**39' JOINTED RAIL**

For 39' jointed rails in main line track, 24 ties and 40 rail anchors per rail. 3230 ties, 5418 rail anchors, 272 parts of angle bars, and 1832 angle bar bolts, nuts and washers per mile.

**78' JOINTED RAIL**

For 78' jointed rails in main line track, 48 ties and 88 rail anchors per rail. 3260 ties, 5939 rail anchors, 536 parts of angle bars, and 1976 angle bar bolts, nuts and washers per mile.

**NOTES**

1. For jointed rails in main line track, box anchor every other tie except ties under joint bars.
2. Conditional rail attachment must be effectively restrained.
3. Anchors shall be applied from the gauge side of rails where possible.
4. Box anchor 184 ties each direction from fixed objects, railroads, road crossings, and fixed bridges.

**STATE OF ALASKA**

**ALASKA RAILROAD CORPORATION**

**MAIN TRACK CONSTRUCTION**

WOOD TIE SPACING AND RAIL ANCHORING

FOR 39' AND 78' RAIL LENGTHS

DESIGNED BY: 

ENGINEER: 

APPROVED BY: 

SCALE: 1" = 100'
GENERAL NOTES

1. PROVIDE NEW 7/8" THICK HARDWOOD CROSS TIES WITH PANNOX PLATES AND C-CUPS ON 19-1/2" CENTER-TO-CENTER (OR PER MODULAR CROSSING MANUFACTURER'S RECOMMENDATIONS) THROUGH CROSSING AND 12 YDS BEYOND CROSSING IN BOTH DIRECTIONS.

2. MODULAR CROSSING PADS SHALL BE 8.125" LONG AND MANUFACTURED FROM CONCRETE SPECIFICALLY DESIGNED FOR RAILROAD CROSSING APPLICATIONS. THE PARTICULAR MANUFACTURER SHALL BE RESPONSIBLY ENGAGED IN THE FABRICATION OF RAILROAD CROSSING MATERIALS AND APPROVED BY THE CHIEF ENGINEER.

3. CROSSING PADS LOCATED WITHIN 2' OF GRATER CURVES SHALL BE DESIGNED FOR THE SPECIFIC APPLICATION.

4. ALL MODULAR CROSSING PADS, HARDWARE, AND INSTALLATION PROCEDURES SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND FOR THE RAIL SIZE USED.

5. ALL RAIL JOINTS MUST BE WELDED THROUGHOUT THE CROSSING. NO JOINTS ALLOWED WITHIN 18' OF THE CROSSING PANEL. ALL JOINTS STAGED ON 9.5' WELDING AND HELD TOGETHER WITH MODULAR PLATE BY THE CONTRACTOR. ALL JOINS IN CROSSING SHALL BE GROUND FLUSH SO AS NOT TO INTERFERE WITH FLANGE FILLER.

6. THE INNER 2 HOLES SHALL BE CIRCLED ON NEW RAIL AND CONNECTED TO CROSSING RAIL WITH NEAR 20° ANGLE BOLTS AND BOLTS.

7. TO MINIMIZE SETTLEMENT, KEEP EXCAVATION FOR UNDER DRAIN AND CONDUITS TO A MINIMUM. COMPACT BARRIERS IN UFFS NOT EXCEEDING 8" TO GO OF MAXIMUM DRY DENSITY.

8. IT WILL BE NECESSARY IN MOST CASES TO RAISE THE TRACK THROUGH THE CROSSING TO MATCH FINAL TRENCH DESIGN GRADE. FINAL TRACK DESIGN GRADE SHALL BE APPROVED BY THE CHIEF ENGINEER. MINIMUM OF TRACK RAISE SHALL BE NO GREATER THAN 1/2' PER 20 FEET.

9. MINIMUM OF THREE DAYS OF RAIL TRAFFIC REQUIRED OVER NEWLY CONSTRUCTED CROSSING PRIOR TO FINAL SURFACING OF THE TRACK.

10. FINAL INSTALLATION OF MODULAR CROSSING PADS CANNOT BEGIN UNTIL FINAL SURFACING OF THE TRACK IS COMPLETED.

11. DRAINAGE FROM ROAD SURFACE SHALL NOT DRAIN TOWARDS CROSSING.

12. BOX ANCHOR EVERY 184 1/2" BEYOND CROSSING PADS IN BOTH DIRECTIONS. PANNOX PLATES COUNT AS BOX ANCHORS.

13. EXTEND ROAD SURFACE 1' BEYOND CROSSING SURFACE WITH MODULAR TIE AND CROSSING AND FACE 1/4" BEYOND CROSSING.

14. FOR A TRACK ELEVATION CHANGE OF 0' 3" OR LESS, SAW CUT AND REMOVE MATERIAL A MINIMUM OF 5' FT FROM THE CENTERLINE FOR EVERY 1' OF RISE GREATER THAN 3", CUT THE ASHALT BACK AN ADDITIONAL 10'.

ALASKA RAILROAD CORPORATION
OFFICE OF THE CHIEF ENGINEER
P.O. BOX 107500
ANCHORAGE, AK 99510-7500
(907) 255-2425

STATE OF ALASKA

49 th

MODULAR CROSSING

BEFORE YOU DIG CALL FOR FREE UNDERGROUND LOCATION

49 th

49 th

Thomas E. Brooks

NO. CE-3081

2,78-66
MATHEMATICAL PROPERTIES

AREA: HEAD 3.91 SQ. IN. = 34.6%
WEB 3.00 SQ. IN. = 27.1%
BASE 4.29 SQ. IN. = 38.1%
TOTAL 11.25 SQ. IN. = 100.0%
WEIGHT PER YARD = 114.7 LBS.

MOMENT OF INERTIA = 65.6
SECTION MODULUS, HEAD = 18.0
SECTION MODULUS, BASE = 22.0
RATIO, M.I. TO AREA = 5.83:1
RATIO, H.S. TO AREA = 1.6:1
RATIO, HEIGHT TO BASE = 1.2:1

SIDE VIEW

SECTION A-A
FULL SIZE

SCALE: 3" = 1'-0"

(3) 1/2" HOLES