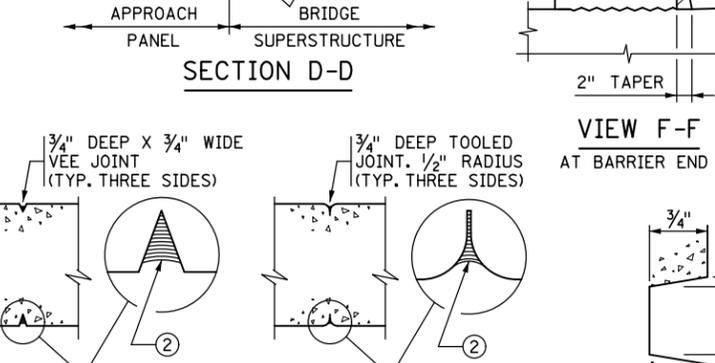
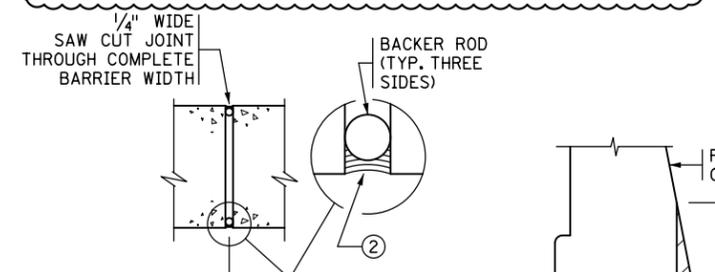


REVISIONS:

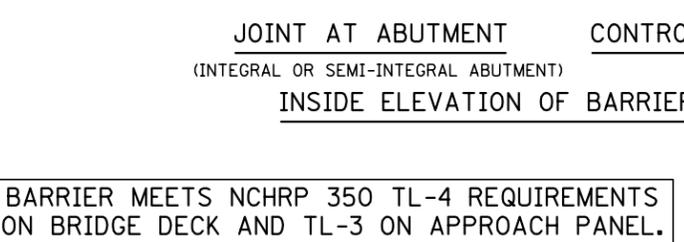
APPROVED: AUGUST 24, 2016  
*Kevin Weston*  
 STATE BRIDGE ENGINEER

**DESIGNER NOTE**  
 (REMOVE PRIOR TO PLOTTING FINAL PLAN):  
 MINIMUM BARRIER LENGTH ON APPROACH PANEL IS 16'-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.

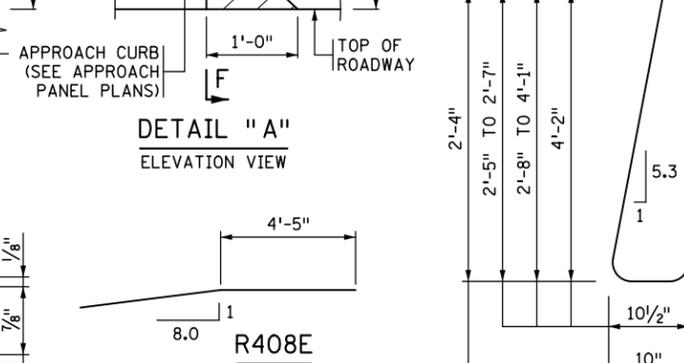
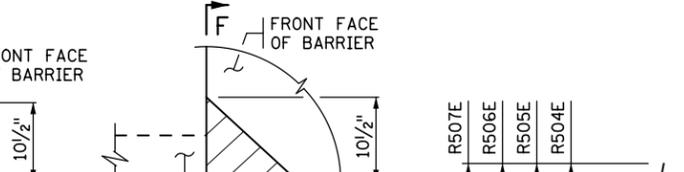


**CONTROL JOINT DETAILS**  
 CONTRACTOR OPTION 1  
 CONTRACTOR OPTION 2

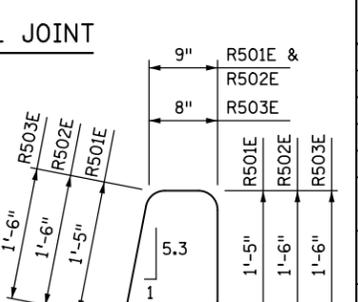
WHEN USING SLIP FORM METHOD TO PLACE THE CONCRETE, CUT JOINT 3 INCHES DEEP USING MARGIN TROWEL OR SIMILAR MEANS IMMEDIATELY AFTER CONCRETE PLACEMENT (TYP. THREE SIDES).



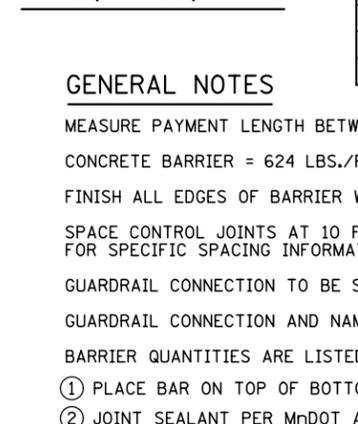
**BARRIER MEETS NCHRP 350 TL-4 REQUIREMENTS ON BRIDGE DECK AND TL-3 ON APPROACH PANEL.**



**BARRIER RUSTICATION**



**R501E, R502E, R503E**



**R504E, R505E, R506E, R507E**

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		9'-2"		BARRIER VERTICAL
R505E	-- SER. OF 12	6'-3" TO 9'-1"		BARRIER VERTICAL
R506E	-- SER. OF 4	5'-9" TO 6'-1"		BARRIER VERTICAL
R507E		5'-6"		BARRIER VERTICAL
R408E		11'-8"		BARRIER LONGIT.
R409E		7'-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 = 624 LBS./FT. (0.154 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.  
 ① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT IN DECK.  
 ② JOINT SEALANT PER MnDOT APPROVED/QUALIFIED PRODUCTS LIST - CRACK AND JOINT MATERIALS - SILICONE JOINT SEALERS.  
 ③ REMOVE CONCRETE FROM PIPE ENDS AFTER SLIPFORMING OR FORM REMOVAL.