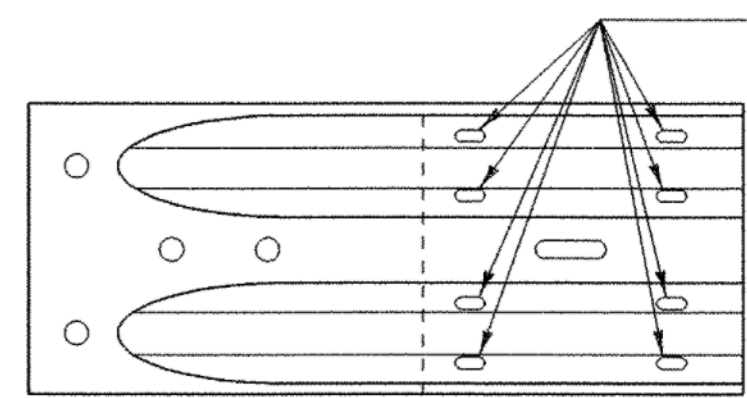


NOTE: THE FIRST GUARDRAIL PANEL ON BOTH WINGWALLS 3 AND 4 SHALL BE NESTED HEAVY DUTY STEEL BEAM GUARDRAIL. SEE RAIL LAYOUT SHEET #60 FOR DETAILS.

RAIL NOTES:

- ① NUMBER OF WINDOWS SHALL BE EQUAL.
- ② NUMBER OF WINDOWS SHALL NOT BE LESS THAN THE AMOUNT IN ①. SPAN PILASTERS MAY BE SPACED AT 1/5 POINTS IN LONG SPANS. SEE BRIDGE POINTS IN LONG SPANS. SEE BRIDGE LAYOUT OR OTHER PLAN SHEETS.
- ③ DIMENSIONS SHALL BE THE SAME FOR ALL POSTS ADJACENT TO SPAN PILASTERS IN A SPAN. DIMENSIONS MAY VARY FROM SPAN TO SPAN. MIN.=3", MAX = 7 1/2".
- ④ FOR RAIL WITHOUT PILASTERS, MIN.=6", MAX.=1'-3".
- ⑤ HOLES AND RECESSES MUST BE FORMED OR CORED. PERCUSSION DRILLING IS NOT PERMITTED.
- ⑥ REDUCE BY 2" OR FIELD BEND OVER BITUMINOUS FIBER TO GAIN COVER.

- ⑦ OMIT IF HD STEEL BEAM GUARD RAIL, GALVANIZED IS NOT USED.
- ⑧ 1 3/8" DIA. WASHERS ARE REQUIRED UNDER 7/8" DIA. BOLT HEADS AND NUTS.
- ⑨ PLACE ADDITIONAL #4 LONGITUDINAL BAR (INCLUDED AS PART OF RAILING REINFORCEMENT) WHEN U BARS ARE EMBEDDED LESS THAN 5".
- ⑩ CIP SLABS: (WITH U BARS CAST IN SLAB). SLAB THICKNESS + SIDEWALK THICKNESS + 6".
- CIP SLABS: (WITH U BARS RESTING ON SLAB). 7 1/2" + SIDEWALK THICKNESS.
- CG SPANS: 12 1/2" + SIDEWALK THICKNESS.
- BOX BEAMS: (WITH U BARS CAST IN BOX). 11 1/2" + OVERLAY + SIDEWALK THICKNESS.
- BOX BEAMS: (WITH U BARS RESTING ON BOX). 7 1/2" + OVERLAY + SIDEWALK THICKNESS.



W BEAM TERMINAL CONNECTOR MODIFICATION  
NOT TO SCALE

THE EIGHT (8) SLOTTED HOLES USED TO ATTACH THE STEEL BEAM GUARDRAIL TO THE CONCRETE BRIDGE RAIL SHALL BE LENGTHENED FROM 1 1/8" TO 2 3/4". THIS MODIFICATION IS ONLY FOR TERMINAL CONNECTORS AT THE EXPANSION END (WINGWALLS 3 AND 4).

WHEN INSTALLING THE TERMINAL CONNECTORS FOR WINGS 3 & 4, THE FIRST W BEAM GUARDRAIL PANEL SHALL BE BOLTED TO THE TERMINAL CONNECTOR, CENTERING THE BOLTS WITHIN THE SLOTS, HAND TIGHTEN ONLY, AND BURRING THE THREADS. THE TERMINAL CONNECTOR CAN THEN BE ATTACHED TO THE CONCRETE RAILING.

Note 'A':  
HD Steel Beam Guard Rail, Galvanized must be attached to the bridge rail and extend along the embankment unless curb and sidewalk extends and if so shown elsewhere on plans. See plan sheets for details and length for payment. The splice between the approach guard rail and the Terminal Connector shall be with the normal 8 bolts.

**CONC. BRIDGE RAIL DETAILS**

PROJECT NAME:	BARTON
PROJECT NUMBER:	BRO 1449 (29)
FILE NAME: /str5/01j168/sj168tex.dgn	PLOT DATE: 02-APR-2007
PROJECT LEADER: W.SYMONDS	DRAWN BY: J.GILMORE
DESIGNED BY: J.REED	CHECKED BY: J.REED
sj168tx1.i	SHEET 61 OF 84