

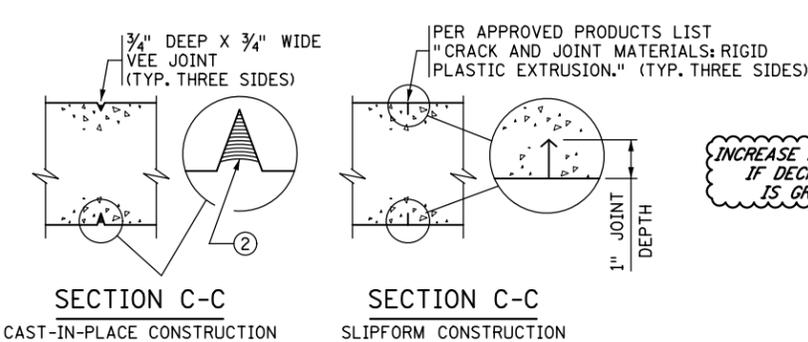
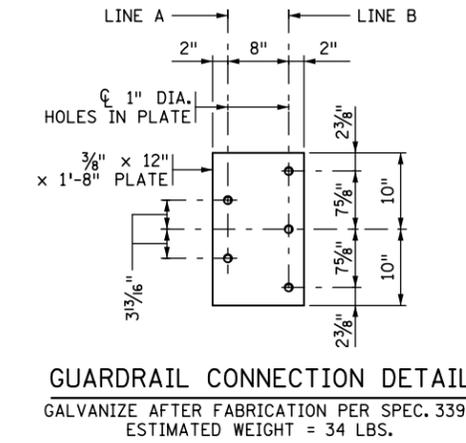
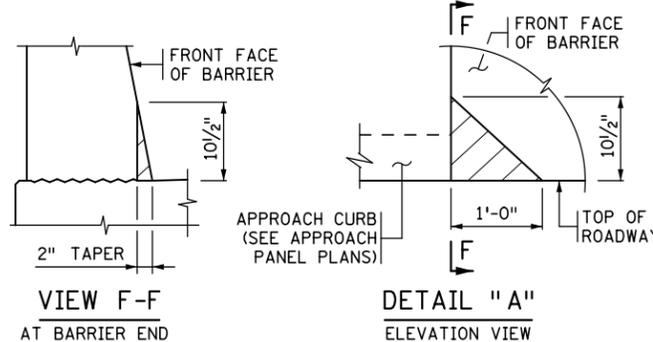
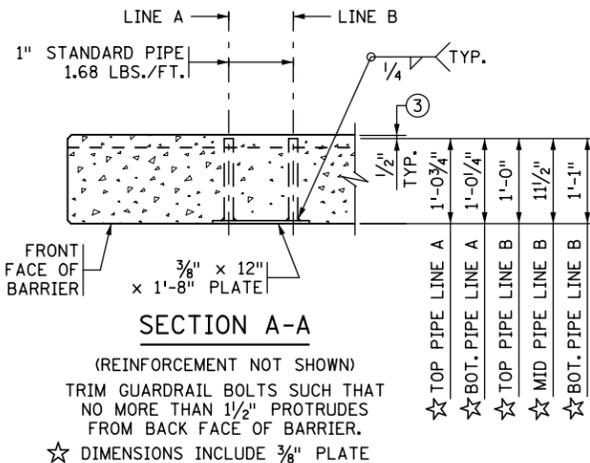
**DESIGNER NOTE**  
 (REMOVE PRIOR TO PLOTTING FINAL PLAN)  
 MINIMUM BARRIER LENGTH ON APPROACH PANEL IS 10'-8" WITH MINIMUM OF 22 R502E AND R503E DOWELS WITH ACCOMPANYING APPROPRIATE BARRIER VERTICAL BARS, 12" MAX. SPACING. VERIFY APPROACH BARRIER LENGTH, NEED FOR A GUARDRAIL CONNECTION, AND VERTICAL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

**EXPANSION JOINT ④**  
 EXPANSION DEVICE NOT SHOWN

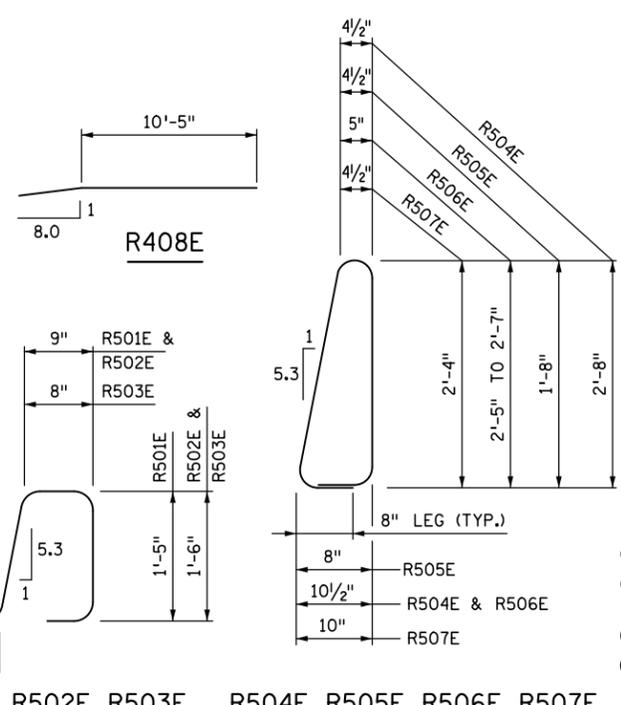
**CONTROL JOINT**

**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.



**INCREASE R501E VERTICAL LEGS IF DECK SLAB THICKNESS IS GREATER THAN 9".**



- 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: MAY 10, 2017

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

**CONTROL JOINT DETAILS**

FOR SLIPFORM CONSTRUCTION: IMMEDIATELY AFTER CONCRETE IS PLACED AND WHILE IT IS STILL WET, CREATE A ONE INCH STRAIGHT GROOVE USING A TROWEL. INSERT RIGID PLASTIC EXTRUSION INTO GROOVE TO A DEPTH 1/8" BELOW THE SURFACE; FINISH OVER GROOVE COMPLETELY HIDING THE EXTRUSION.

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

TITLE: **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)