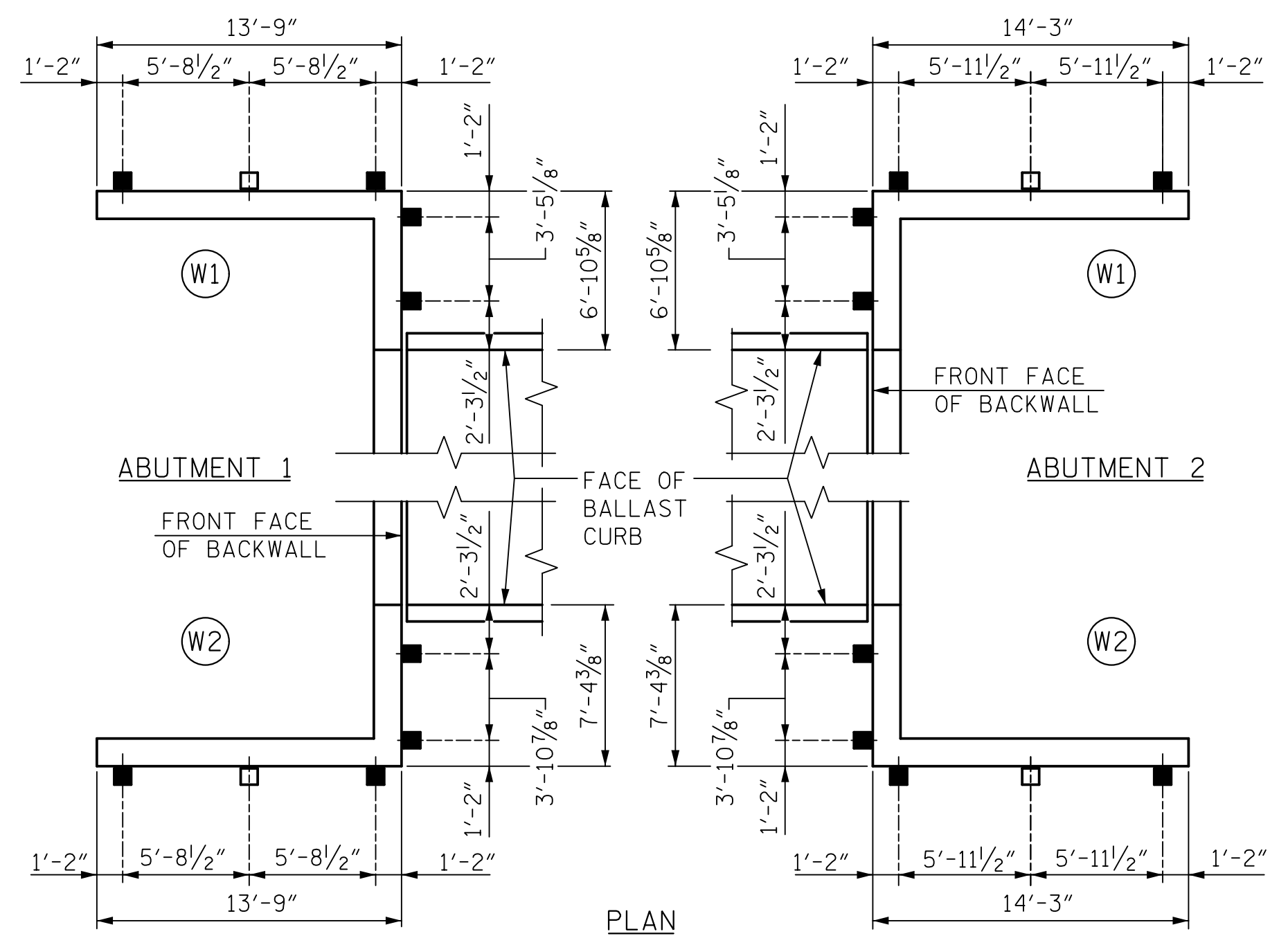
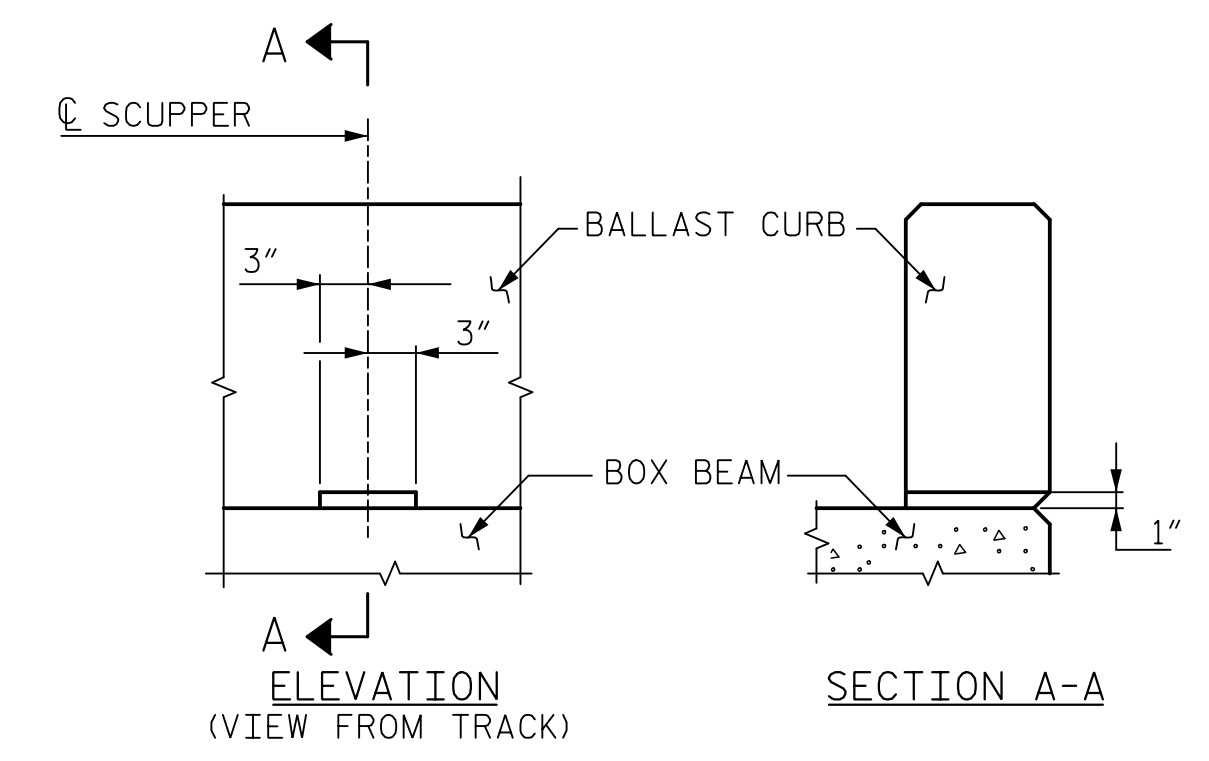


**HANDRAIL POST SPACING - BRIDGE**  
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)

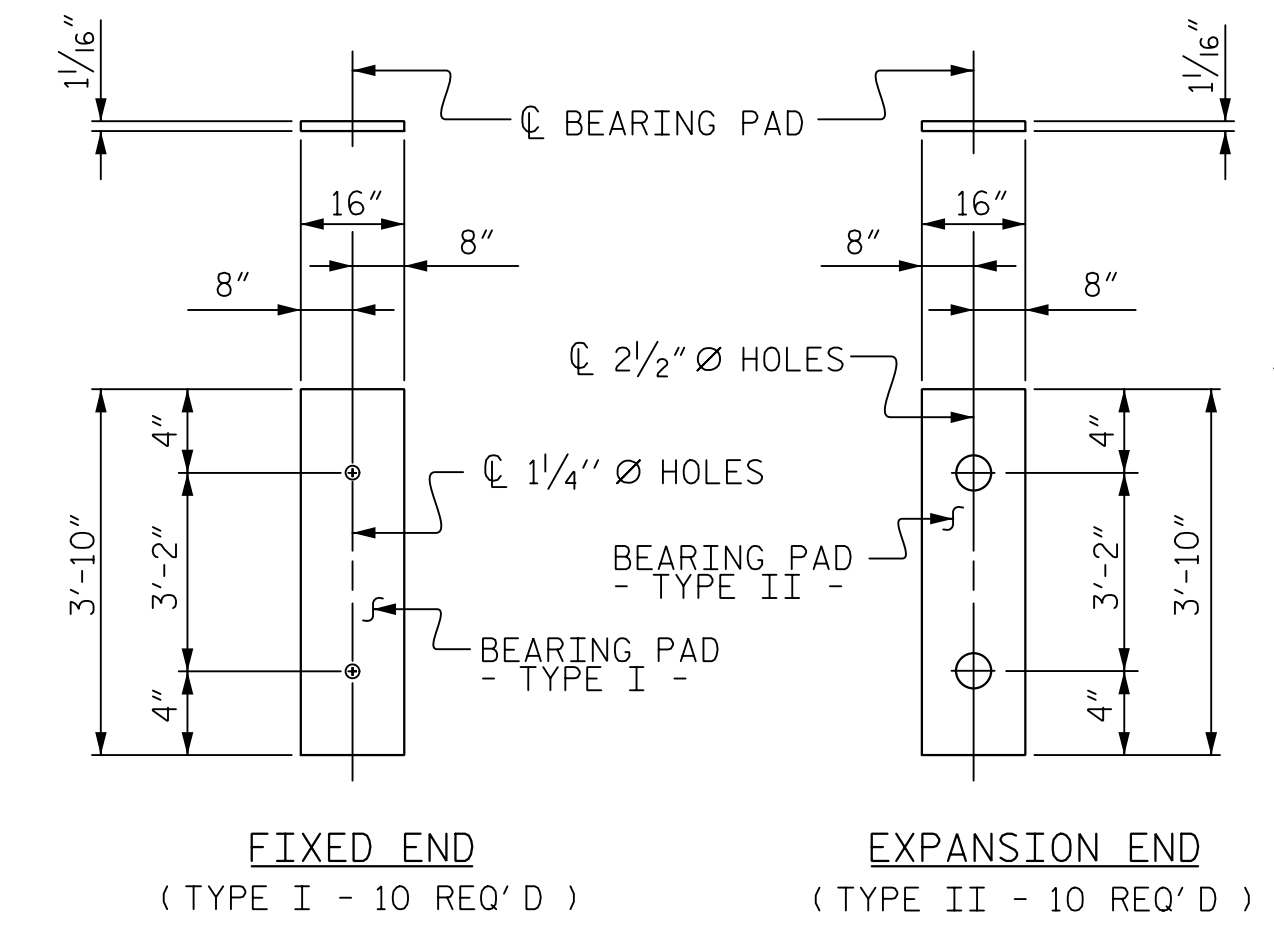
- LEGEND**
- - INTERIOR POST
  - - END POST
  - ▼ - RAIL EXPANSION JOINT



**HANDRAIL POST SPACING - WINGWALLS**

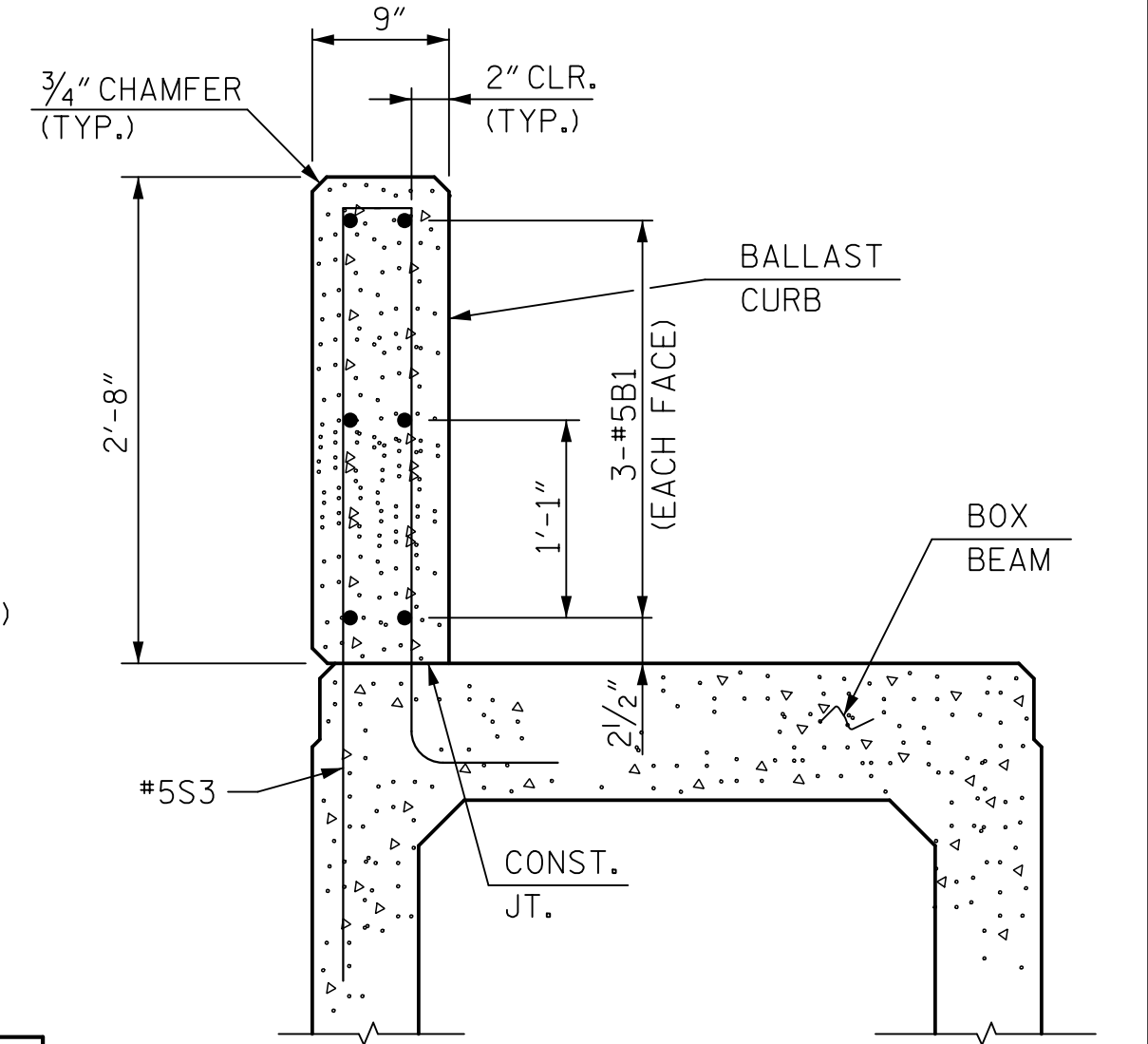


**SCUPPER DETAILS**  
(REINFORCING STEEL NOT SHOWN FOR CLARITY)

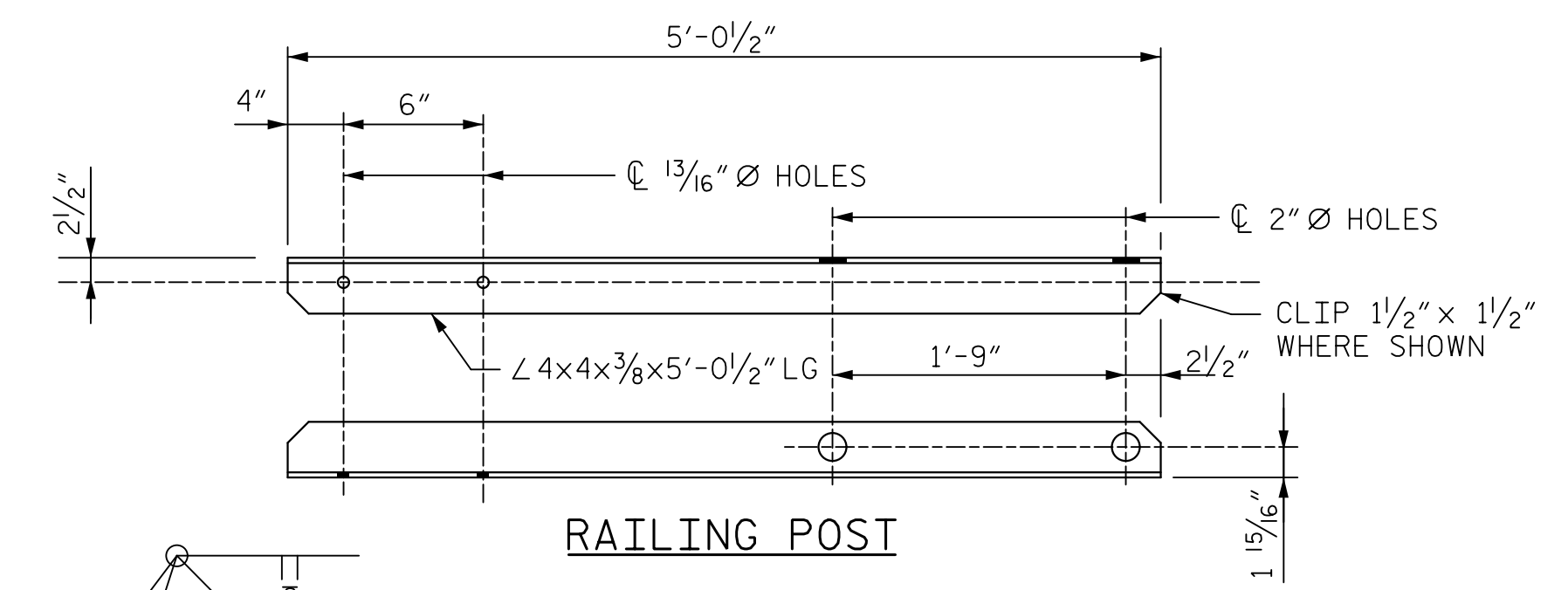


**ELASTOMERIC BEARING DETAILS**

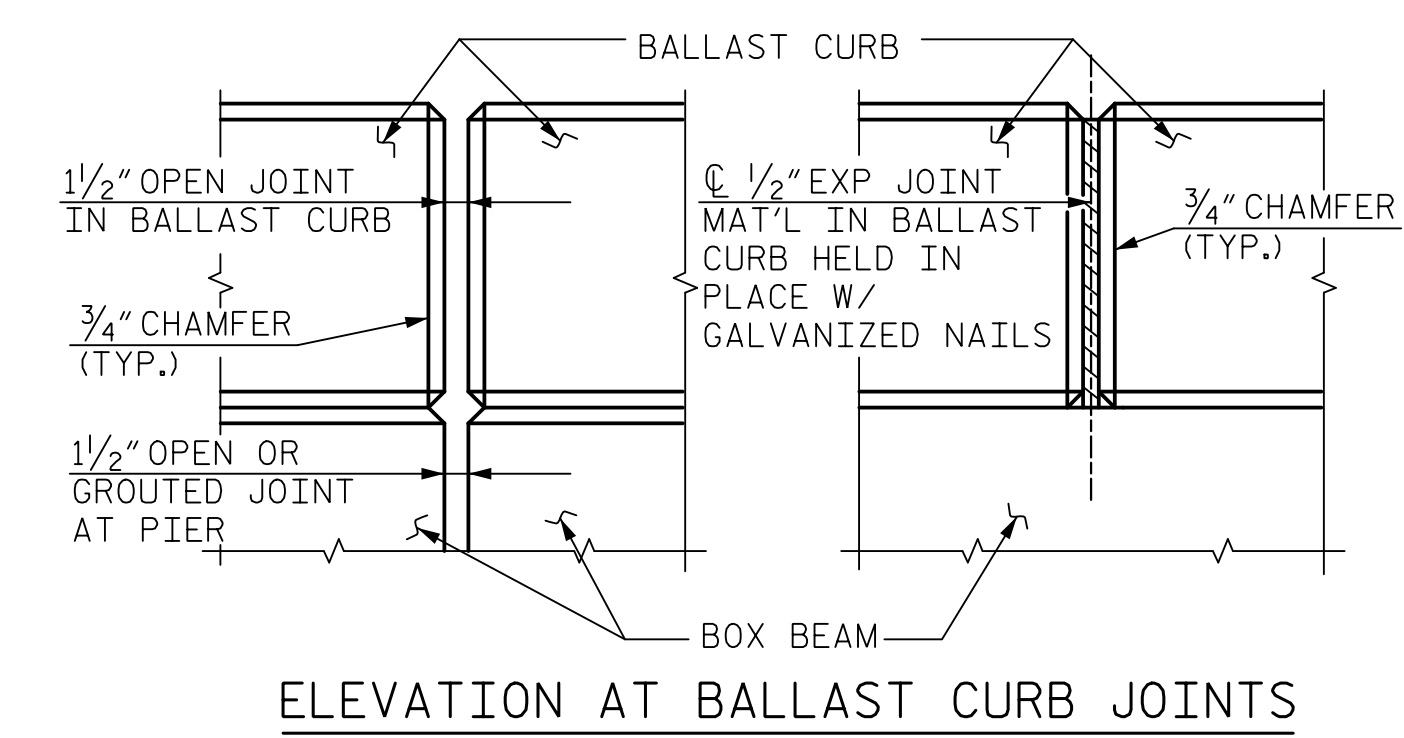
THE ELASTOMER IN THE BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.140 KSI, IN ACCORDANCE WITH AASHTO M251, AND SHALL BE 60 DUROMETER HARDNESS.



**SECTION THRU CURB**  
**BALLAST CURB DETAILS**



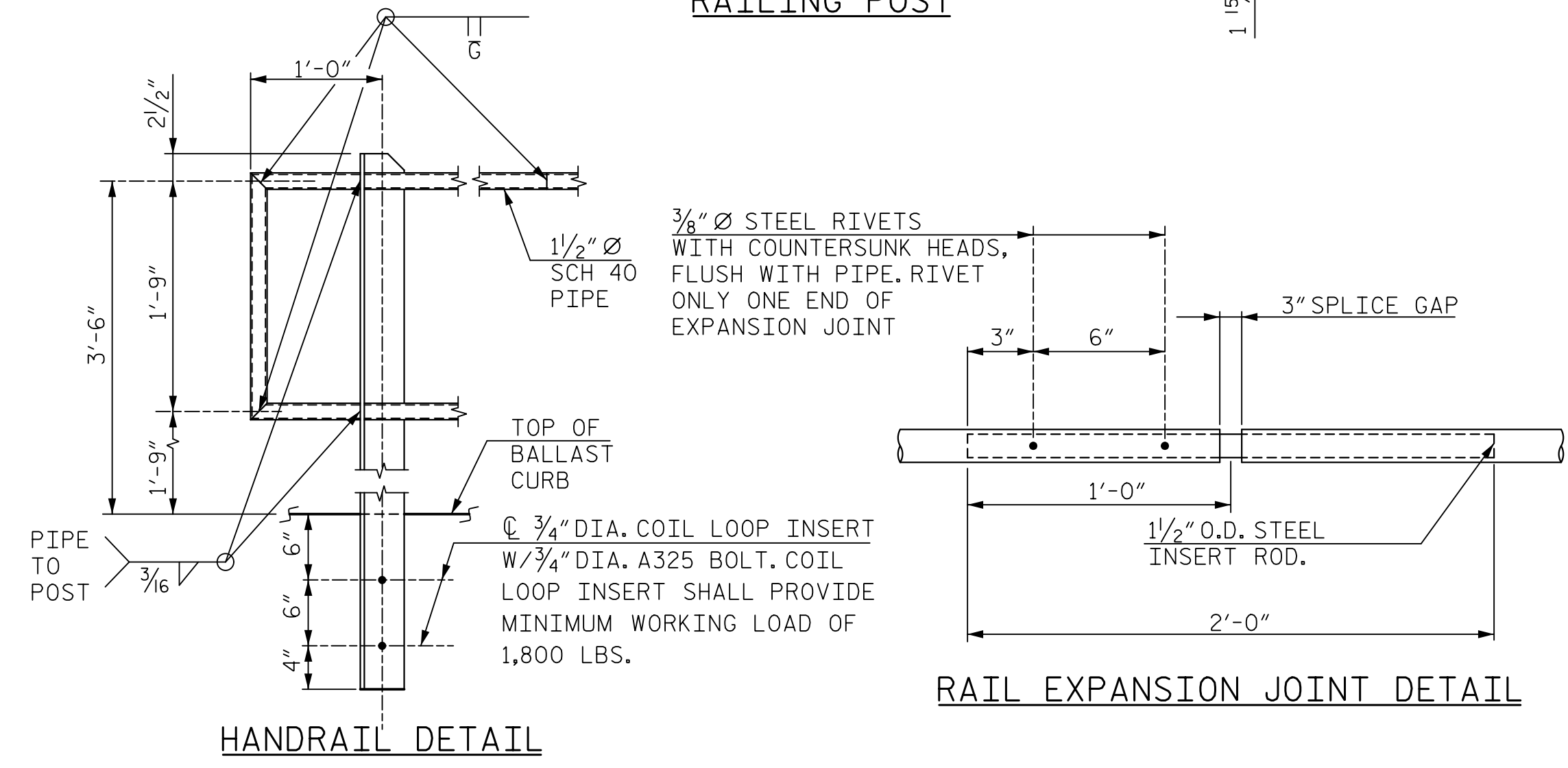
**RAILING POST**



**ELEVATION AT BALLAST CURB JOINTS**

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
SPAN A	5	55'-7 3/4"	278'-2 3/4"
SPAN B	5	55'-7 3/4"	278'-2 3/4"
TOTAL	10		556'-5 1/2"

BILL OF MATERIAL FOR BALLAST CURB						
BAR	BARS PER SPAN	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	60	60	#5	STR	10'-8"	1,335
REINFORCING STEEL						LBS. 1,335
CAST-IN-PLACE CONCRETE (5,000 PSI)						CU.YDS. 16.5
TOTAL LIN. FT. OF CONCRETE BALLAST CURB						LIN. FT. 222.6



**HANDRAIL DETAIL**

**RAIL EXPANSION JOINT DETAIL**

**NOTES:**

HANDRAIL POST SHALL BE ASTM A36 STEEL.

HANDRAIL PIPE SHALL BE ASTM A53 GRADE B STEEL.

HANDRAIL ASSEMBLIES SHALL BE SHOP-PAINTED WITH AN INORGANIC ZINC-ACRYLIC SYSTEM IN ACCORDANCE WITH SYSTEM 1 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS. TOP COAT SHALL BE WHITE, FS 17925 FEDERAL STANDARD 575 COLOR.

ALL WELDING SHALL BE IN CONFORMANCE WITH AWS D1.5, BRIDGE WELDING CODE, CURRENT EDITION.

JOINTS IN RAILING (SPlice GAP) SHALL BE LOCATED AS SHOWN IN POST SPACING PLAN.

POSTS SHALL BE SET PERPENDICULAR TO CURB AND RAILS SHALL BE PLACED PARALLEL TO GRADE OF BALLAST CURB.

CERTIFIED MILL REPORTS ARE REQUIRED FOR RAILS AND POSTS. SHOP INSPECTIONS ARE NOT REQUIRED.

THE CENTERLINE OF ANY SPLICE AND/OR EXPANSION JOINT SHALL BE LOCATED A MINIMUM OF 2'-0" FROM CENTERLINE POST. SPLICE JOINTS IN EACH OF THE TWO RAILS SHALL BE PLACED IN THE SAME LOCATION AND PANEL.

SHOP DRAWINGS FOR RAILINGS AND COIL LOOP INSERTS ARE REQUIRED AND SHALL BE SUBMITTED FOR APPROVAL.

PROJECT NO. P-4900A

ROBESON COUNTY

STATION: POS 22+07.07 -L-

MILE POST: 0.23

Designed by:  
**Paul J. Barber**

Professional Engineer  
NORTH CAROLINA  
SEAL 12916  
2/27/2015

Designed by:  
**David W. Hawkins**

Professional Engineer  
NORTH CAROLINA  
SEAL 27812  
2/27/2015

<b>HNTB</b>		HNTB NORTH CAROLINA, P.C. License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609	
DRAWN BY: M. WRIGHT	DATE: 8/14	DWG. NO. 9	
CHECKED BY: P. BARBER	DATE: 9/14		

REVISIONS			
NO.	BY:	DATE:	DATE:
1			
2			

SHEET NO. <b>S-9</b>
TOTAL SHEETS <b>54</b>

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SUPERSTRUCTURE**

**BOX BEAM SUMMARY  
AND HANDRAIL DETAILS**