guardrails. Points, frogs, and guardrails shall be reconditioned, if not new. When turnouts are installed in existing track, turnout rails shall extend not less than five (5) feet beyond points and at least forty (40) feet beyond Point-of- Frog on straight and diverging routes, with any compromise joints beyond these limits.

SWITCH STANDS

Switch stand shall be New Century with a bow style handle. Switch stand shall be located on the diverging side of left handed turnouts and on the straight side of right handed turnouts, or on the outside of ladders, whenever conditions permit.

DERAILS

Derails shall be Hayes Style, or equivalent, bi-directional, and operated by a New Century style switch stand with a bow handle, mounted on new timbers. Derail shall match cross section of rail and shall be arranged to divert movement away from main track.

TRACK CENTERS

Unless otherwise specified, parallel tracks and sidings shall be on fourteen (14) foot centers. The alignment of track between turnouts and parallel tracks shall be according to the offsets in **Pennsylvania Railroad Standard Plan 73008-B.**

SURFACE AND LINE

New and resurfaced track shall be in line with, and run off into existing track unless otherwise specified. Tangent track shall have 0" cross level with a maximum deviation of 1/2", at any point. Curve track in yards shall have a 0” cross level in the body of the curve with a maximum deviation of 1/2", at any point.

Unless otherwise specified, curves in Main track track shall have a 1” cross level in the body of the curve with smooth spirals and a maximum deviation of 1/2", at any point.

Where existing track is being raised, lined, surfaced, and regulated, a minimum lift of two (2) inches shall be made throughout.

BALLAST

Clean 1-1/2" hard rock ballast shall be provided, tamped, regulated, and broomed, to support a uniform line and surface, and to fill all cribs, and provide uniform shoulders, through the project limits, with run offs as required to existing track.

FILTER FABRIC

For new constructions and where cribs are leveled and or sub-roadbed is disturbed, filter fabric shall be installed at least 24” below final top of ties.

DITCHES

Ditches shall be cleared of track materials, brush, and other debris and sloped so that bottom of ditch is not less than four (4) feet from edge of ties, and ideally eight (8) feet from edge of ties where space permits.

PUBLIC GRADE CROSSINGS

For new or renewal, public grade crossing surfaces shall be Flemington Concrete pre-cast full-depth concrete, unless otherwise specified, and installed to manufactures recommendations.

Crossing surface shall extend at least three (3) feet beyond the curb line or edge of roadway or sidewalks.

Rail through crossing shall be new 132RE/136RE CWR, with each length being about the same and at least 120 feet in length. Rail layouts, staggers, and joints shall be installed according to **Chesapeake and Delaware Plan GX1 ~ Grade Crossing Island Layout, dated November 5, 2019**.

Schedule 80 PVC pipe with pull strings, shall be buried at least twelve (12) inches under roadway on both sides and parallel to the tracks, and under tracks at least twelve (12) inches below ties on both sides and parallel to roadway, providing conduit for warning devices and connecting all four quadrants.

Fifty new ties shall be installed on both approaches to the crossing.

Crossing surface shall be placed at an elevation and in a line specified by the Railroad. All new construction shall be in the same surface and line. Existing tracks shall be lined and surfaced to meet new construction.

PRIVATE GRADE CROSSINGS

For new or renewal, private grade crossing surfaces shall be asphalt with PPI rubber flangeways, unless otherwise specified, and installed to manufactures recommendations. Flangeway material shall extend at least two (2) feet beyond the edge of roadway.

Rail through crossing shall match the cross section of rail in both approaches, so long as there are no joints in the roadway or interfering with flangeway material.

If existing joints fall in the roadway or interfere with the installation of flangeway material, the existing rail shall be replaced with CWR, of the cross section and length, as specified by the Railroad.

New ties shall be installed under the roadway and ten new ties shall be installed on both approaches to the crossing. In addition, new ties shall be installed under any joint which is disturbed by rail replacement.

Crossing surface shall be placed at an elevation and in a line specified by the Railroad. All new construction shall be in the same surface and line. Existing tracks shall be lined and surfaced to meet new construction.

AREA/FRA STANDARDS

Notwithstanding any specifications contained herein, all materials and work shall meet all applicable AREA Engineering Requirements and Standards, and all track shall meet FRA Minimum Standards for Class II Track upon completion of work.

BUY USA

All track materials shall be made in the United States of America with providence.

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THERE IS NO JOB SO IMPORTANT, NO SERVICE SO URGENT,
THAT IT NEEDS TO BE DONE, EXCEPT SAFELY.