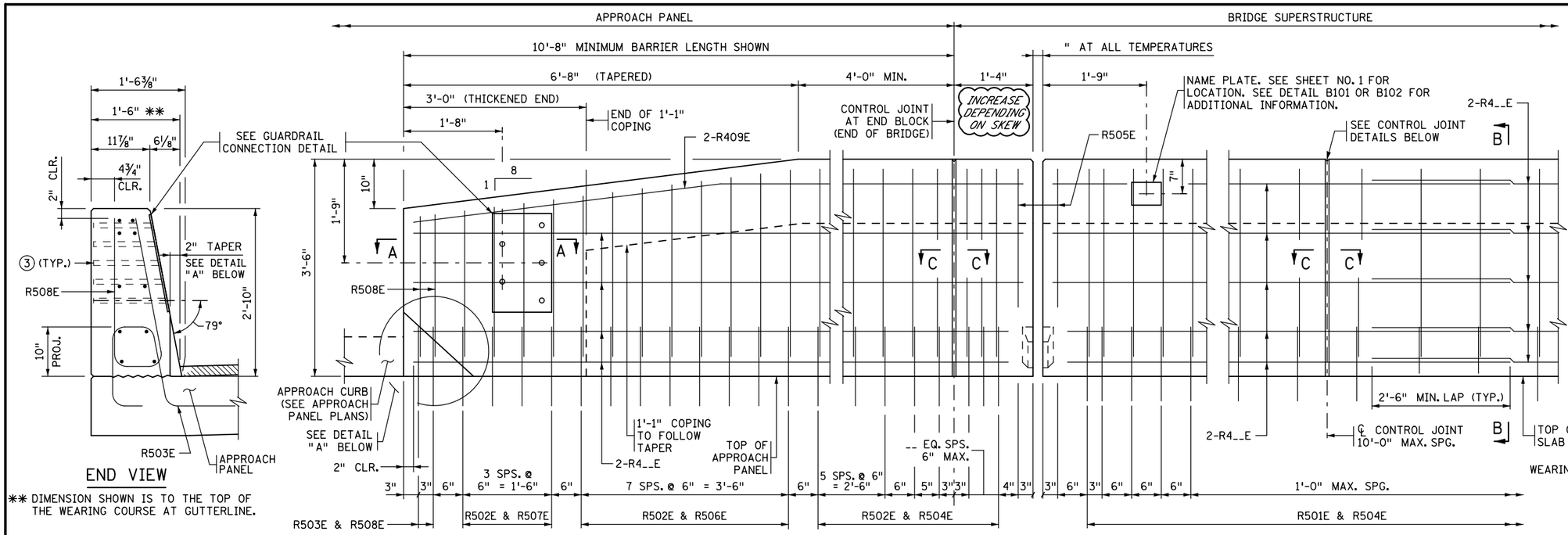
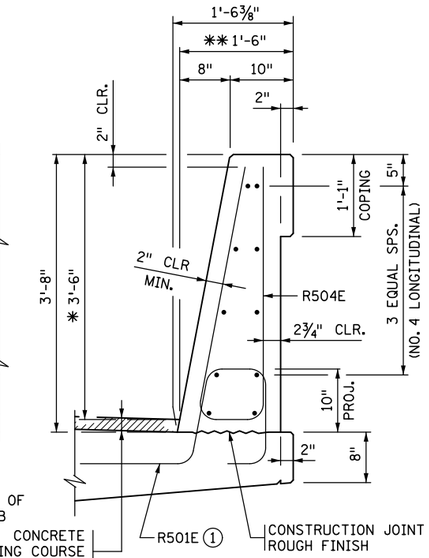


END VIEW

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



SECTION B-B

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

EXPANSION JOINT ④

EXPANSION DEVICE NOT SHOWN

CONTROL JOINT

INSIDE ELEVATION OF BARRIER

CONCRETE WEARING COURSE NOT SHOWN

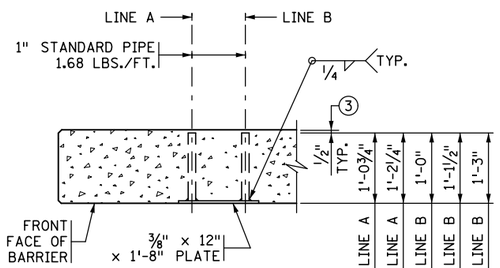
BARRIER MEETS NCHRP 350 TL-4 REQUIREMENTS ON BRIDGE DECK AND TL-3 ON APPROACH PANEL.

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 AND LINK WITH ADJACENT RETAINING WALLS.

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'-6"		BARRIER VERTICAL
R505E		5'-4"		BARRIER VERTICAL
R506E	-- SER. OF 4	6'-7" TO 7'-5"		BARRIER VERTICAL
R507E	-- SER. OF 4	6'-1" TO 6'-5"		BARRIER VERTICAL
R508E		5'-10"		BARRIER VERTICAL
R409E		11'-7"		BARRIER LONGIT.
R4__E				BARRIER LONGIT.
R4__E				BARRIER LONGIT.
R4__E				BARRIER LONGIT.
R4__E				BARRIER LONGIT.

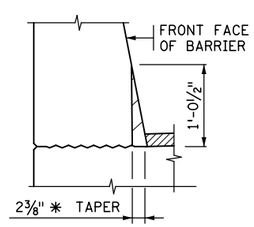


SECTION A-A

(REINFORCEMENT NOT SHOWN)

TRIM GUARDRAIL BOLTS SUCH THAT NO MORE THAN 1½" PROTRUDES FROM BACK FACE OF BARRIER.

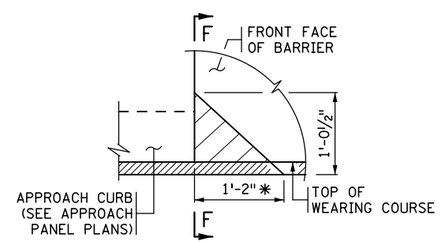
☆ DIMENSIONS INCLUDE ⅜" PLATE



VIEW F-F

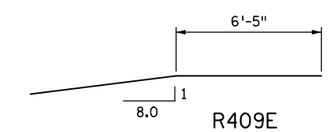
AT BARRIER END

* AT TOP OF STRUCTURAL SLAB

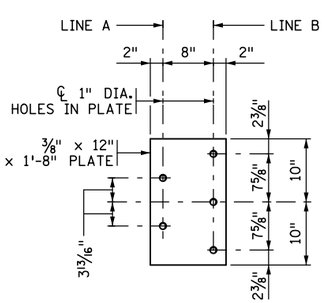


DETAIL "A"

ELEVATION VIEW
(WEARING COURSE SHOWN)

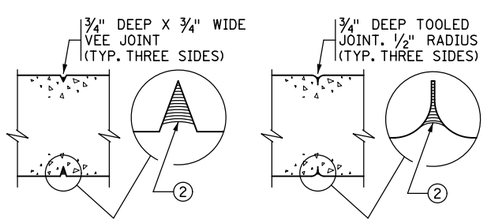


R409E



GUARDRAIL CONNECTION DETAIL

GALVANIZE AFTER FABRICATION PER SPEC. 3394
ESTIMATED WEIGHT = 35 LBS.



SECTION C-C

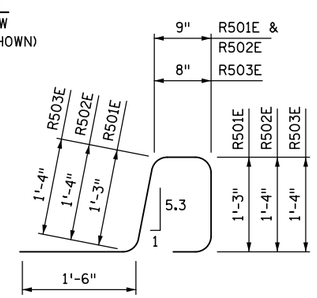
CONTRACTOR OPTION 1

SECTION C-C

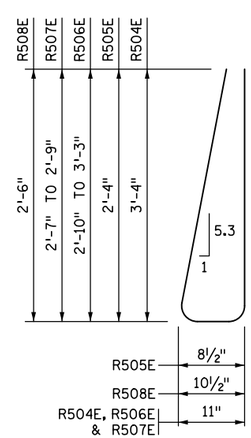
CONTRACTOR OPTION 2

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).



R501E, R502E & R503E



R504E, R505E, R506E, R507E, R508E

GENERAL NOTES

MEASURE PAYMENT LENGTH BETWEEN THE OUTSIDE ENDS OF THE BARRIER.

CONCRETE BARRIER = 586 LBS./FT. (0.145 CU. YDS./FT.)

FINISH ALL EDGES OF BARRIER WITH ½" 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.

④ REFER TO "WATERPROOF EXPANSION DEVICE" STANDARD PLANS FOR COVER PLATE DETAILS.

FIG. 5-397.141(B)

REVISION:

APPROVED: AUGUST 24, 2016
Kevin Western
STATE BRIDGE ENGINEER

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

TITLE: SINGLE SLOPE CONCRETE BARRIER 42" (TYPE S, TL-4)
PARAPET ABUTMENT WITH GUARDRAIL CONNECTION (WITH 2" CONCRETE WEARING COURSE)

DES: DR: CHK: CHK:
SHEET NO. OF SHEETS

APPROVED:

BRIDGE NO.