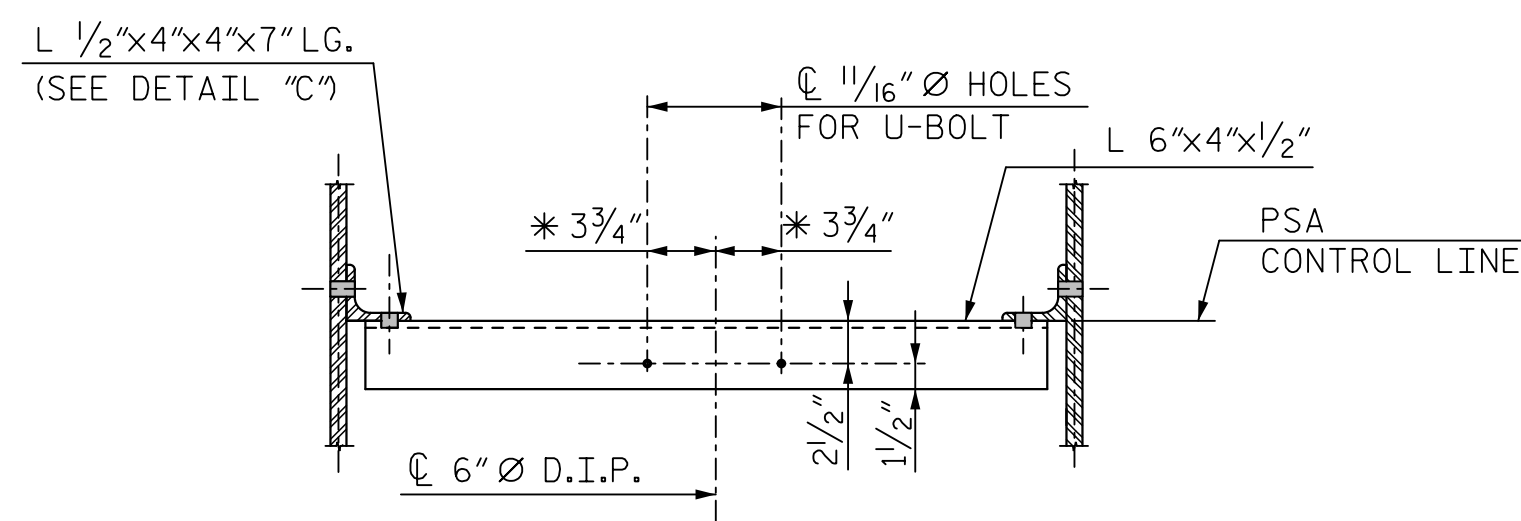
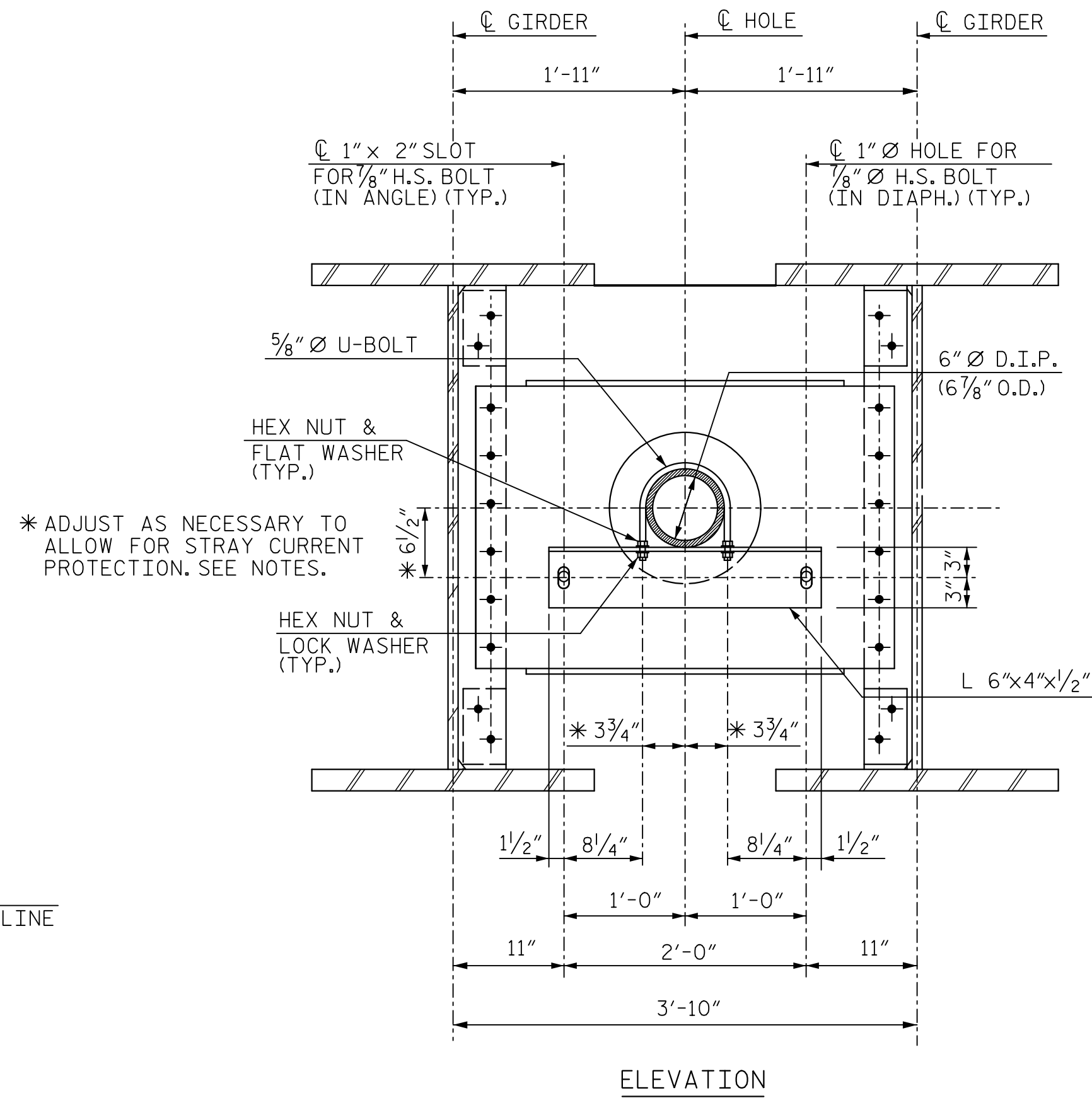


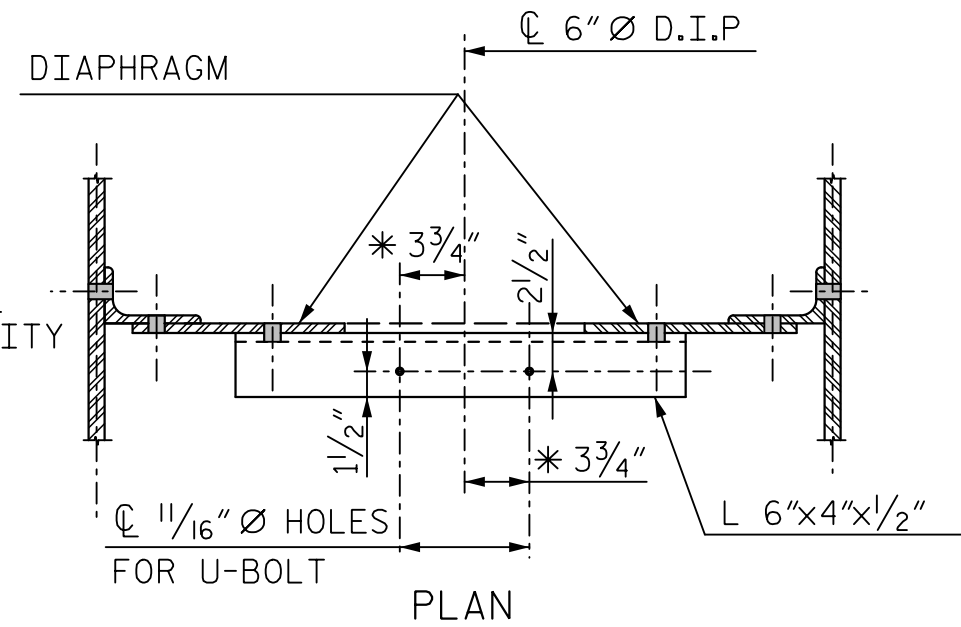
* ADJUST AS NECESSARY TO ALLOW FOR STRAY CURRENT PROTECTION. SEE NOTES.



PIPE SUPPORT ANGLE (PSA)
(8 REQ'D., SEE FRAMING PLAN AND DRAINAGE DETAILS SHEET 1 OF 4 FOR LOCATION AND ORIENTATION)

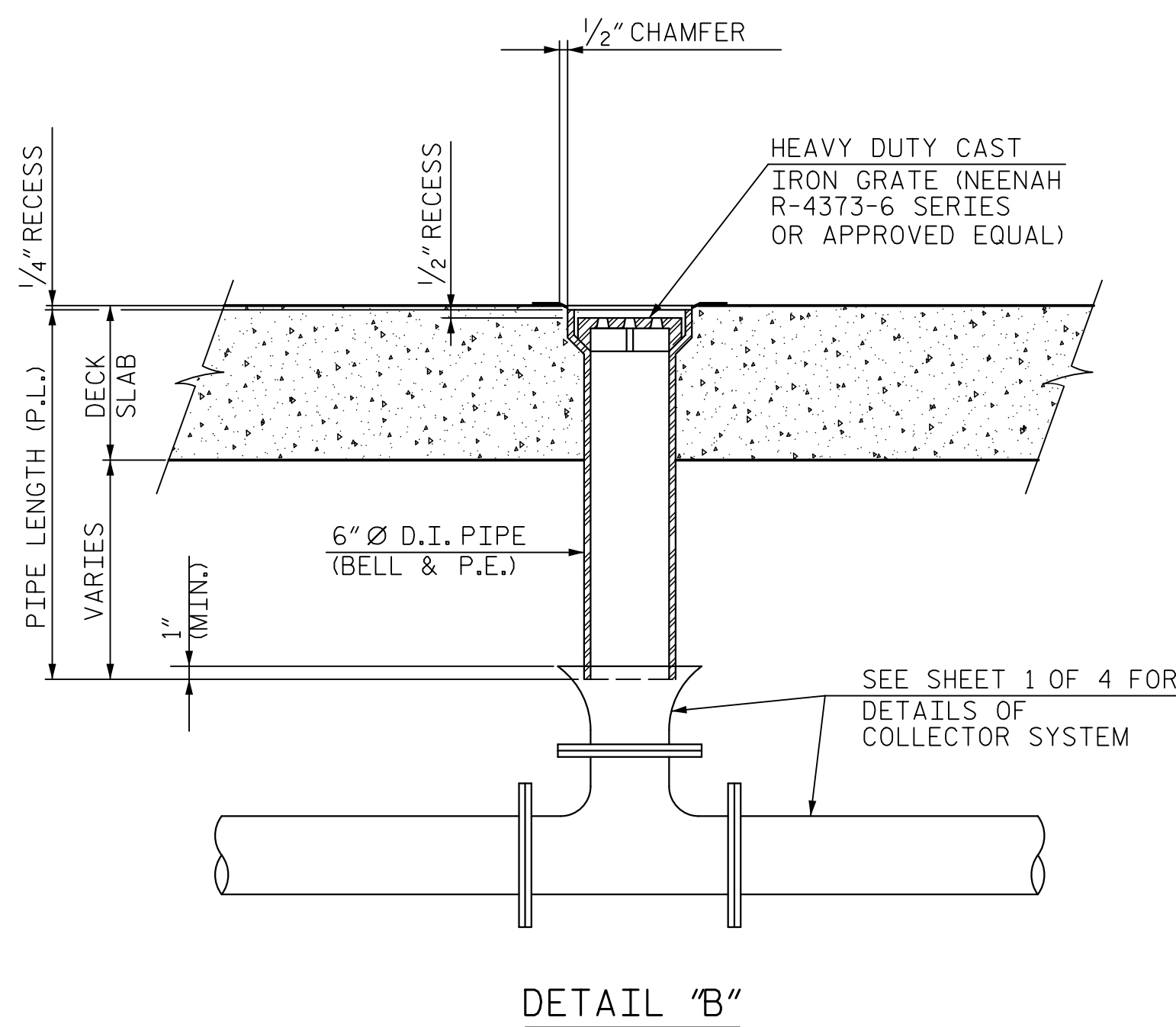


* ADJUST AS NECESSARY TO ALLOW FOR STRAY CURRENT PROTECTION. SEE NOTES.



NOTE: DIAPHRAGM FLANGE NOT SHOWN FOR CLARITY

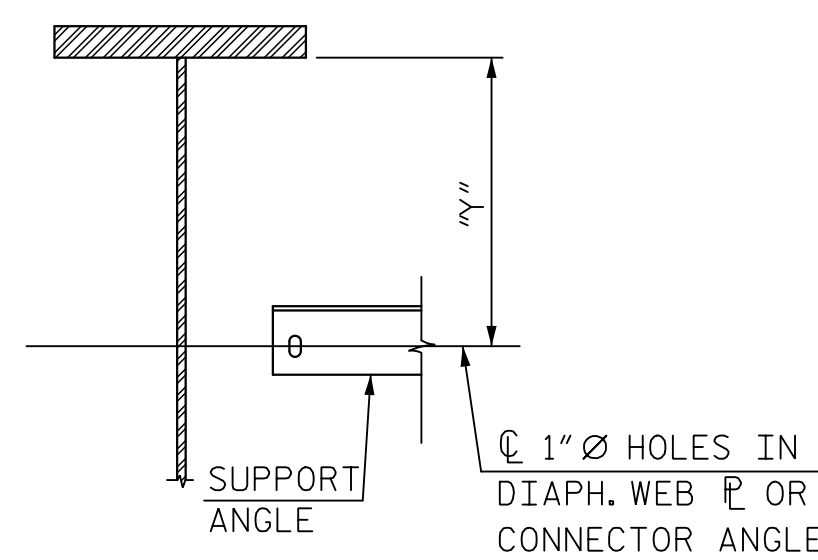
DIAPHRAGM SUPPORT ANGLE (DSA)
(24 REQ'D.)



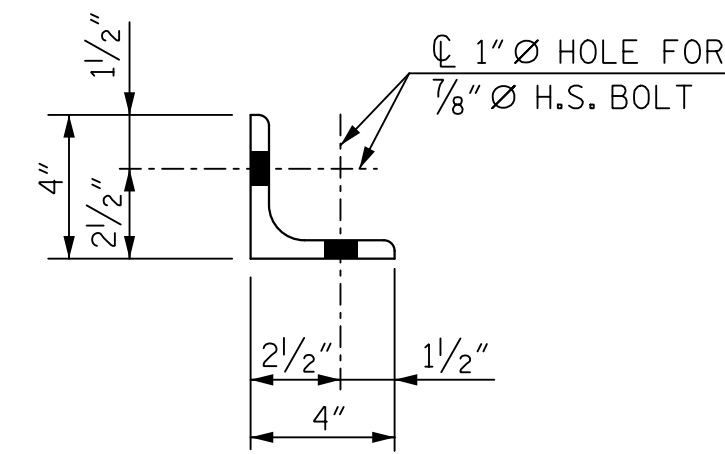
DETAIL "B"

DSA	"γ"	DSA	"γ"	DSA	"γ"
A1	2'-6 7/16"	B1	2'-6 5/16"	C1	2'-7 5/16"
A2	2'-7 11/16"	B2	2'-5"	C2	2'-6"
		B3	2'-4 11/16"		
		B4	2'-6"		

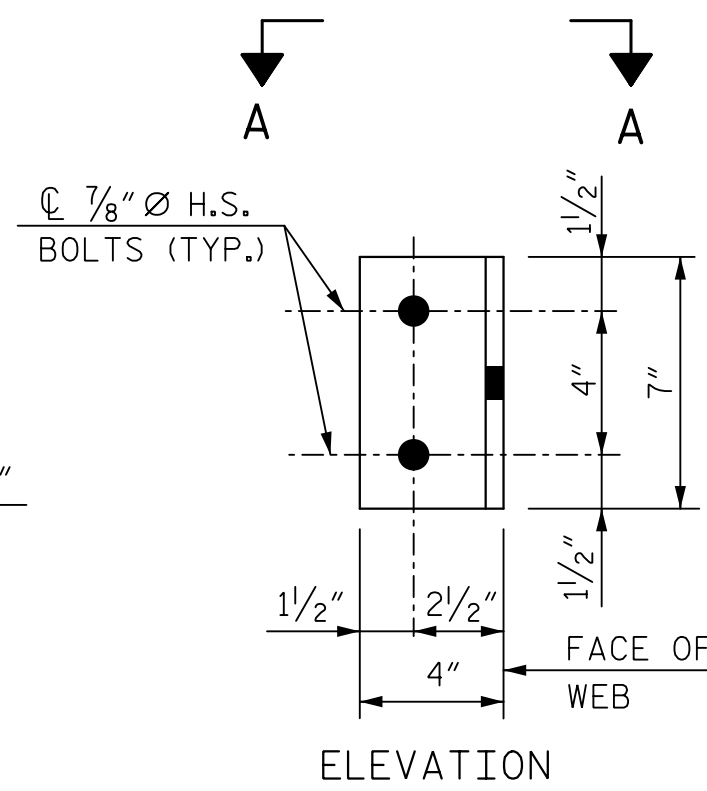
PSA	"γ"	PSA	"γ"	PSA	"γ"
A1	2'-6 7/8"	B1	2'-7 1/2"	C1	2'-7 13/16"
A2	2'-6"	B2	2'-7 7/16"	C2	2'-7 5/8"
A3	2'-8 1/8"	B3	2'-4 5/16"	C3	2'-5 9/16"
A4	2'-8 1/8"	B4	2'-4 1/4"	C4	2'-5 5/8"
		B5	2'-4"		
		B6	2'-4"		
		B7	2'-7 1/8"		
		B8	2'-7 3/16"		



DETAIL "A"



VIEW A-A



DETAIL "C"
(L 4" x 4" x 1/2")

NOTES:

ALL PIPES, FLANGES AND FITTINGS SHALL BE CLASS 53 DUCTILE IRON.
ALL BENDS TO BE SHORT RADIUS, INCLUDING FLANGE & FLARE BENDS, UNLESS OTHERWISE NOTED.

FOR LOCATIONS AND DESIGNATIONS OF DSA & PSA, SEE FRAMING PLAN.
PIPE LENGTHS SHOWN ALLOW FOR 1/8" THICK GASKETS TO BE USED AT ALL BOLTED FLANGE CONNECTIONS.

MAKE FINAL PIPE ALIGNMENT AND TIGHTEN U-BOLTS AFTER RAILROAD TRACK HAS BEEN LAID ACROSS THE BRIDGE.

PAYMENT FOR ALL MATERIALS, FABRICATION, INSTALLATION AND ADJUSTMENTS RELATED TO STRUCTURE DRAINAGE SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE BID FOR "STRUCTURE DRAINAGE SYSTEM". NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR ANY COMPONENT OF THE STRUCTURE DRAINAGE SYSTEM INCLUDING, BUT NOT LIMITED TO:

- o DUCTILE IRON PIPE AND FITTINGS AND CAST IRON GRATES
- o GASKETS AND PVC OR NEOPRENE COATED STRIPS
- o STEEL SUPPORT ANGLES
- o U-BOLTS AND H.S. BOLTS, WASHERS AND NUTS
- o OFFSET PIPE CLAMPS AND EXPANSION ANCHOR BOLTS
- o EXPANSION JOINT
- o BALL JOINT

PROVIDE PVC OR NEOPRENE-COATED STRIPS, EPOXY-CEMENTED TO THE U-BOLT OR PIPE FOR STRAY CURRENT PROTECTION.

THE OUTSIDE COATING FOR D.I. PIPE SHALL BE PAINTED WITH A SHOP PRIME COAT OF INORGANIC ZINC PRIMER AND A FINISH (FIELD) COATING OF ACRYLIC PAINT AS SPECIFIED FOR THE STRUCTURAL STEEL.

FOR STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.

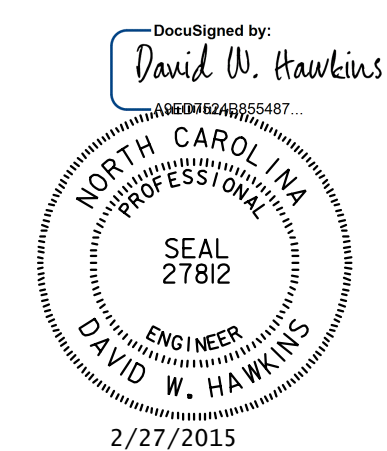
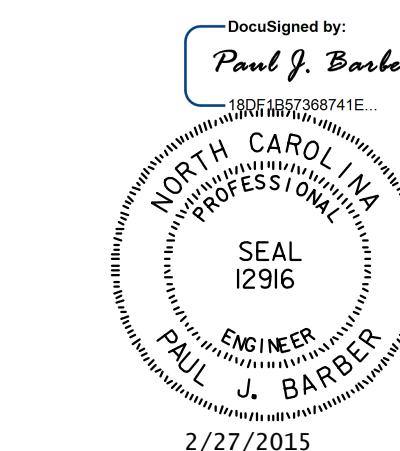
STRUCTURE DRAINAGE SYSTEM ESTIMATED QUANTITIES		
ITEM	UNIT	TOTAL
8" I.D. DUCTILE IRON PIPE, CLASS 53 (FLANGED BOTH ENDS)	FEET	38'-4 1/16"
8" I.D. DUCTILE IRON PIPE, CLASS 53 (FLANGE & P.E.)	FEET	3'-0"
8" I.D. DUCTILE IRON PIPE OFFSET, 250 psi P.R. (M.J. & P.E.)	LBS	390
8" I.D. DUCTILE IRON PIPE CONNECTING PIECE, 250 psi P.R. (M.J. & FLANGE)	LBS	170
8" I.D. DUCTILE IRON PIPE FLANGED FITTINGS, 250 psi P.R.	LBS	1,430
8" I.D. DUCTILE IRON BLIND FLANGES	LBS	168
8" I.D. OFFSET PIPE CLAMPS	EA.	13
6" I.D. DUCTILE IRON PIPE, CLASS 53 (FLANGED BOTH ENDS)	FEET	176'-3"
6" I.D. DUCTILE IRON PIPE, CLASS 53 (FLANGE & P.E.)	FEET	11'-8 1/4"
6" I.D. DUCTILE IRON PIPE, CLASS 53 (BELL & P.E.)	FEET	43'-0 1/8"
6" I.D. DUCTILE IRON PIPE FLANGED FITTINGS, 250 psi P.R.	LBS	3,880
6" I.D. DUCTILE IRON BLIND FLANGES	LBS	200
BALL JOINT	EA.	4
EXPANSION JOINT	EA.	4
HEAVY DUTY CAST IRON GRATES	EA.	28
PIPE SUPPORT ANGLES (PSA) *	EA.	16
DIAPHRAGM SUPPORT ANGLES (DSA) *	EA.	16

* INCLUDES U-BOLTS, ANGLES, NUTS, BOLTS, AND WASHERS.

PROJECT NO. P-4900A
ROBESON COUNTY
STATION: POC 38+93.36 -L-
MILE POST: 0.55
SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**STRUCTURE
DRAINAGE
DETAILS**



HNTB 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: 7/14
Checked By: P. BARBER DATE: 9/14

DWG. NO. 32

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-51
1			3			TOTAL SHEETS
2			4			54