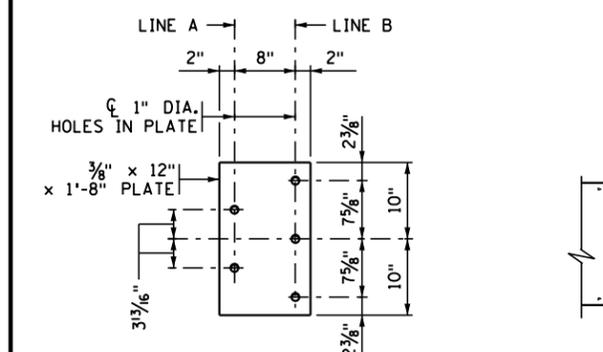


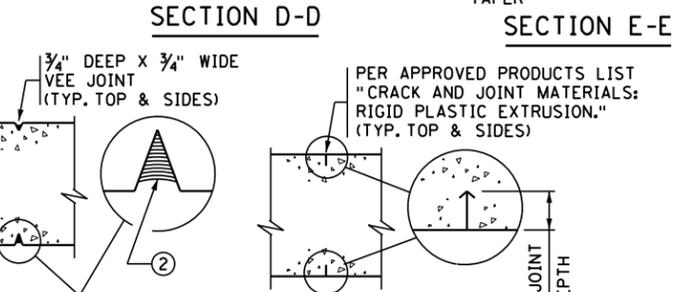
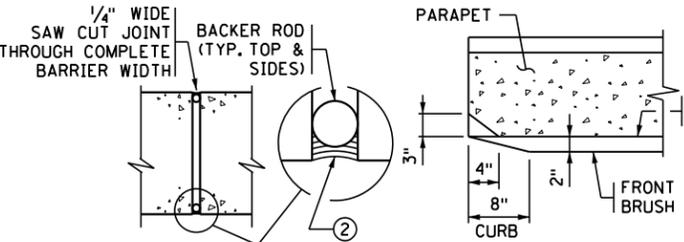
SECTION A-A
(REINFORCEMENT NOT SHOWN)
TRIM GUARDRAIL BOLTS SUCH THAT NO MORE THAN 1/2" PROTRUDES FROM BACK FACE OF PARAPET.
☆ DIMENSIONS INCLUDE 3/8" PLATE



GUARDRAIL CONNECTION DETAIL
GALVANIZE AFTER FABRICATION PER SPEC. 3394
ESTIMATED WEIGHT = 37 LBS.

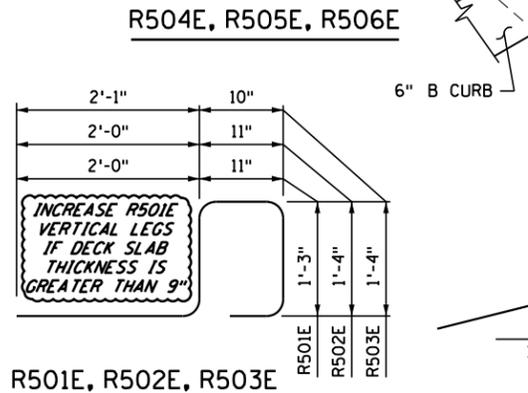
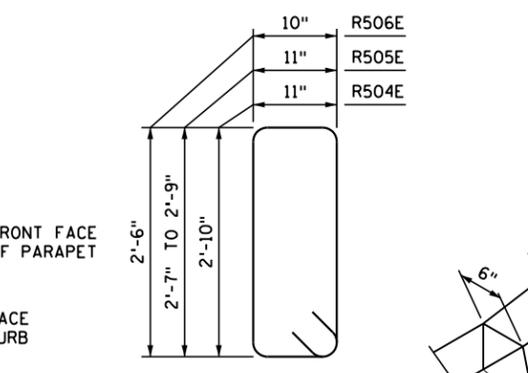
DESIGNER NOTE (REMOVE PRIOR TO PRINTING FINAL PLANS)
MINIMUM PARAPET LENGTH ON APPROACH PANEL IS 13'-4" WITH MINIMUM OF 19 R502E AND R503E DOWELS WITH ACCOMPANYING APPROPRIATE PARAPET VERTICAL BARS, 12" MAX. SPACING. VERIFY APPROACH PARAPET LENGTH, NEED FOR A GUARDRAIL CONNECTION, WITH ROADWAY DESIGNER. REFER TO MEMO TO DESIGNERS *2020-01 FOR ADDITIONAL REQUIREMENTS REGARDING PARAPET PLACEMENT.

DESIGNER NOTE (REMOVE PRIOR TO PRINTING FINAL PLANS)
FOR BRIDGES WITH SUPERELEVATION EXCEEDING 2%, SHOW THE PARAPET FRONT FACE DIMENSIONS AS INDICATED ON THIS SHEET, AND ALSO CALCULATE AND SHOW THE PARAPET BACK FACE DIMENSIONS. ALSO VERIFY THAT BAR R501E, R502E & R503E HAS 10" MIN. PROJECTION WHEN CROSS SLOPE VARIES FROM NORMAL 0.02 FT/FT

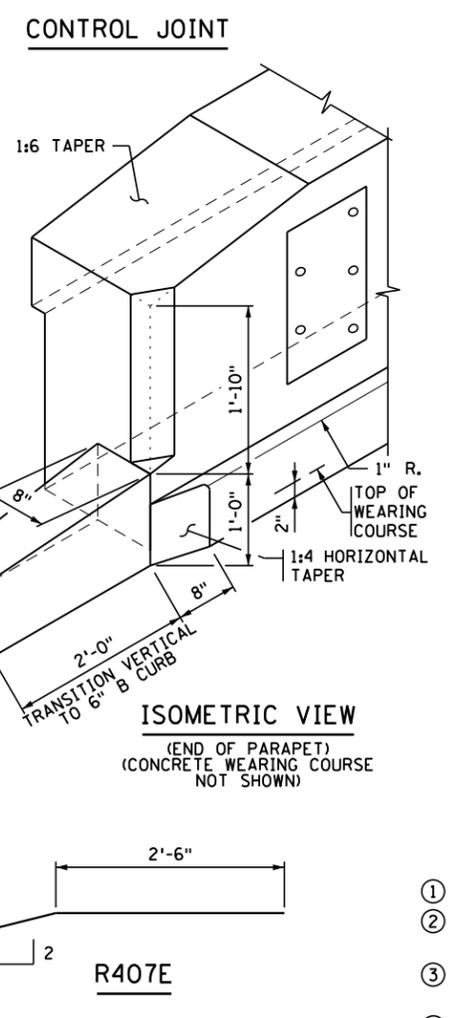


SECTION C-C CAST-IN-PLACE CONSTRUCTION
SECTION C-C SLIPFORM CONSTRUCTION
CONTROL JOINT DETAILS
PER APPROVED PRODUCTS LIST "CRACK AND JOINT MATERIALS: RIGID PLASTIC EXTRUSION." (TYP. TOP & SIDES)

JOINT AT ABUTMENT
(INTEGRAL OR SEMI-INTEGRAL ABUTMENT)
INSIDE ELEVATION OF PARAPET
(CONCRETE WEARING COURSE NOT SHOWN)
PARAPET MEETS MASH TL-4 REQUIREMENTS ON BRIDGE DECK AND TL-3 ON APPROACH PANEL



R501E, R502E, R503E
R504E, R505E, R506E
R407E



R501E, R502E, R503E
R504E, R505E, R506E
R407E

BILL OF REINFORCEMENT FOR PARAPET				
BAR	NO.	LENGTH	SHAPE	LOCATION
R501E		5'-11"	□	PARAPET DOWEL
R502E		6'-1"	□	PARAPET DOWEL
R503E		6'-1"	□	PARAPET DOWEL
R504E		8'-5"	□	PARAPET VERTICAL
R505E	--SER. OF 3 TO	7'-11" TO 8'-3"	□	PARAPET VERTICAL
R506E		7'-7"	□	PARAPET VERTICAL
R407E		4'-4"	—	PARAPET LONGIT.
R4_E			—	PARAPET LONGIT.
R4_E			—	PARAPET LONGIT.
R4_E			—	PARAPET LONGIT.
R4_E			—	PARAPET LONGIT.

GENERAL NOTES
MEASURE PAYMENT LENGTH BETWEEN THE OUTSIDE ENDS OF THE PARAPET.
FOR SLIPFORM CONSTRUCTION, TIE 100% OF THE REINFORCEMENT BAR INTERSECTIONS IN THE PARAPET.
CONCRETE PARAPET = 658 LBS./FT. (0.162 CU. YDS./FT.)
FINISH ALL EDGES OF PARAPET 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 IN ACCORDANCE WITH SPEC. 3306.
GUARDRAIL CONNECTION AND NAMEPLATE TO BE CONSIDERED INCIDENTAL.
PARAPET 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.
- MATCH GUTTERLINE ELEVATION.

REVISED:
APPROVED: APRIL 09, 2020
Kevin Westrom
STATE BRIDGE ENGINEER

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

TITLE: **CONCRETE PARAPET (TYPE P-4, TL-4)**
INTEGRAL OR SEMI-INTEGRAL ABUTMENT
(WITH 2" CONCRETE WEARING COURSE)

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