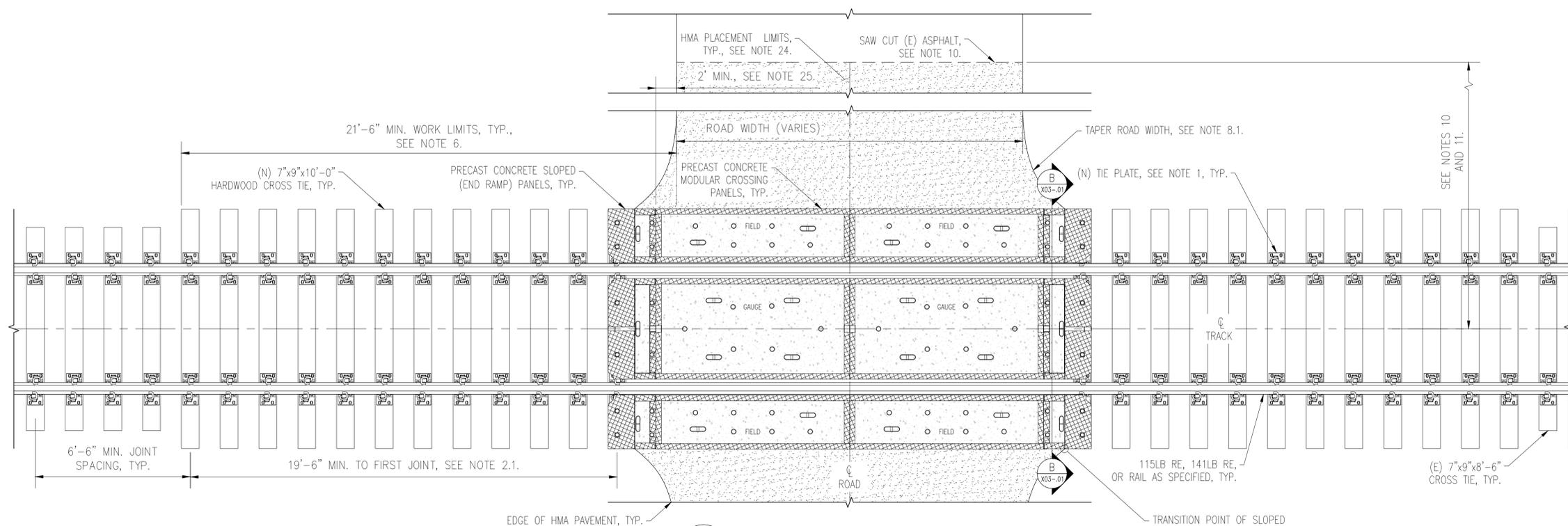


DRAWING LOCATION: P:\ENGINEERING\ARCC STANDARDS\2023 STANDARD DRAWINGS\1 ROADWAY (X)\X-3 GRADE CROSSINGS.DWG

PUBLISHED CTB

SCALE AS NOTED

DATE TIME 1/29/2024 3:58:15 PM



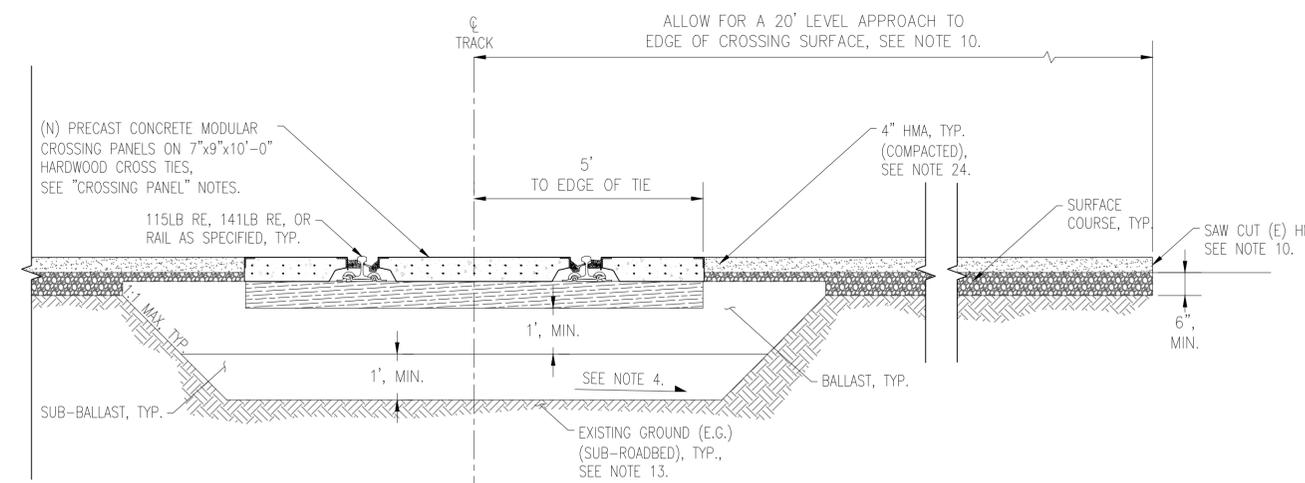
**A** MODULAR CROSSING PANEL PLAN  
X-03.01 SCALE: NO SCALE

**GENERAL NOTES:**

1. PROVIDE NEW 7"x9"x10'-0" HARDWOOD CROSS TIES WITH PLATES AND e-CLIPS ON THROUGH THE LENGTH OF THE CROSSING AT 19'-1/2" ON CENTER, OR AS SPECIFIED BY THE MANUFACTURER, AND A MINIMUM OF TWELVE (12) TIES BEYOND THE CROSSING IN BOTH DIRECTIONS.
  - 1.1. 5'-1/2" RAIL BASE - PANDROL TPL-26M TIE PLATE WITH e-CLIPS:
  - 1.2. 6" RAIL BASE - PANDROL VICTOR TIE PLATE WITH e-CLIPS.
2. RAIL:
  - 2.1. ALL RAIL JOINTS MUST BE WELDED THROUGHOUT THE CROSSING. NO JOINTS ALLOWED WITHIN 19'-6" OF THE CROSSING PANELS.
  - 2.2. ALL WELDS WITHIN THE CROSSING SHALL BE GROUND FLUSH SO AS TO NOT INTERFERE WITH THE FLANGEWAY FILLER.
  - 2.3. WELDERS AND WELDING KITS PROVIDED BY THE CONTRACTOR MUST BE APPROVED BY THE CHIEF ENGINEER.
  - 2.4. STAGGER JOINTS A MINIMUM OF 6'-6".
  - 2.5. THE INNER TWO (2) HOLES SHALL BE DRILLED ON NEW RAIL AND CONNECTED TO THE EXISTING RAIL WITH NEW 3/8" (MIN.) ANGLE BARS AND STRUCTURAL FASTENERS.
  - 2.6. BOX ANCHOR EVERY TIE FOR ONE HUNDRED EIGHTY-FOUR (184) TIES BEYOND THE CROSSING IN BOTH DIRECTIONS; UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR AS SPECIFIED ON THE PLANS. PANDROL PLATES SHALL COUNT AS BOX ANCHORS.
3. BALLAST DEPTH SHALL BE, AT A MINIMUM, 12" BELOW THE TIE, AS MEASURED AT THE LOW RAIL.
4. SUB-GRADE SHALL SLOPE TO PREVAILING DRAINAGE SIDE ON TANGENT TRACK AND TO THE INSIDE OF THE CURVE ON CURVED TRACK.
  - 4.1. SUB-GRADE SLOPE TO BE SPECIFIED ON THE PLANS OR BY THE ENGINEER IN THE FIELD.
5. EXCAVATION (NATIVE MATERIAL) MAY BE USED FOR THE ROADBED EMBANKMENT IF IT MEETS REQUIREMENTS FOR SELECTED MATERIAL, TYPE A. SUB-BALLAST MAY ALSO BE FOR THE ROADBED EMBANKMENT.
6. WITHIN THE WORK LIMITS FOR THE ADDITIONAL 7"x9"x10'-0" HARDWOOD CROSS TIES, EXCAVATE MATERIAL A MINIMUM OF 2'-0" BELOW THE BOTTOM OF TIE, AS MEASURED FROM THE LOWEST RAIL AT ITS FINAL ELEVATION FOR THE SIDE NEAREST THE WORK.
  - 6.1. RECONSTRUCT THE BALLAST SECTION IN ACCORDANCE WITH ARCC STANDARD DRAWING X-01.01 USING CLASSIFIED MATERIALS.
7. IN MOST CASES, THE TRACK WILL NEED TO BE RAISED THROUGH THE CROSSING TO MATCH EXISTING TRACK DESIGN GRADES.
  - 7.1. TRACK RUNOFF FROM THE CROSSING SHALL BE NO GREATER THAN 1/4" PER 62'-0".
8. EXTEND THE ROAD SURFACE LEVEL WITH THE CROSSING SURFACE A MINIMUM OF 20'-0" BEYOND THE EDGE OF CROSSING.
  - 8.1. TAPER THE PAVEMENT FROM THE EDGE OF PAVEMENT TO THE ROAD WIDTH TO THE TRANSITION POINT ON THE SLOPED (END RAMP) PANELS.
  - 8.2. GRADE ROAD SURFACES TO DRAIN AWAY FROM THE CROSSING.

**CONSTRUCTION:**

9. REMOVE TRACK IN ACCORDANCE WITH SECTION 803.
10. SAW CUT TRANSVERSE JOINTS IN EXISTING ASPHALT IN ACCORDANCE WITH SUBSECTION 401-3.17 AS DIRECTED BY THE ENGINEER OR AS SHOWN ON THE PLANS. IF NOT SHOWN IN THE PLANS AND WHERE APPLICABLE, MAINTAIN A MINIMUM OF 50'-0" FROM THE CENTERLINE OF THE NEAREST TRACK.
11. REMOVE PAVEMENT LAYERS IN ACCORDANCE WITH SUBSECTION 202-3.05.
12. EXCAVATE, AS REQUIRED, IN ACCORDANCE WITH SECTION 203. KEEP EXCAVATION TO A MINIMUM TO REDUCE SETTLEMENT ADJACENT TO THE CROSSING.
13. GRADE AND SHAPE EXISTING GROUND (E.G.) PRIOR TO THE PLACEMENT OF CLASSIFIED MATERIALS.
  - 13.1. IF EXISTING GROUND IS SOFT, CONSULT THE ENGINEER. ADDITIONAL EXCAVATION, IMPORTATION OF CLASSIFIED MATERIAL, AND/OR PLACEMENT OF GEOTEXTILE MATERIAL MAY BE REQUIRED.
14. COMPACT IN SITU MATERIAL IN ACCORDANCE WITH SUBSECTION 203-3.05 "COMPACTION WITHOUT MOISTURE AND DENSITY CONTROL".
15. WHEN REQUIRED, PLACE GEOTEXTILE MATERIAL IN ACCORDANCE WITH SECTION 630.
16. PLACE, GRADE, AND SHAPE SELECTED MATERIALS, TYPES A AND C, IN ACCORDANCE WITH SUBSECTION 203-3.03.
17. COMPACT SELECTED MATERIAL, TYPE A IN ACCORDANCE WITH SUBSECTION 203-3.04 "COMPACTION WITH MOISTURE AND DENSITY CONTROL".
18. PLACE AND GRADE AGGREGATE BASE/SURFACE COURSES IN ACCORDANCE WITH SUBSECTION 301-3.01.
19. SHAPE AND COMPACT AGGREGATE BASE COURSES IN ACCORDANCE WITH SUBSECTION 301-3.03 "SHAPING AND COMPACTION".
20. PLACE RAILROAD BALLAST OF THE TYPE INDICATED ON THE PLANS IN ACCORDANCE WITH SUBSECTION 309-2.01.
21. PERFORM RAILROAD TRACK CONSTRUCTION IN ACCORDANCE WITH SECTION 802.
22. UPON COMPLETION OF THE TRACK WORK; PLACE ADDITIONAL BALLAST AS NEEDED TO TAMP, SURFACE, AND DRESS BALLAST IN ACCORDANCE WITH SUBSECTION 309-3.02.
23. AFTER FINAL SURFACING IS COMPLETED, INSTALL THE MODULAR CROSSING PANELS IN ACCORDANCE WITH SECTION 617 AND THE MANUFACTURER'S RECOMMENDATIONS.
24. CONSTRUCT ONE OR MORE COURSES OF HOT MIX ASPHALT (HMA) PAVEMENT ON APPROVED SURFACES IN ACCORDANCE WITH SECTION 401.
25. EDGE OF NEWLY PLACED PAVEMENT SHALL BE A MINIMUM OF 2'-0" FROM THE EDGE OF THE NEAREST FULL PANEL (NOT THE SLOPED PANEL).
26. WHEN INDICATED ON THE PLANS, FURNISH AND PLACE TRAFFIC MARKINGS OF THE TYPE, COLOR, DIMENSIONS, AND AT THE LOCATIONS SHOWN ON THE PLANS IN ACCORDANCE WITH SECTION 670.



**B** MODULAR CROSSING PANEL SECTION B-B  
X-03.01 SCALE: 1/2"=1'0"

**UTILITIES:**

VERIFY ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.  
 LOCATE CALL CENTER OF ALASKA (811):  
 - ANCHORAGE .....1.907.278.3121  
 - FAIRBANKS .....1.907.459.6400  
 - STATEWIDE .....1.800.478.3121  
 CALL CENTER WILL NOTIFY SUBSCRIBED UTILITIES ONLY, OTHER UTILITIES NEED TO BE CONTACTED INDIVIDUALLY.

**CROSSING PANELS:**

- PANELS ARE TO BE MANUFACTURED FOR THE SPECIFIC RAIL WEIGHT AND FASTENING SYSTEM INDICATED ON THE PLANS.
- WITHIN CURVES 3' OR GREATER, PANELS SHALL BE DESIGNED FOR THE INDIVIDUAL CURVE(S).
- PANELS ARE TO BE FABRICATED BY A COMPANY THAT IS REGULARLY ENGAGED IN THE FABRICATION OF RAILROAD CROSSING MATERIALS AND SHALL BE APPROVED BY THE CHIEF ENGINEER.
- A SET OF PANELS CONSIST OF ONE (1) GAUGE PANEL AND TWO (2) FIELD PANELS.
- EACH CROSSING SHALL HAVE SIX (6) SLOPED (END RAMP) PANELS: TWO (2) RIGHT, TWO (2) LEFT, AND TWO (2) GAUGE.
- EACH PANEL SHALL CLEARLY SHOW WEIGHT OF PANEL, RAIL WEIGHT, DATE OF CAST, AND CROSSING TYPE (WHEN APPLICABLE).
- PANEL LENGTH SHALL BE 8'-1 1/2" FOR 10'-0" HARDWOOD CROSS TIES SPACED AT 19'-1/2" ON CENTER.
- PANEL EDGES SHALL BE FRAMED WITH L3x3x3/8".
- SLOPED PORTIONS OF THE END RAMP PANELS SHALL BE PROTECTED, AT A MINIMUM, WITH 3/16" PLATE.
- PANELS SHALL BE PROVIDED WITH RUBBER FIELD AND GAUGE FLANGEWAY FILLERS.
- UTILIZE CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7,000PSI.
- PROVIDE 3/4" LAG SCREWS, OF THE LENGTH SPECIFIED BY THE MANUFACTURER FOR THE WEIGHT OF RAIL SPECIFIED, TO SECURE THE PANELS IN PLACE. A MINIMUM 10% OVERAGE SHALL BE INCLUSIVE TO THE QUANTITY.

**MATERIALS:**

- HOT MIX ASPHALT PAVEMENT: IN ACCORDANCE WITH THE SUBSECTION 401-2.09 FOR THE TYPE AND CLASS SPECIFIED ON THE PLANS. IF NOT SPECIFIED, ASSUME TYPE II CLASS A. USE MATERIALS SPECIFIED UNDER SECTION 401.
- ROADBED EMBANKMENT: SELECTED MATERIAL, TYPE A IN ACCORDANCE WITH SUBSECTION 703-2.07.
- SUB-BALLAST: AGGREGATE BASE COURSE, GRADING C-1 IN ACCORDANCE WITH SUBSECTION 703-2.03.
- SURFACE COURSE: AGGREGATE BASE COURSE, GRADING D-1 IN ACCORDANCE WITH SUBSECTION 703-2.13.
- BALLAST: TYPE 3 (FOR MAIN LINE TRACK) OR 4A (FOR INDUSTRY TRACK) IN ACCORDANCE WITH SUBSECTION 703-2.17.
- TIE PLATES: AS SPECIFIED FOR THE CORRESPONDING RAIL BASE WIDTH.



**STANDARD PLAN**

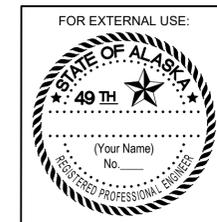
**PRECAST CONCRETE MODULAR CROSSING**

ADOPTED AS A STANDARD PLAN BY:

Brian A. Lindamood, P.E., S.E.  
Chief Engineer

ADOPTION DATE: 01/01/2024

LAST CODE AND STANDARDS REVIEW BY: BAO DATE: 01/29/2024



X-03.01