

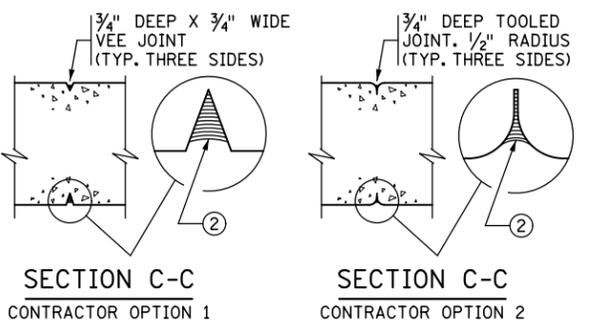
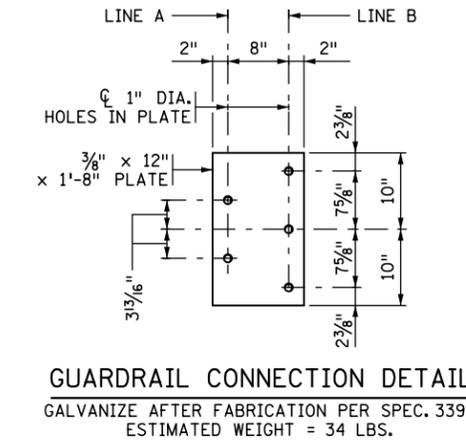
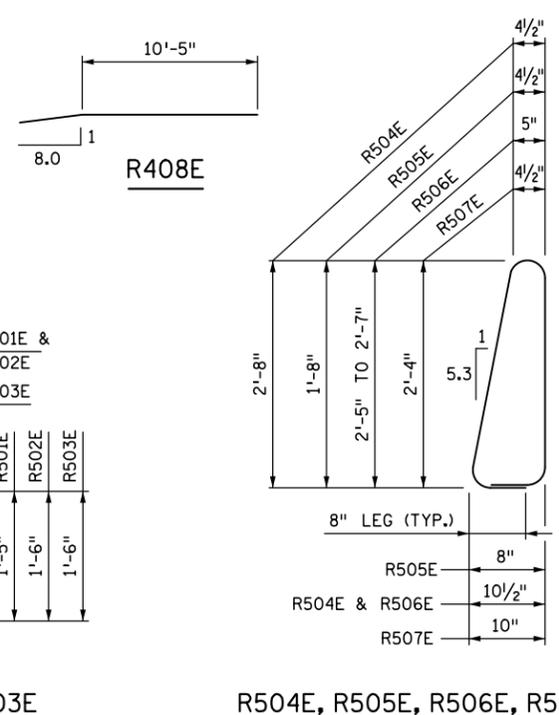
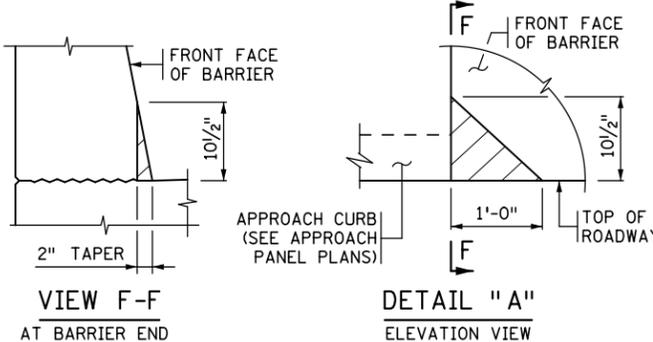
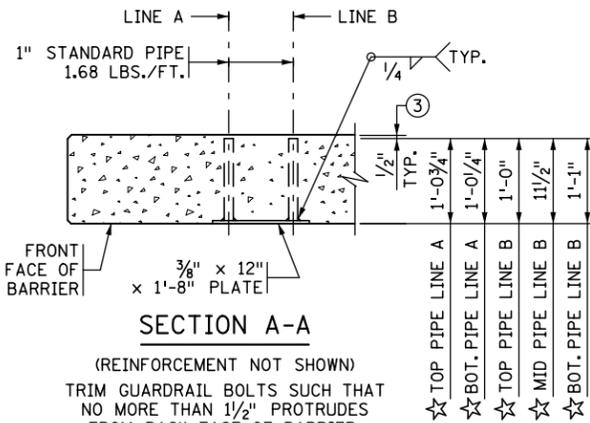
**DESIGNER NOTE**  
 (REMOVE PRIOR TO PLOTTING FINAL PLAN)  
 MINIMUM BARRIER LENGTH ON APPROACH PANEL IS 10'-8" WITH MINIMUM OF 22 R502E AND R503E DOWELS WITH ACCOMPANYING APPROPRIATE BARRIER VERTICAL BARS, 12" MAX. SPACING. VERIFY APPROACH BARRIER LENGTH, NEED FOR A GUARDRAIL CONNECTION, AND VERTICAL TAPER WITH ROADWAY DESIGNER. REFER TO MEMO TO DESIGNERS (2016-01) FOR ADDITIONAL REQUIREMENTS REGARDING BARRIER PLACEMENT.

**EXPANSION JOINT ④**  
 EXPANSION DEVICE NOT SHOWN

**CONTROL JOINT**

**INSIDE ELEVATION OF BARRIER**  
 BARRIER MEETS NCHRP 350 TL-4 REQUIREMENTS ON BRIDGE DECK AND TL-3 ON APPROACH PANEL.

| BILL OF REINFORCEMENT FOR BARRIER |              |                 |       |                  |
|-----------------------------------|--------------|-----------------|-------|------------------|
| BAR                               | NO.          | LENGTH          | SHAPE | LOCATION         |
| R501E                             |              | 5'-7"           |       | BARRIER DOWEL    |
| R502E                             |              | 5'-9"           |       | BARRIER DOWEL    |
| R503E                             |              | 5'-8"           |       | BARRIER DOWEL    |
| R504E                             |              | 7'-1"           |       | BARRIER VERTICAL |
| R505E                             |              | 5'-1"           |       | BARRIER VERTICAL |
| R506E                             | -- SER. OF 4 | 6'-7" TO 6'-11" |       | BARRIER VERTICAL |
| R507E                             |              | 6'-5"           |       | BARRIER VERTICAL |
| R408E                             |              | 11'-7"          |       | BARRIER LONGIT.  |
| R4_E                              |              |                 |       | BARRIER LONGIT.  |
| R4_E                              |              |                 |       | BARRIER LONGIT.  |
| R4_E                              |              |                 |       | BARRIER LONGIT.  |
| R4_E                              |              |                 |       | BARRIER LONGIT.  |



- GENERAL NOTES**
- MEASURE PAYMENT LENGTH BETWEEN THE OUTSIDE ENDS OF THE BARRIER. CONCRETE BARRIER = 496 LBS./FT. (0.123 CU. YDS./FT.)
  - FINISH ALL EDGES OF BARRIER WITH 1/2" CHAMFER, EXCEPT WHERE OTHERWISE NOTED.
  - SPACE CONTROL JOINTS AT 10 FT. MAXIMUM. REFER TO SUPERSTRUCTURE SHEET FOR SPECIFIC SPACING INFORMATION.
  - GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, SPEC. 3306.
  - GUARDRAIL CONNECTION AND NAME PLATE TO BE CONSIDERED INCIDENTAL TO BARRIER.
  - BARRIER QUANTITIES ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.
- PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT IN DECK.
  - JOINT SEALANT PER MnDOT APPROVED/QUALIFIED PRODUCTS LIST - CRACK AND JOINT MATERIALS - SILICONE JOINT SEALERS.
  - REMOVE CONCRETE FROM PIPE ENDS AFTER SLIPFORMING OR FORM REMOVAL.
  - REFER TO "WATERPROOF EXPANSION DEVICE" STANDARD PLANS FOR COVER PLATE DETAILS.

REVISION:  
 APPROVED: AUGUST 24, 2016  
 Kevin Weston  
 STATE BRIDGE ENGINEER

**CONTROL JOINT DETAILS**  
 WHEN USING SLIP FORM METHOD TO PLACE THE CONCRETE, CUT JOINT 3 INCHES DEEP USING MARGIN TROWEL OR SIMILAR MEANS IMMEDIATELY AFTER CONCRETE PLACEMENT (TYP. THREE SIDES).

CERTIFIED BY \_\_\_\_\_  
 LICENSED PROFESSIONAL ENGINEER DATE \_\_\_\_\_  
 NAME: \_\_\_\_\_ LIC. NO. \_\_\_\_\_

TITLE: **SINGLE SLOPE CONCRETE BARRIER 36" (TYPE S, TL-4)**  
 PARAPET ABUTMENT WITH GUARDRAIL CONNECTION (WITHOUT CONCRETE WEARING COURSE)

DES: \_\_\_\_\_ DR: \_\_\_\_\_  
 CHK: \_\_\_\_\_ CHK: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 SHEET NO. OF SHEETS \_\_\_\_\_  
 BRIDGE NO. \_\_\_\_\_

FIG. 5-397.139(A)