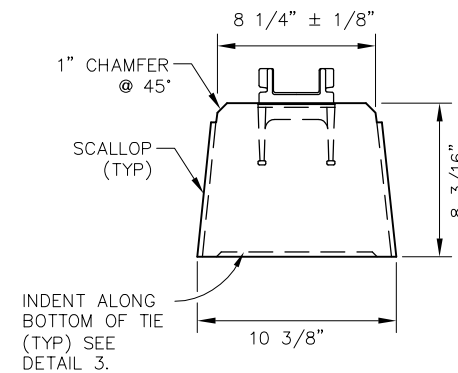
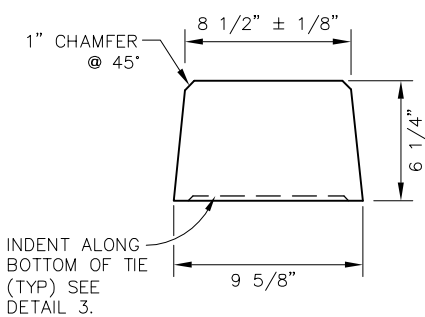


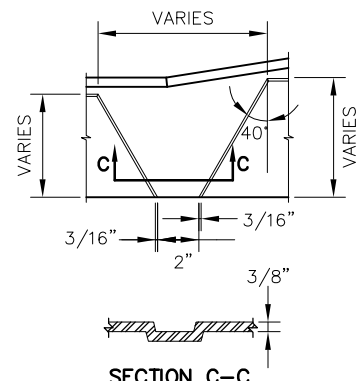
**STANDARD CONCRETE TIE**



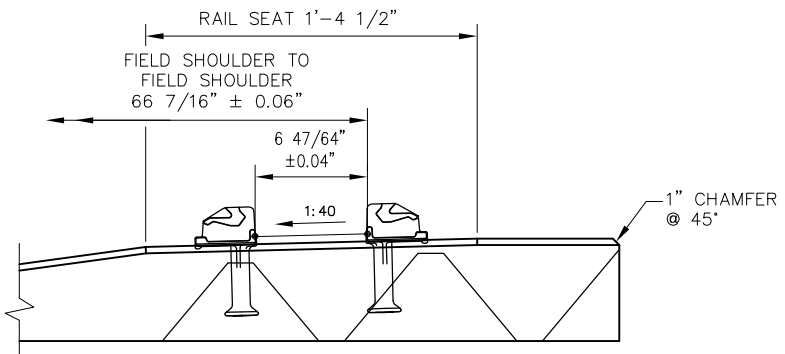
**SECTION A-A**  
END OF TIE SIMILAR



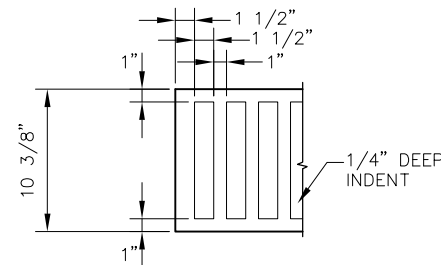
**SECTION B-B**



**DETAIL 1**  
**SCALLOP**



**DETAIL 2**  
**SHOULDERS**



**DETAIL 3**  
**BOTTOM INDENT DETAIL**

**GENERAL NOTES:**

**GENERAL**

1. CONFORM WITH CURRENT AREMA CHAPTER 30, CONCRETE TIES AND CALTRAIN STANDARD SPECIFICATION SECTIONS 20044 AND 20046
2. SUBMIT SHOP DRAWINGS FOR APPROVAL
3. THE LENGTH OF TIES ARE 8'-3" MINIMUM, 8'-6" MAXIMUM
4. THE TIE SHALL BE OF UNIFORM IN WIDTH
5. SPECIFIED PANDROL FASTENINGS MAY CHANGE DUE TO CHANGES BY THE MANUFACTURER
6. WEIGHT: 650 LBS MAX ( $\pm$  20 LBS) INCLUDING FASTENING SHOULDERS

**CONCRETE**

1. 7,000 PSI MINIMUM AT 28 DAY
2. 4,500 PSI MINIMUM AT TRANSFER
3. AIR ENTRAINED: MINIMUM 3.5% AIR IN HARDENED CONCRETE

**PRESTRESSING**

1. 5.32 MM NOMINAL DIAMETER (ASTM A881M), GRADE 260, STRESS RELIEVED. TENSION EACH WIRE TO 7000 PSI
2. WIRE PATTERN: 18 MINIMUM, 4 ROWS
3. CUT WIRE TO WITHIN 1/8" FROM SURROUNDING CONCRETE AT THE ENDS

**SURFACE FINISH**

STEEL FORM FINISH, EXCEPT BOTTOM AND ENDS SHALL HAVE ROUGH FINISH

**RAIL FASTENINGS (PANDROL)**

1. TIE PAD: 6.5 MM THICK 7083WB (POLY)
2. SHOULDERS: 9086
3. TOE INSULATOR: 7695
4. POST INSULATOR: 7692
5. FAST CLIPS: 1601, GALVANIZED

**NOTES:**

- a) NORMAL TOE LOAD 2,400 TO 3,000 LBS, AND NORMAL RAIL SEAT CLAMPING FORCE 4,800 TO 6,000 LBS
- b) SEE SD-2222 FOR FASTENING ASSEMBLIES FOR STANDARD JOINTS AND INSULATED JOINTS
- c) IN THE EVENT OF SUBSEQUENT PRODUCTION CHANGE, SUBMIT (IN WRITING) FOR ENGINEER'S APPROVAL PANDROL RECOMMENDED REPLACEMENT WHICH EQUALS OR EXCEEDS THE PART NUMBER SPECIFIED HEREIN

**TOLERANCES**

1. RAIL SEAT CANT: 1:40  $\pm$  5
2. RAIL SEAT FLATNESS:  $\pm$  1/32" ACROSS ANY PART OF THE RAIL SEAT

REV	DATE	BY	CHK	APP	DESCRIPTION

**PENINSULA CORRIDOR JOINT POWERS BOARD**

APPROVED BY:






1250 San Carlos Avenue  
San Carlos, CA 94070

**STANDARD DRAWINGS**

**TRACK**  
**RAILS, TIES, AND FASTENERS**  
**CONCRETE TIES FOR 136 RE RAIL**  
**STANDARD CROSS TIES**

CADD FILE NO.:	SD-2211
REV	DATE
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STANDARD NO.:	SD-2211