

Overview of Revisions and New Bridge Standards

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Office of Bridges and Structures

Iowa DOT

Overview

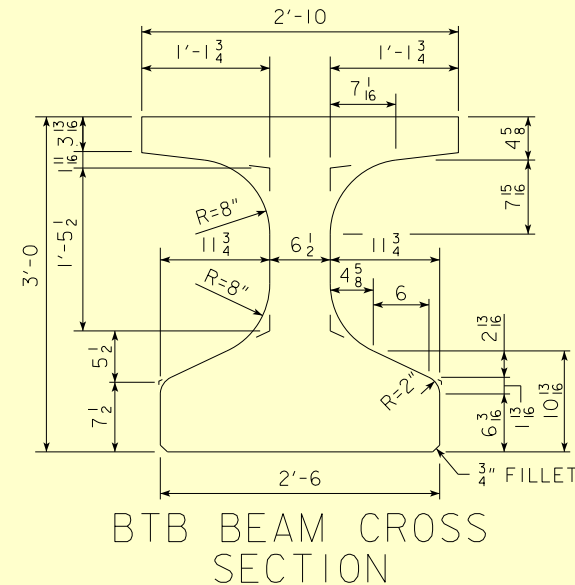
- Bulb tees BTB and BTE (New – Feb. 2008)
- 44 in F-Section Standard (New – Nov. 2007)
- Barrier end section (Revised – Feb. 2008)
- Open Rail TL-4 (New w/ J & H Stand 2006)
- Abutment wing (Revised – Feb. 2008)
- Expansion joint (Revised – Nov. 2008)
- Embedded deck hangers (Revised – May 2008)

Overview (Cont)

- P10L (New – Jan. 2009)
- J Standards (Revised – Nov./Dec 2008)
- H Standards (Revision in process)

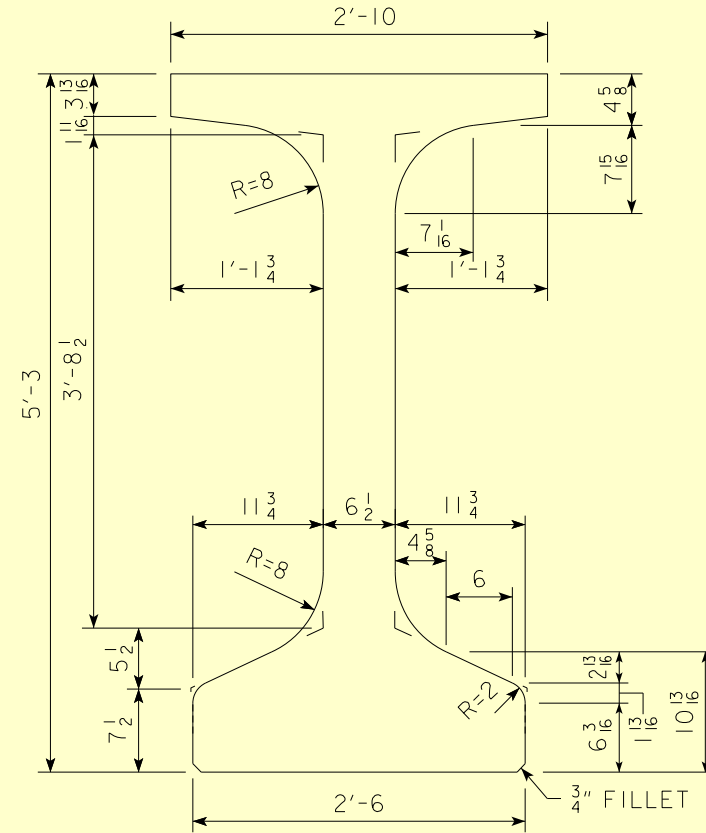
New Bulb Tee Standards

- BTB
- 36 inch
- 660 lbs/ft
- Spans 30-105 ft



New Bulb Tee Standards

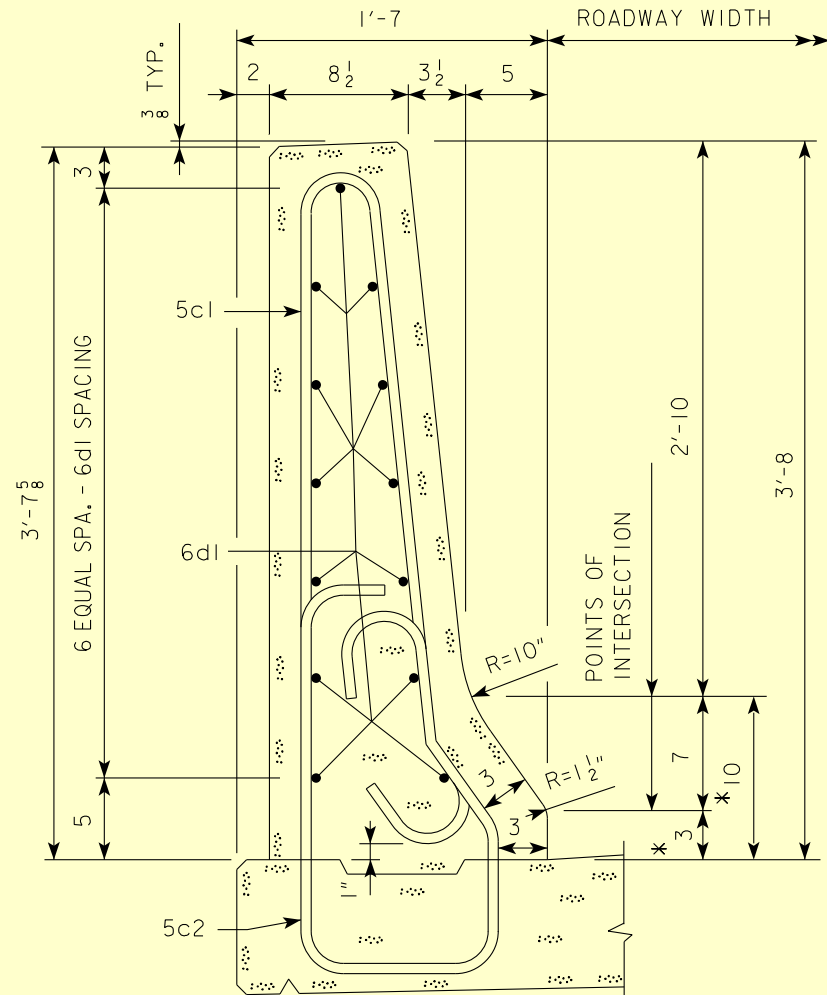
- BTE
- 63 inches
- 840 lbs/ft
- Spans 60-155ft



BTE BEAM CROSS SECTION

F-Section

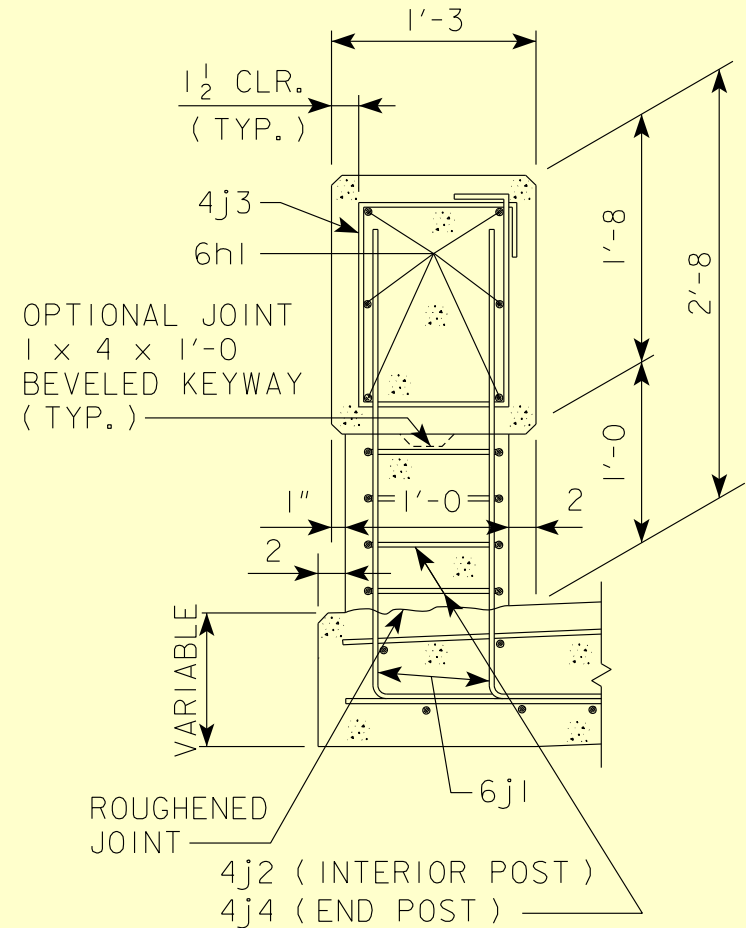
- 44 inches
- TL-5
- Single 5c1 bar
- #6 bars longitudinal



PART SECTION C-C

Open Railing (TL-4)

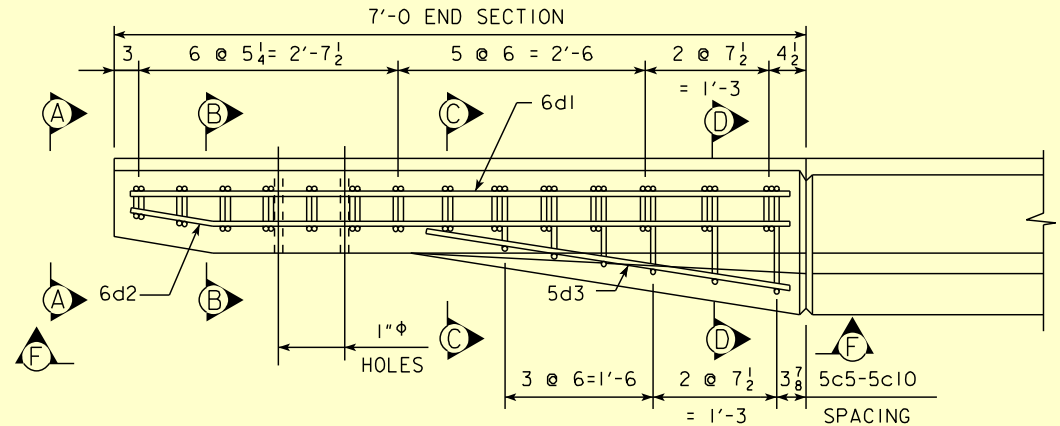
- Same test level as 34 inch F section
- Use local and primary
- Continuous rail
- 2 ft wide posts
- 3 inches taller



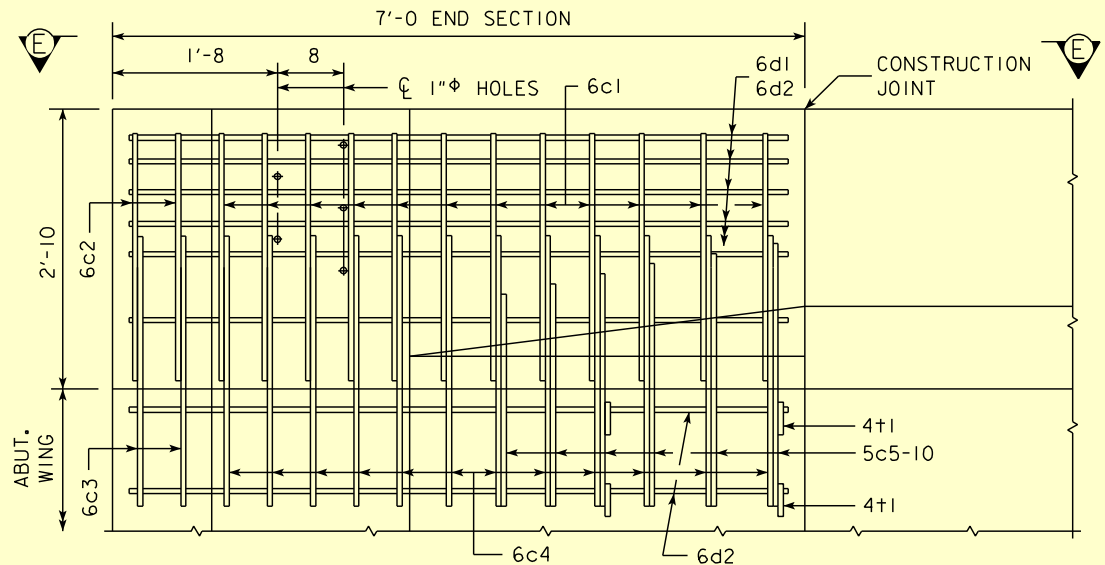
PART SECTION D-D

End Section

- 1/2 in thicker
- #6 bars
- Wider bar spacing



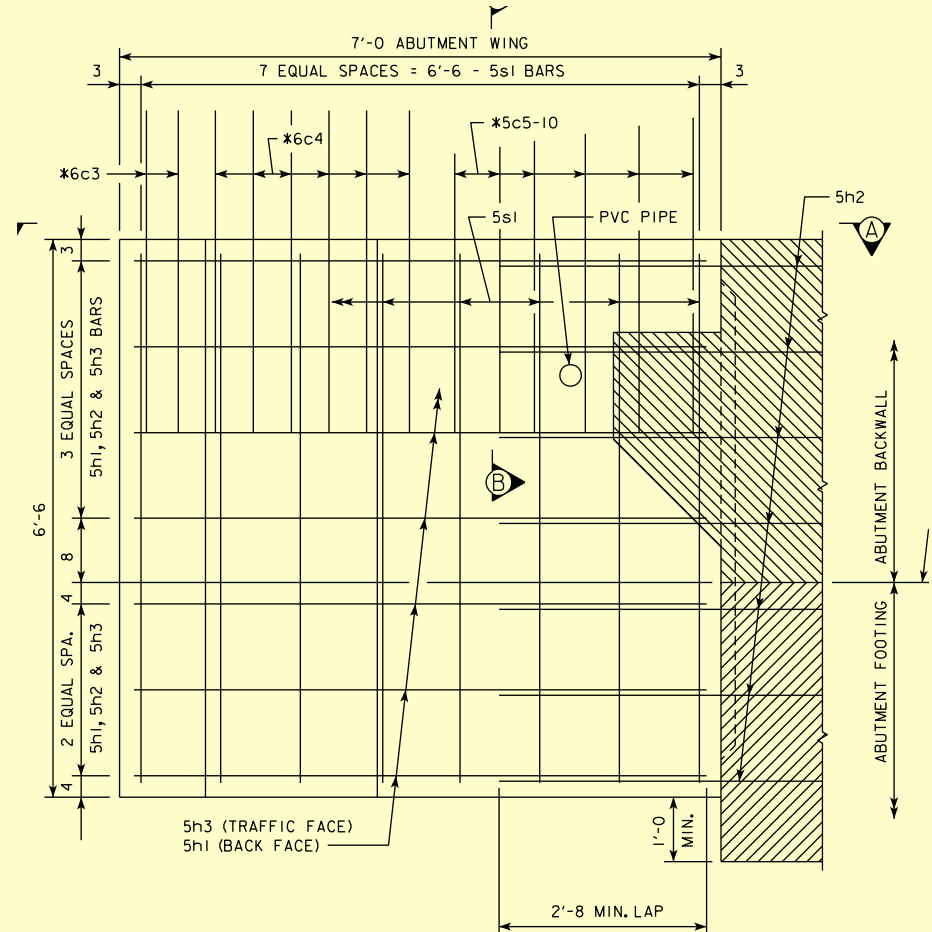
PART VIEW E-E



PART VIEW F-F

Abutment Wing

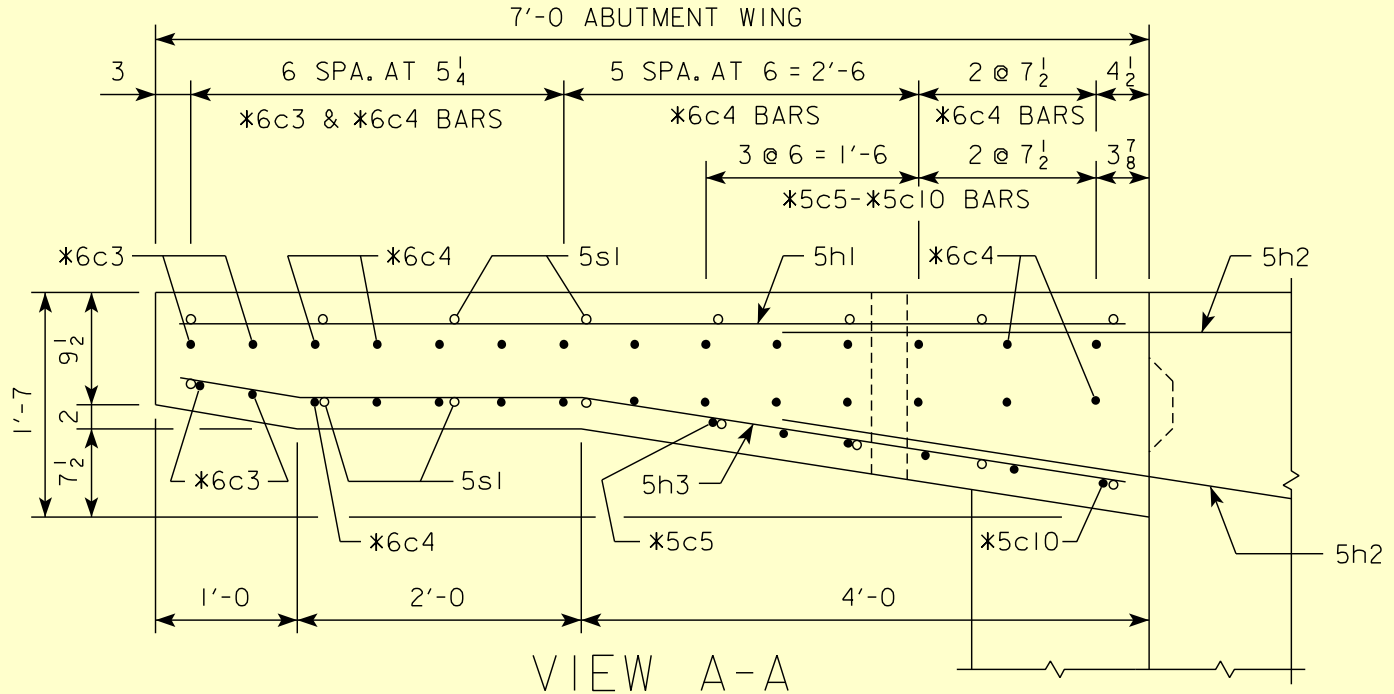
- Rectangular
- Variable Depth
- Matches barrier end section



ABUTMENT WING - ELEVATION VIEW



Abutment Wing



Expansion Joints

- Two bid items
 - Steel Extrusion Joint, with Neoprene
 - Neoprene Gland Installation and Testing
- Installation of gland includes testing for leaks

Embedded Deck Hangers

- Corrosion protection on all embedded deck hanger (electroplated or galvanized).
- Hangers shall be long enough to be embedded over the web area (bulb tees).

P10L Pile Bent Standard

- Added G (Minimum Below Ground)
- Revised H (Maximum Above Ground)

STEEL H PILE		HP10x42	HP10x57	HP12x53	HP14x73	HP14x89	
G MINIMUM BELOW GROUND	FT.	18	18	21	24	24	
H MAXIMUM ABOVE GROUND	FT.	13	14	18	25	26	
SQUARE	CONCRETE (E=18')	C.Y.	1.12	1.10	1.41	1.74	1.72
	CONCRETE 1' CHANGE	C.Y.	0.062	0.061	0.078	0.097	0.096
	④ REINFORCING (E=18')	LB.	96	96	99	103	103
	④ REINFORCING 1' CHANGE	LB.	4.98	4.98	5.13	5.28	5.28
ROUND	CONCRETE (E=18')	C.Y.	1.40	1.38	2.02	2.75	2.73
	CONCRETE 1' CHANGE	C.Y.	0.078	0.076	0.112	0.153	0.152
	④ REINFORCING (E=18')	LB.	97	97	102	107	107
	④ REINFORCING 1' CHANGE	LB.	5.02	5.02	5.26	5.50	5.50
⑤ NOMINAL RESISTANCE	P _n KIPS	154	208	192	265	324	
BEARING VALUE MAX.	TON	37T	50T	46T	64T	78T	
f'c = 3500 PSI ; A36 STEEL							

④ INCLUDES WEIGHT OF PUNCHED $L \frac{7}{8} \times \frac{7}{8} \times \frac{1}{8}$

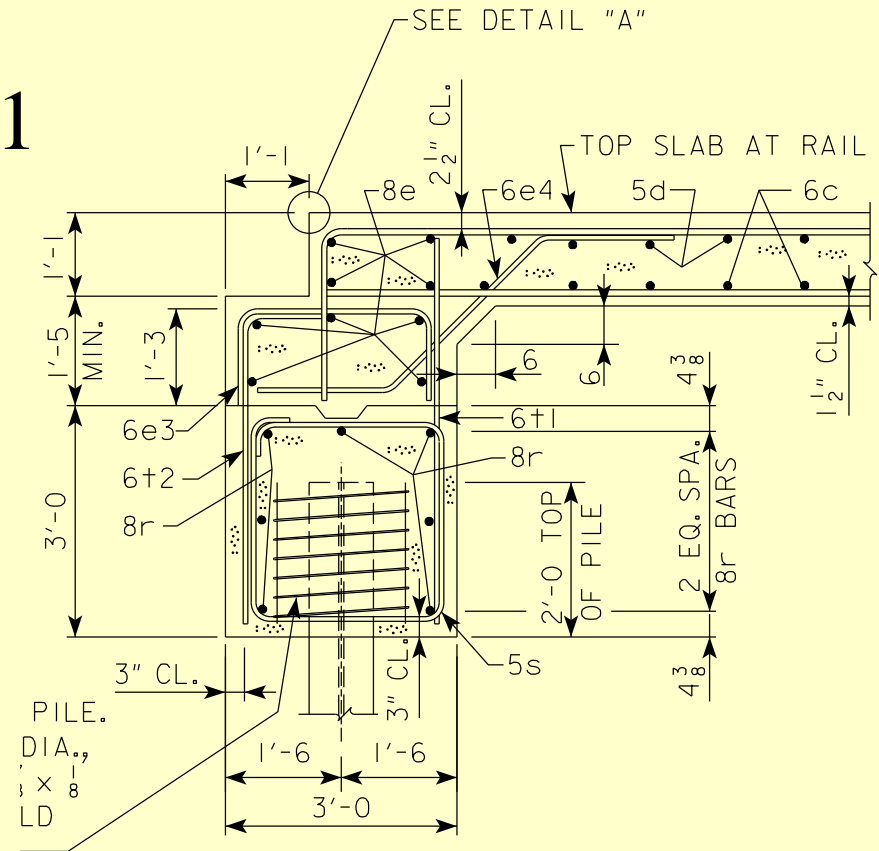
⑤ SEE BRIDGE DESIGN MANUAL 6.6.4.2 FOR ADDITIONAL INFORMATION

J Standards

- Abutment revised
 - New Paving Notch
 - New rectangular wing
- Open Rail Updated (TL-4)
- LRFD Substructure (additional piles)

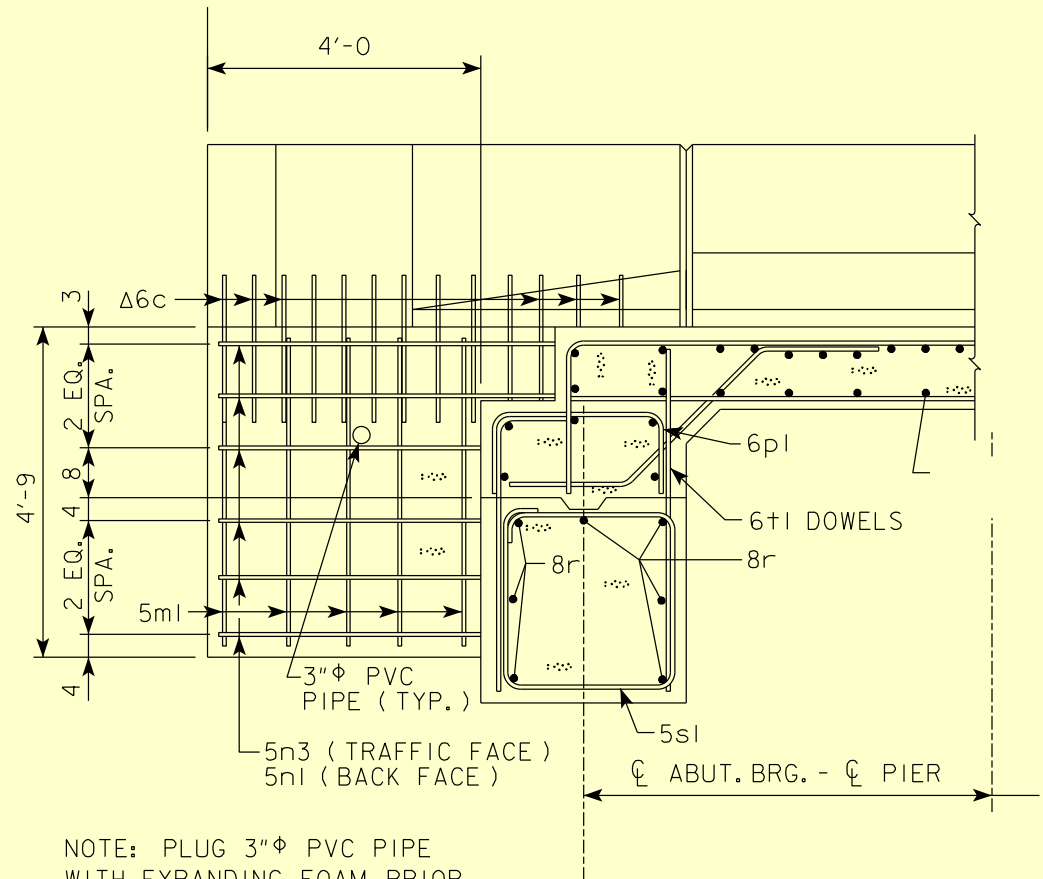
Paving Notch Revision

- Decreased width to 1'-1"
- Shifted into abutment
- Added 6e4 bar
- Added 90 degree bend for top slab steel
- Added 6 inch fillet



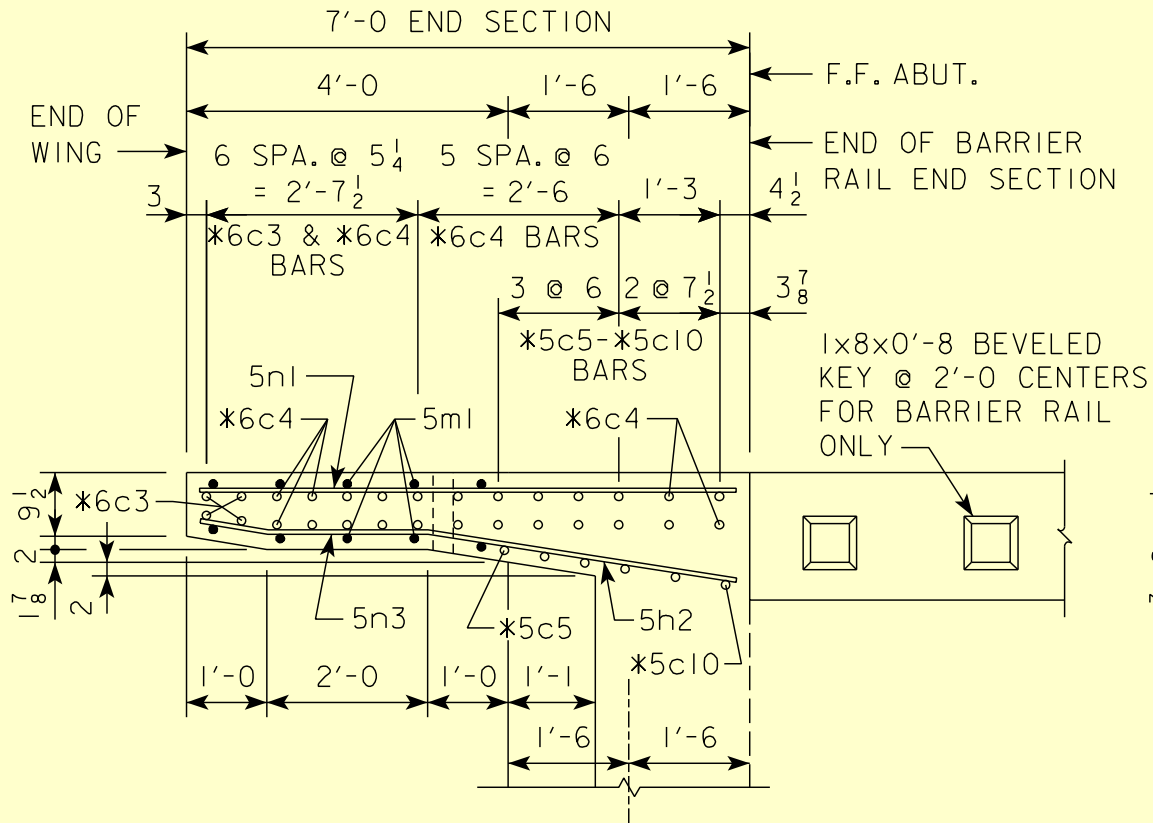
Abutment Wing Detail

- Revised to rectangular
- Match end section configuration
- Provide better confinement for backfill
- Match approach slabs



NOTE: PLUG 3" ϕ PVC PIPE
 WITH EXPANDING FOAM PRIOR
 TO BACKFILLING BEHIND
 ABUTMENTS.

Abutment Wing Detail



H Standards

- LRFD design substructure (additional piles)
- Wing revision
- End section revision
- Open rail update

Web sites

- <http://www.dot.state.ia.us/bridge/countybrgstd.htm/>
- <http://www.erl.dot.state.ia.us/>