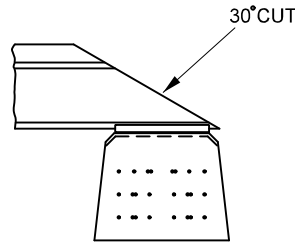


NOTES:

1. INNER GUARD RAILS ARE NOT REQUIRED ON BRIDGES UNTIL BRIDGE OR BRIDGE DECK IS REPLACED OR RUNNING RAIL IS RELAYED ACROSS BRIDGE.
2. ON A DOUBLE TRACK STRUCTURE, INSTALL A SINGLE GUARD RAIL ONLY. REFERENCE STD DWG 4001.
3. INNER GUARD RAILS SHALL BE MADE FROM SECOND HAND RAIL. RAIL SIZE CANNOT EXCEED THE SIZE OF THE MAINLINE RAIL. GUARD RAIL BASE SIZE CANNOT BE MORE THAN 1/2 INCH SMALLER THAN MAINLINE RAIL. ON CONCRETE TIES, 6" BASE RAIL MUST BE USED.
4. SECOND HAND FROG POINTS (#10 AND #14) SHOULD BE USED AT END OF GUARD RAILS IF AVAILABLE.
5. ON CONCRETE TIES, INNER GUARD RAILS SHALL BE FASTENED TO EACH TIE. ON WOOD TIES, INNER GUARD RAILS SHALL BE PLATED AND SPIKED ON EVERY TIE ON NEW INSTALLATIONS.
6. GUARD RAIL JOINT SHALL BE FULLY BOLTED USING SECOND HAND JOINT BARS WHEN AVAILABLE. MINIMUM 2 BOLTS PER RAIL "END".
7. ENSURE THERE ARE NO JOINTS IN THE TRANSITION AREA AS NOTED ON THE DRAWING.
8. ON TANGENT TRACK, SPIKE THE INNER GUARD RAIL WITH TWO SPIKES PER PLATE ON EACH RAIL OF THE TANGENT PORTION AND FOUR SPIKES ON EACH RAIL OF THE CURVED PORTION. ON CURVED TRACK, SPIKE THE ENTIRE GUARD RAIL WITH FOUR SPIKES PER PLATE ON EACH RAIL. IN TRANSITION AREA ALL TIES SHALL BE FULLY SPIKED.
9. ON WOOD TIES, BOX ANCHOR TWO TIES NEAR THE CENTER OF BRIDGE TO RESTRICT LONGITUDINAL MOVEMENT OF GUARD RAIL.

CONCRETE TIE APPROACH



DEPRESSED RAIL HEAD DETAIL

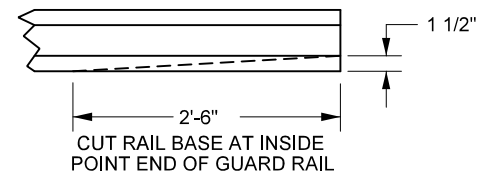
10. THE QUANTITY OF TD PLATES ON CONCRETE TIES WILL VARY DEPENDING ON NUMBER OF TIES. THEY ARE TO BE ORDERED AS NEEDED. PLATES 1 THROUGH 8 COME AS TWO SETS AND ARE TO BE ROTATED 180° ON OPPOSITE ENDS.
11. ON WOOD OPEN DECK BRIDGES, IF TIMBERS ARE ADZED MORE THAN 1.5" DO NOT INSTALL A NEW INNER GUARD RAIL UNTIL TIMBERS ARE REPLACED.

WHERE TO INSTALL:

INNER GUARD RAILS SHALL ONLY BE INSTALLED ON THE FOLLOWING BRIDGE SPANS, NOT THE ENTIRE STRUCTURE:

- *MOVABLE BRIDGE SPANS ON CPM ROUTES
- *THROUGH PLATE GIRDER SPANS LONGER THAN 150' ON CPM ROUTES
- *THROUGH AND PONY TRUSS SPANS LONGER THAN 125' ON CPM ROUTES
- *DECK PLATE GIRDER AND DECK TRUSS SPANS ON STEEL TOWERS WITH HEIGHT 40' OR MORE
- *OTHER STRUCTURES DESIGNATED BY AVP STRUCTURES

REFER TO THE "BRIDGES THAT REQUIRE INNER GUARD RAIL" TAB ON THE TRACK MAINTENANCE PLANNER FOR A LIST OF QUALIFYING SPANS.



RAIL BASE CUT DETAIL

REFERENCE DRAWINGS:
 FOR PLATES (ON CONCRETE), SEE STD DWG 4004
 FOR CONCRETE TIE, SEE STD DWG 0202
 FOR SCREW AND WASHER, SEE STD DWG 0409

**UNION PACIFIC RAILROAD
 ENGINEERING STANDARDS
 DOUBLE INNER GUARD
 RAIL FOR OPEN DECK
 BRIDGES**



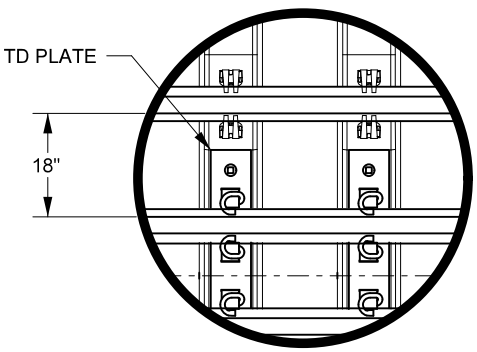
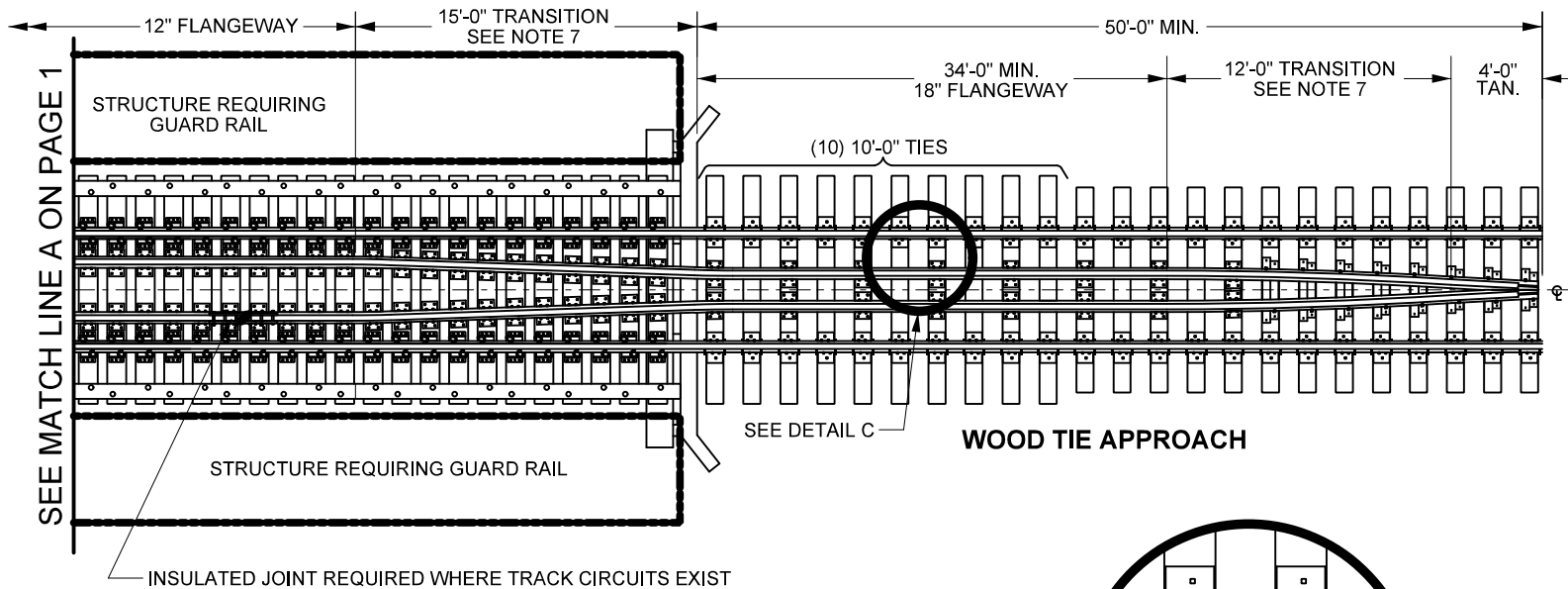
ADOPTED: SEP. 21, 2020
 REVISED: MAR. 15, 2023
 FILE NO.: 4002

STD DWG

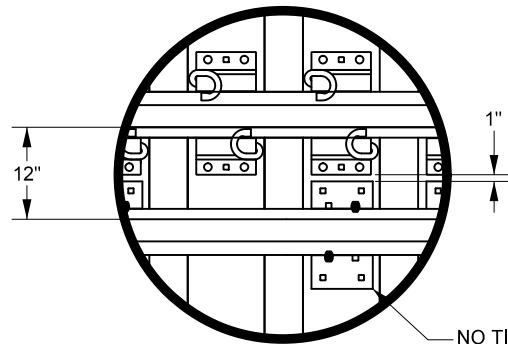
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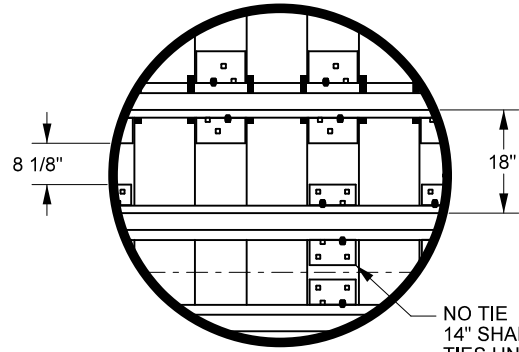


DETAIL A



DETAIL B

NO TIE PLATES LONGER THAN 14" SHALL BE USED ON WOOD TIES UNDER THE GUARD RAIL. PLATES TO BE REVERSED UNDER GUARD RAIL WITH SHORT END OF PLATE TOWARD RUNNING RAIL.



DETAIL C

NO TIE PLATES LONGER THAN 14" SHALL BE USED ON WOOD TIES UNDER THE GUARD RAIL. PLATES TO BE REVERSED UNDER GUARD RAIL WITH SHORT END OF PLATE TOWARD RUNNING RAIL.

NOTE: SEE PAGE 1 FOR THE REST OF THE DWG.

UNION PACIFIC RAILROAD ENGINEERING STANDARDS	
DOUBLE INNER GUARD RAIL FOR OPEN DECK BRIDGES	
	ADOPTED: SEP. 21, 2020 REVISED: MAR. 15, 2023 FILE NO.: 4002
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