

END VIEW
 ** DIMENSION SHOWN IS TO THE TOP OF THE WEARING COURSE AT GUTTERLINE.

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.

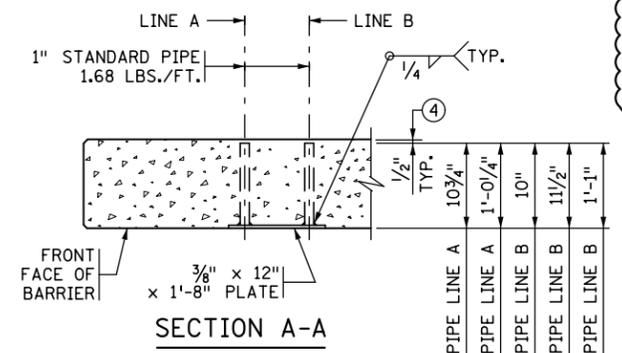
JOINT AT ABUTMENT
 (INTEGRAL OR SEMI-INTEGRAL ABUTMENT)

INSIDE ELEVATION OF BARRIER
 CONCRETE WEARING COURSE NOT SHOWN

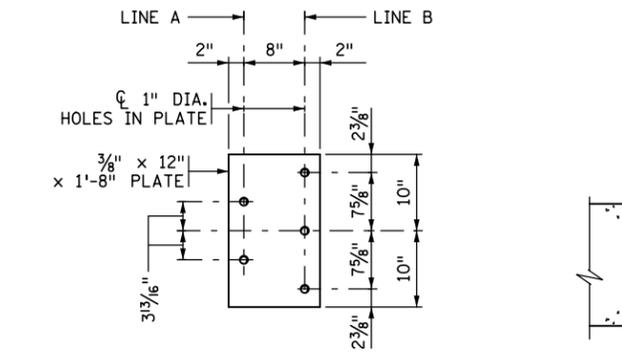
BARRIER MEETS NCHRP 350 TL-4 REQUIREMENTS ON BRIDGE DECK AND TL-3 ON APPROACH PANEL.

BILL OF REINFORCEMENT FOR BARRIER

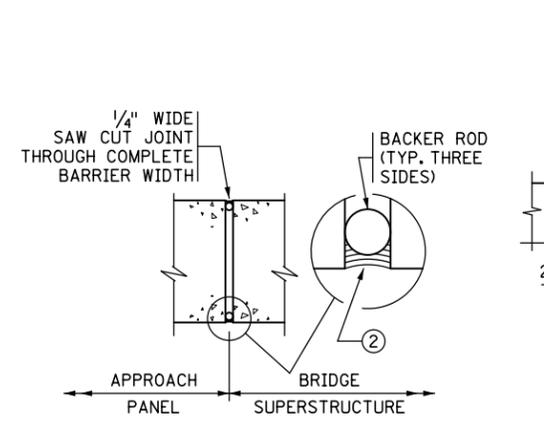
BAR	NO.	LENGTH	SHAPE	LOCATION
R501E		5'-4"		BARRIER DOWEL
R502E		5'-6"		BARRIER DOWEL
R503E		5'-5"		BARRIER DOWEL
R504E		7'-5"		BARRIER VERTICAL
R505E	-- SER. OF 4	6'-11" TO 7'-3"		BARRIER VERTICAL
R506E		6'-9"		BARRIER VERTICAL
R407E		10'-3"		BARRIER LONGIT.
R4__E				BARRIER LONGIT.
R4__E				BARRIER LONGIT.
R4__E				BARRIER LONGIT.
R4__E				BARRIER LONGIT.



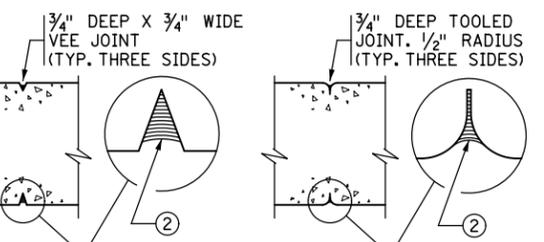
SECTION A-A
 (REINFORCEMENT NOT SHOWN)
 TRIM GUARDRAIL BOLTS SUCH THAT NO MORE THAN 1/2" PROTRUDES FROM BACK FACE OF BARRIER.
 ☆ DIMENSIONS INCLUDE 3/8" PLATE



GUARDRAIL CONNECTION DETAIL
 GALVANIZE AFTER FABRICATION PER SPEC. 3394
 ESTIMATED WEIGHT = 34 LBS.

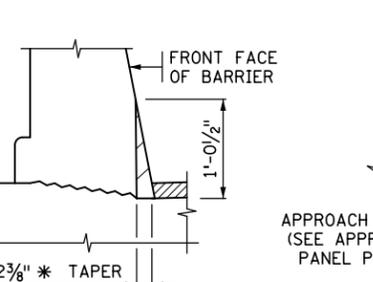


SECTION D-D

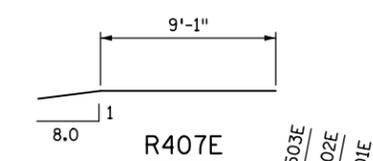


SECTION C-C
 CONTRACTOR OPTION 1 CONTRACTOR OPTION 2

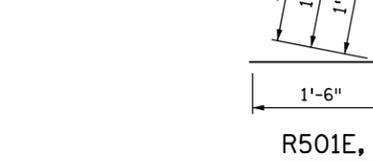
CONTROL JOINT DETAILS
 WHEN USING SLIP FORM METHOD TO PLACE THE CONCRETE, CUT JOINT 3 INCHES DEEP USING MARGIN TROWEL OR SIMILAR MEANS IMMEDIATELY AFTER CONCRETE PLACEMENT (TYP. THREE SIDES).



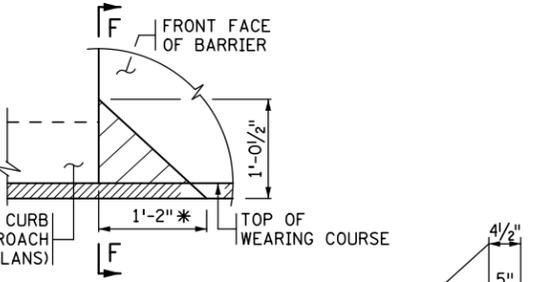
VIEW F-F
 AT BARRIER END



DETAIL "A"
 ELEVATION VIEW
 (WEARING COURSE SHOWN)



R501E, R502E, R503E



R504E, R505E, R506E

- GENERAL NOTES**
- MEASURE PAYMENT LENGTH BETWEEN THE OUTSIDE ENDS OF THE BARRIER.
 - CONCRETE BARRIER = 500 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.
 - DIMENSIONS TO BE DETERMINED BASED ON THE BRIDGE DECK SLOPE.
 - REMOVE CONCRETE FROM PIPE ENDS AFTER SLIPFORMING OR FORM REMOVAL.

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

CERTIFIED BY _____
 LICENSED PROFESSIONAL ENGINEER DATE _____
 NAME: _____ LIC. NO. _____

TITLE: **SINGLE SLOPE CONCRETE BARRIER 36" (TYPE S, TL-4)**
 INTEGRAL OR SEMI-INTEGRAL ABUTMENT WITH BRIDGE SLAB SIDEWALK AND GUARDRAIL CONNECTION (WITH 2" CONCRETE WEARING COURSE)

DES: _____ DR: _____
 CHK: _____ CHK: _____
 APPROVED: _____
 SHEET NO. OF SHEETS BRIDGE NO. _____

FIG. 5-397.138(D)