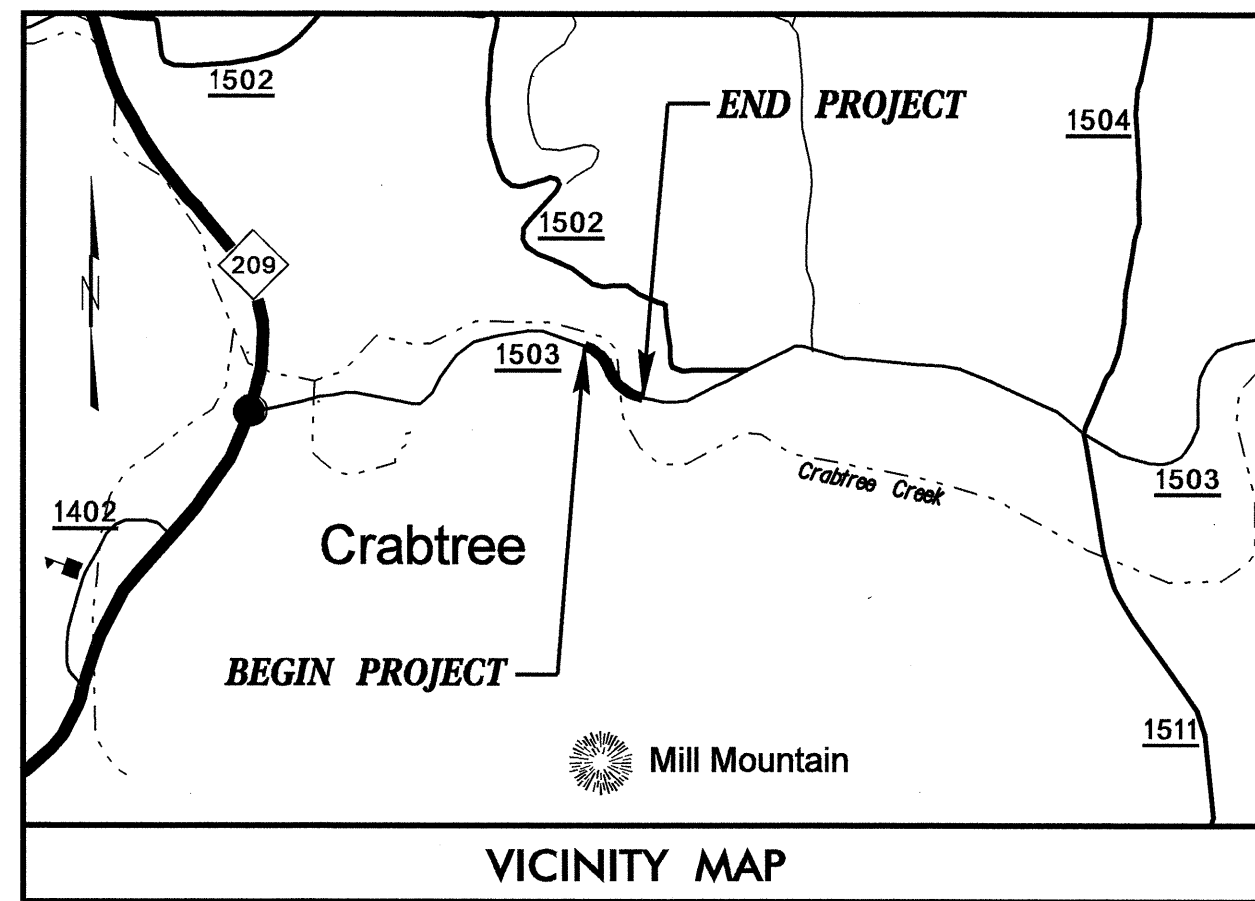


CONTRACT: C201839 TIP PROJECT: B-3661

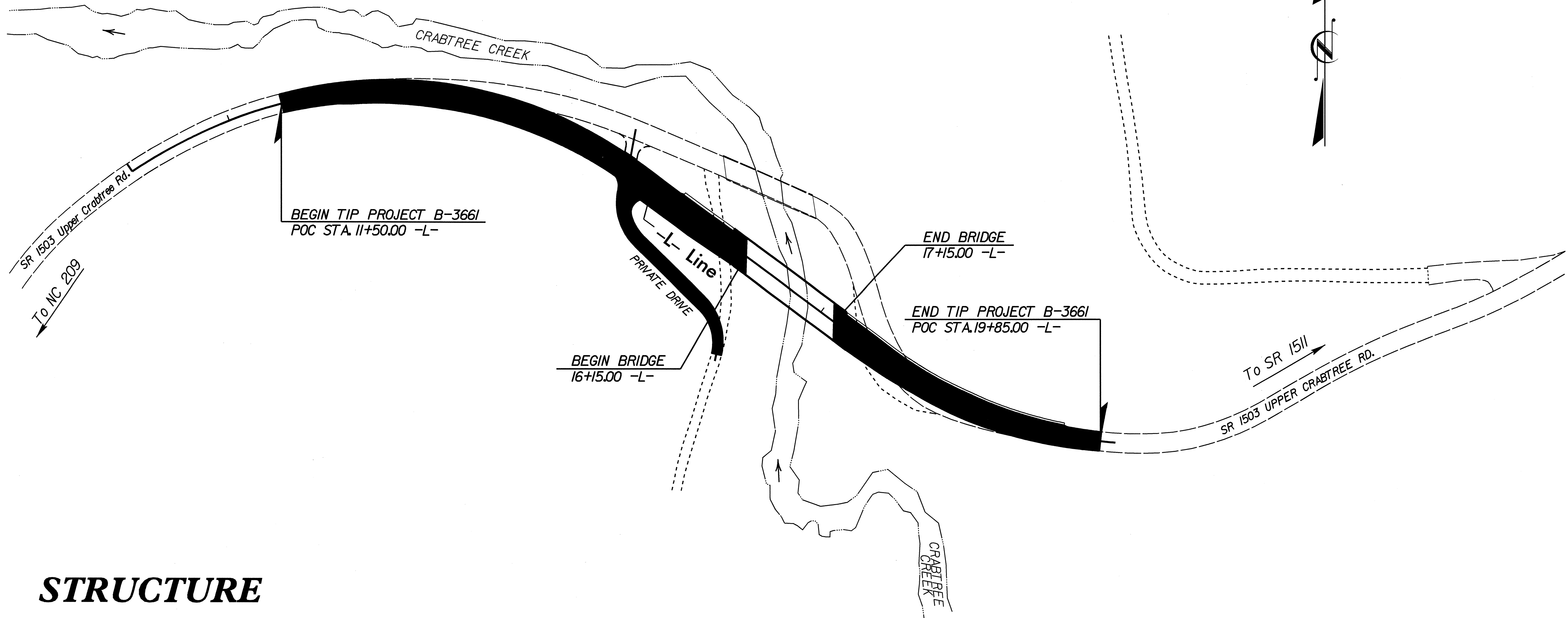
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HAYWOOD COUNTY

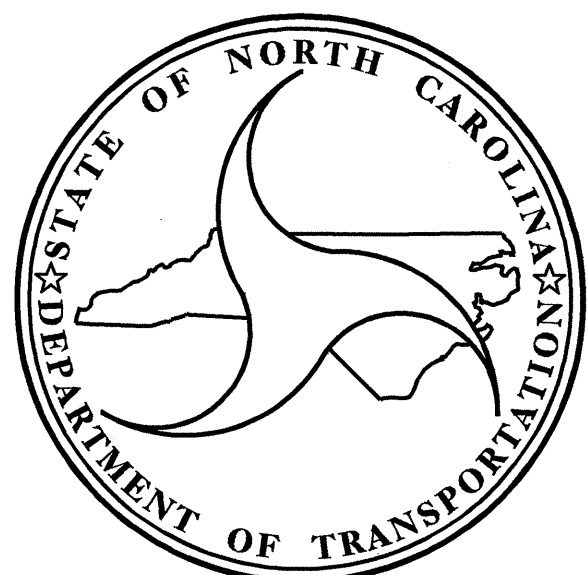
**LOCATION: REPLACEMENT OF BRIDGE No. 36
OVER CRABTREE CREEK ON SR 1503
BETWEEN NC 209 AND SR 1502**
**TYPE OF WORK: PAVING, GRADING, DRAINAGE,
AND STRUCTURE**



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3661		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33206.1.1	BRZ-1503 (4)	PE	
33206.2.1	BRZ-1503 (4)	ROW	
33206.3.1	BRZ-1503 (4)	CONST.	



STRUCTURE



DESIGN DATA

ADT 2008 =	1500
ADT 2028 =	2225
DHV =	12 %
D =	60 %
T =	4 % *
V =	35 MPH
* TTST 1%	DUAL 3%

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3661	=	0.139 MI.
LENGTH OF STRUCTURE TIP PROJECT B-3661	=	0.019 MI.
TOTAL LENGTH OF TIP PROJECT B-3661	=	0.158 MI.

Prepared In the Office of:
DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

LETTING DATE:
MAY 20, 2008

B.C. HUNT, P.E.
PROJECT ENGINEER

T.G. PAYNE, P.E.
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN
1000 BIRCH RIDGE DR.
RALEIGH, NC 27610

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.

STATE DESIGN ENGINEER

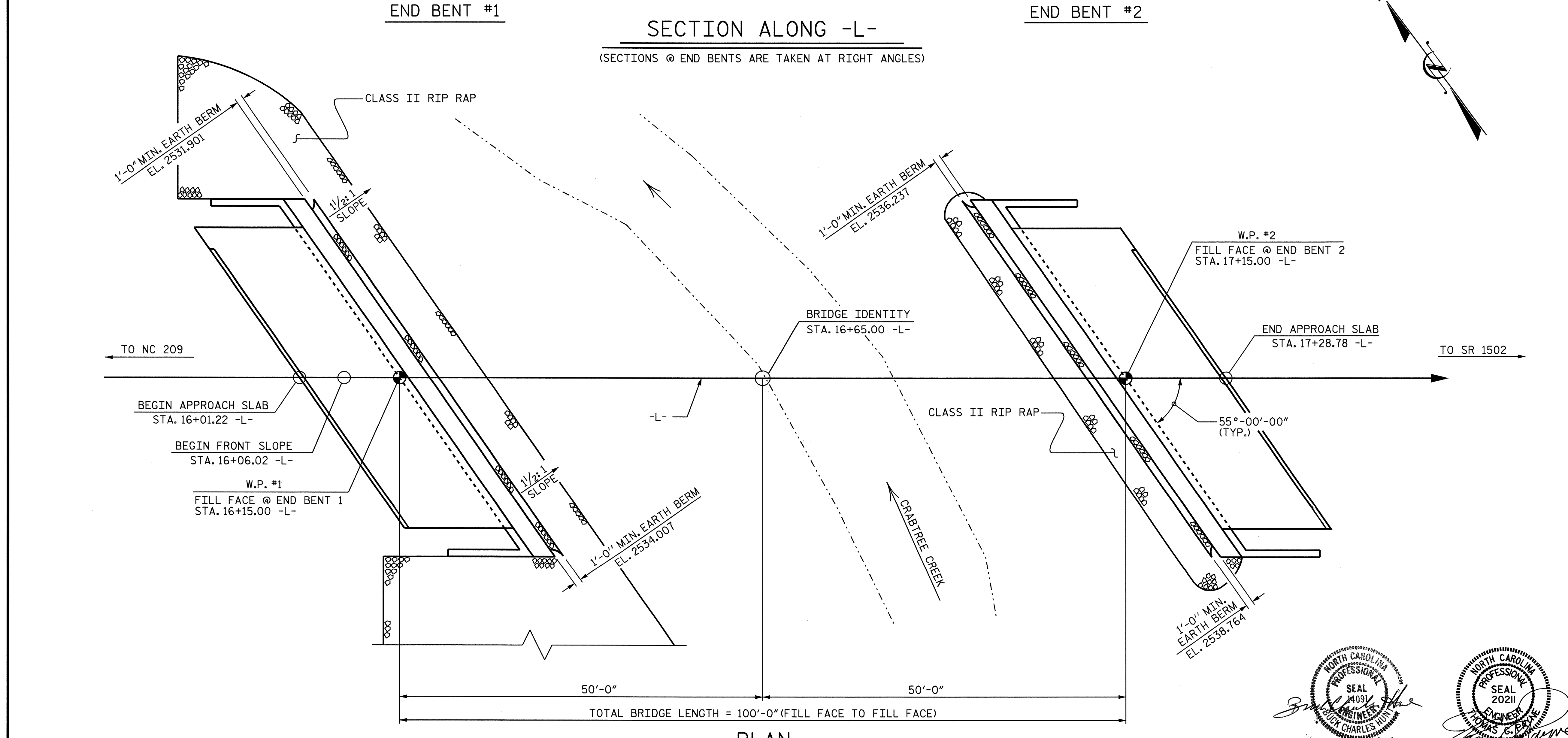
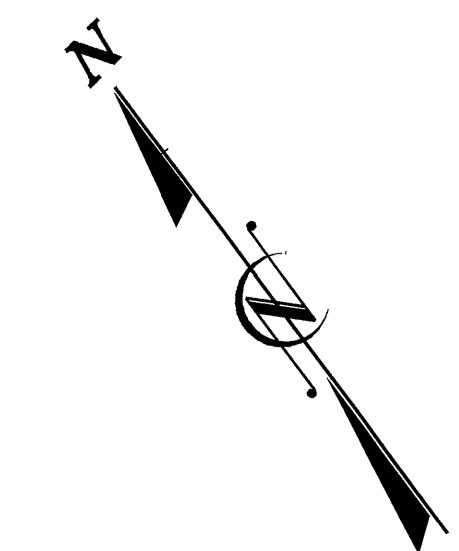
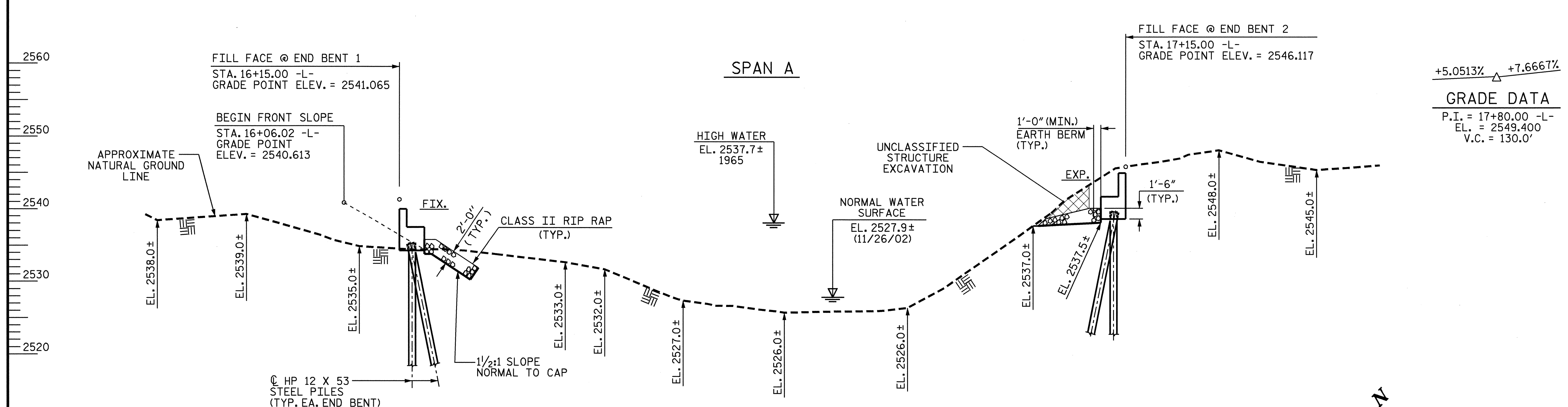
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE

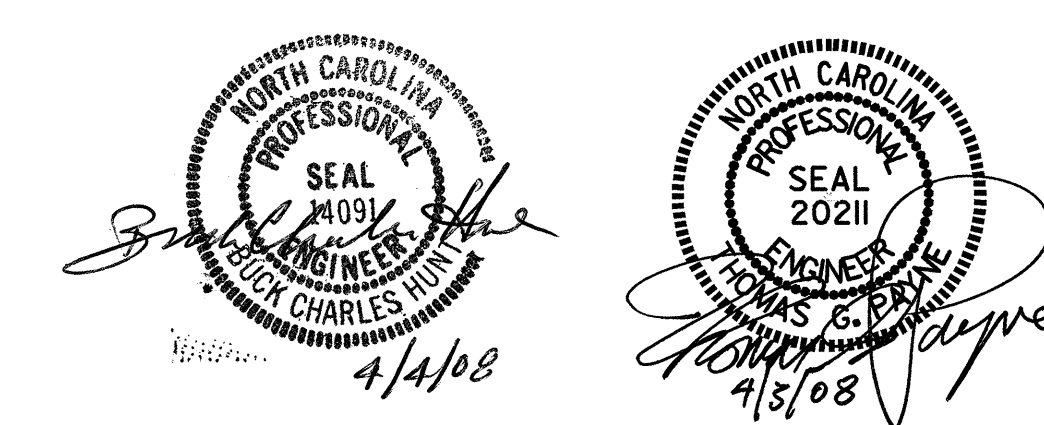
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15+75 16+00 16+50 17+00 17+50



DRAWN BY : J.P. ADAMS/R. G. E. DATE : 09/07
CHECKED BY : S.H. SOCKWELL/T. G. P. DATE : 12/12/07

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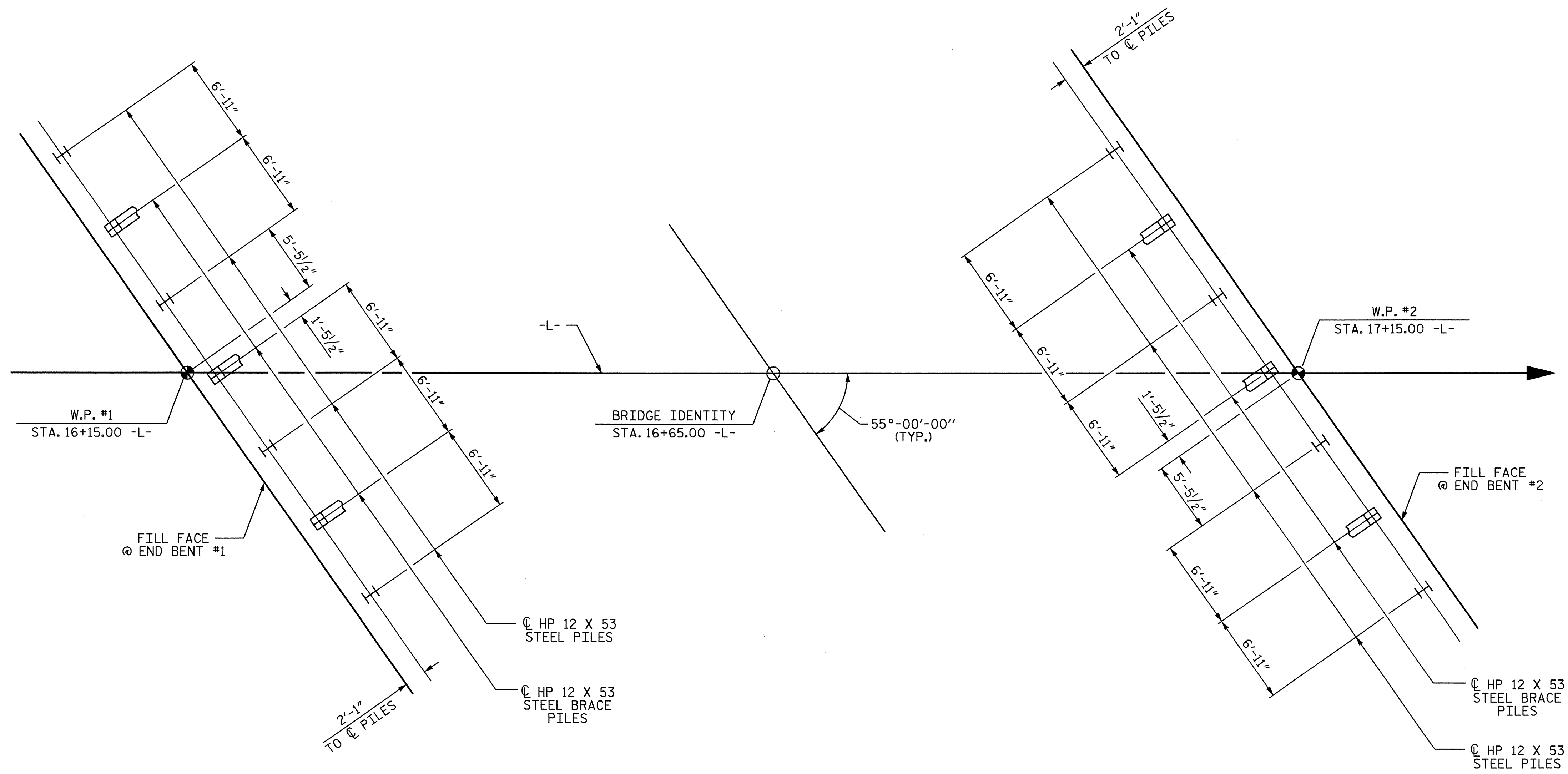
PROJECT NO. B-3661
HAYWOOD COUNTY
STATION: 16+65.00 -L-
SHEET 1 OF 3 REPLACES BRIDGE NO. 36

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER
CRABTREE CREEK
ON SR 1503 BETWEEN
NC 209 AND SR 1502

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. **S-1**
TOTAL SHEETS **22**



FOUNDATION LAYOUT

END BENT BRACE PILES ARE BATTERED AT 3:12
DIMENSIONS LOCATING END BENT PILES ARE SHOWN TO CENTERLINE OF PILES

END BENT #1

END BENT #2

FOUNDATION NOTES

DRIVE PILES AT END BENT #1 AND #2 TO A REQUIRED BEARING CAPACITY OF 120 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO. THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT #1 AND #2 IS 60 TONS PER PILE.

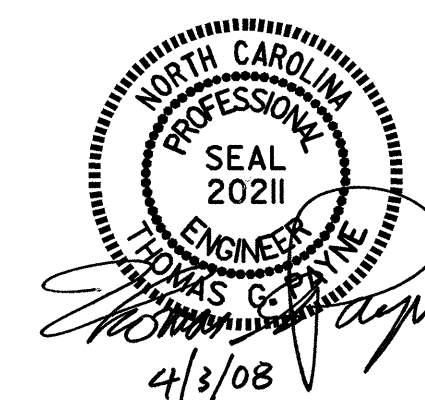
STEEL PILE POINTS WITH TEETH ARE REQUIRED FOR STEEL PILES AT END BENT #1 AND #2. SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-3661
HAYWOOD COUNTY
STATION: 16+65.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER
CRABTREE CREEK
ON SR 1503 BETWEEN
NC 209 AND SR 1502



DRAWN BY : J.P. ADAMS DATE : 09/07
CHECKED BY : S.H. SOCKWELL/T. G. P. DATE : 12/12/07

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			22

BENCH MARK IS 8" SPIKE IN 12" OAK STUMP, 50' FROM LT EP OF SR 1503,
55' FROM NE CORNER OF BRIDGE, ELEV. 2548.460 NGVD 29

NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT THE GIRDERS HAVE BEEN DESIGNED FOR HS25.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING STRUCTURE CONSISTING OF 3 SPANS (1 @ 30'-3", 1 @ 30'-1", AND 1 @ 30'-3") OF 8 LINES OF 14" I-BEAMS AND A STEEL PLANK FLOOR AND ASPHALT WEARING SURFACE, WITH A CLEAR ROADWAY WIDTH OF 19'-2" AND SUPPORTED ON TIMBER CAPS AND TIMBER PILES WITH REINFORCED CONCRETE SILLS AT INTERIOR BENTS AND LOCATED DOWNSTREAM FROM THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON "GENERAL DRAWING" SHEET 1 OF 3 SHALL BE EXCAVATED FOR A DISTANCE OF 26 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY B.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE."

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

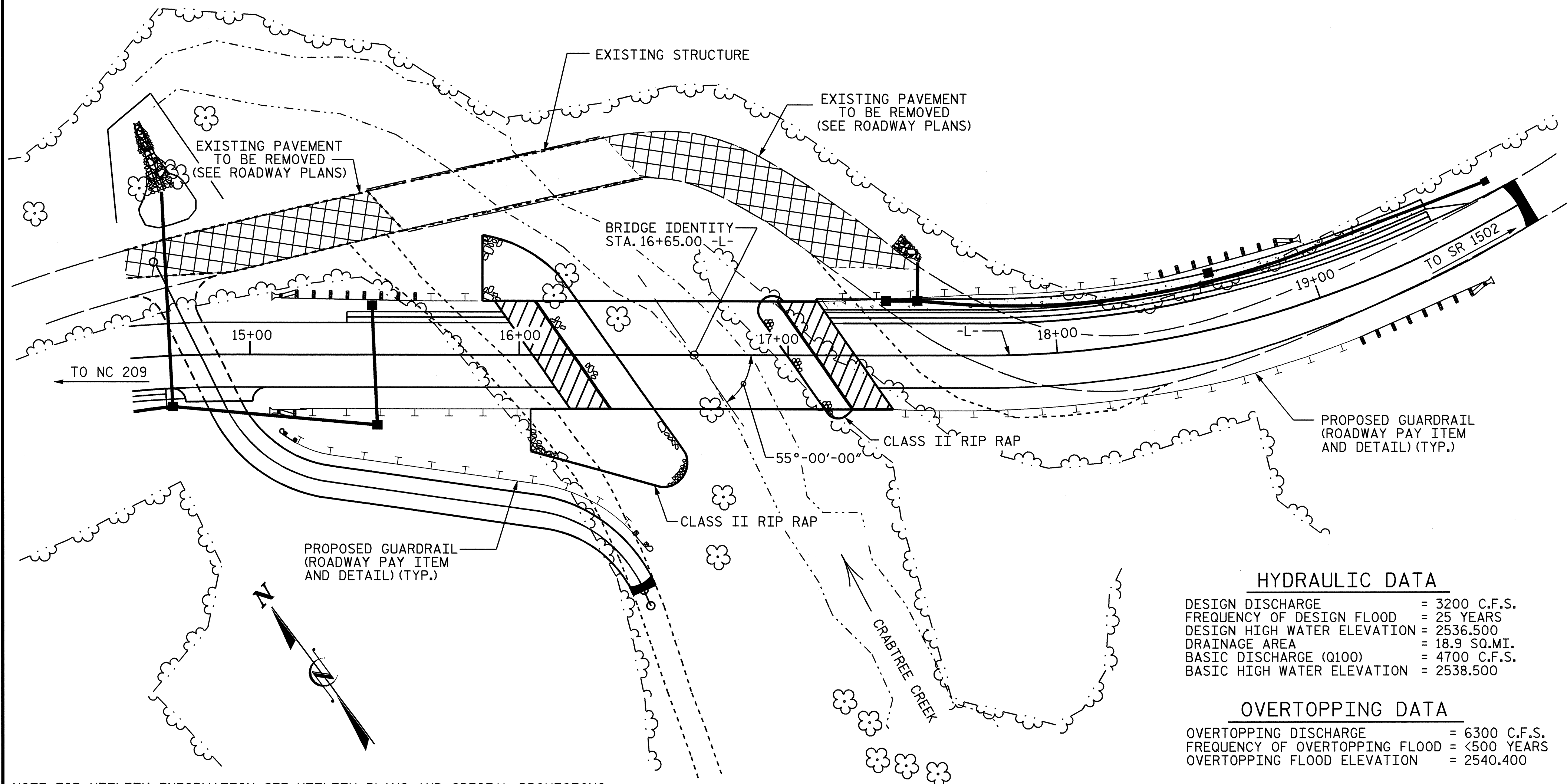
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SHIPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL PROVISIONS.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.



HYDRAULIC DATA

DESIGN DISCHARGE	= 3200 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YEARS
DESIGN HIGH WATER ELEVATION	= 2536.500
DRAINAGE AREA	= 18.9 SQ.MI.
BASIC DISCHARGE (Q100)	= 4700 C.F.S.
BASIC HIGH WATER ELEVATION	= 2538.500

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 6300 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= <500 YEARS
OVERTOPPING FLOOD ELEVATION	= 2540.400

NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	STRUCTURAL STEEL (APPROX.)	HP 12 X 53 STEEL PILES		STEEL PILE POINTS	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS
	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE	LUMP SUM		3046	3067		LUMP SUM		97900				194.92			LUMP SUM	LUMP SUM
END BENT #1					29.2		4408		7	70	7		182	202		
END BENT #2		LUMP SUM			30.3		4786		7	125	7		20	22		
TOTAL	LUMP SUM	LUMP SUM	3046	3067	59.5	LUMP SUM	9194	97900	14	195	14	194.92	202	224	LUMP SUM	LUMP SUM

PROJECT NO. B-3661
HAYWOOD COUNTY
STATION: 16+65.00 -L-

SHEET 3 OF 3

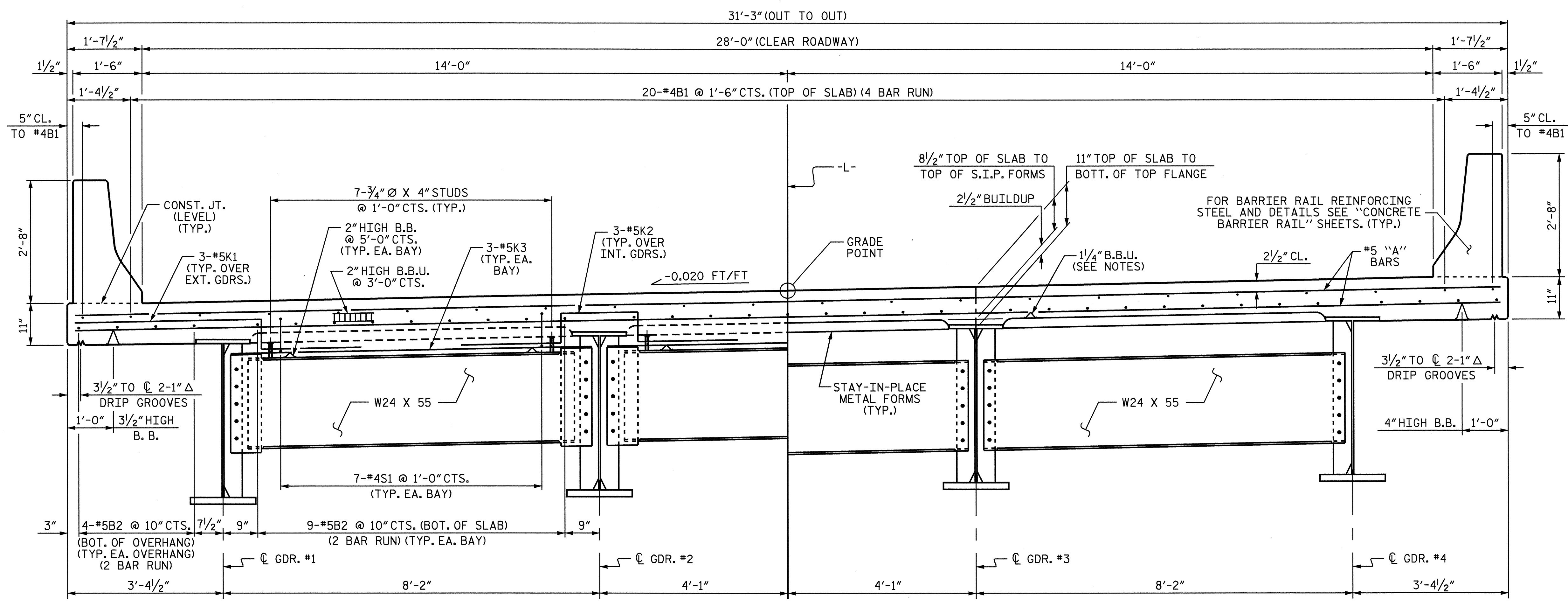
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER
CRABTREE CREEK
ON SR 1503 BETWEEN
NC 209 AND SR 1502



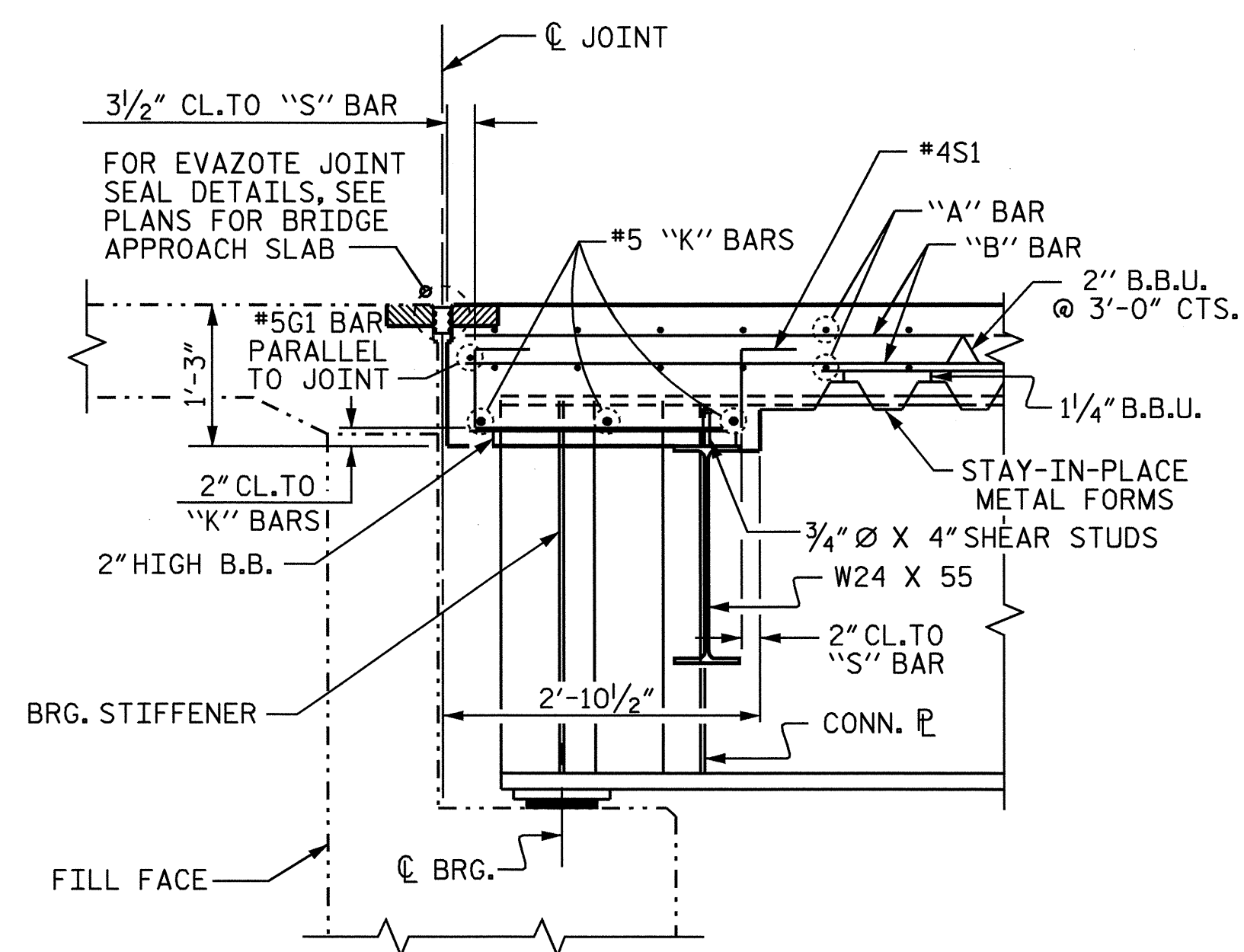
DRAWN BY : J.P. ADAMS/R. G. E. DATE : 09/07
CHECKED BY : S.H. SOCKWELL/T. G. P. DATE : 12/12/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS 22
2			4			

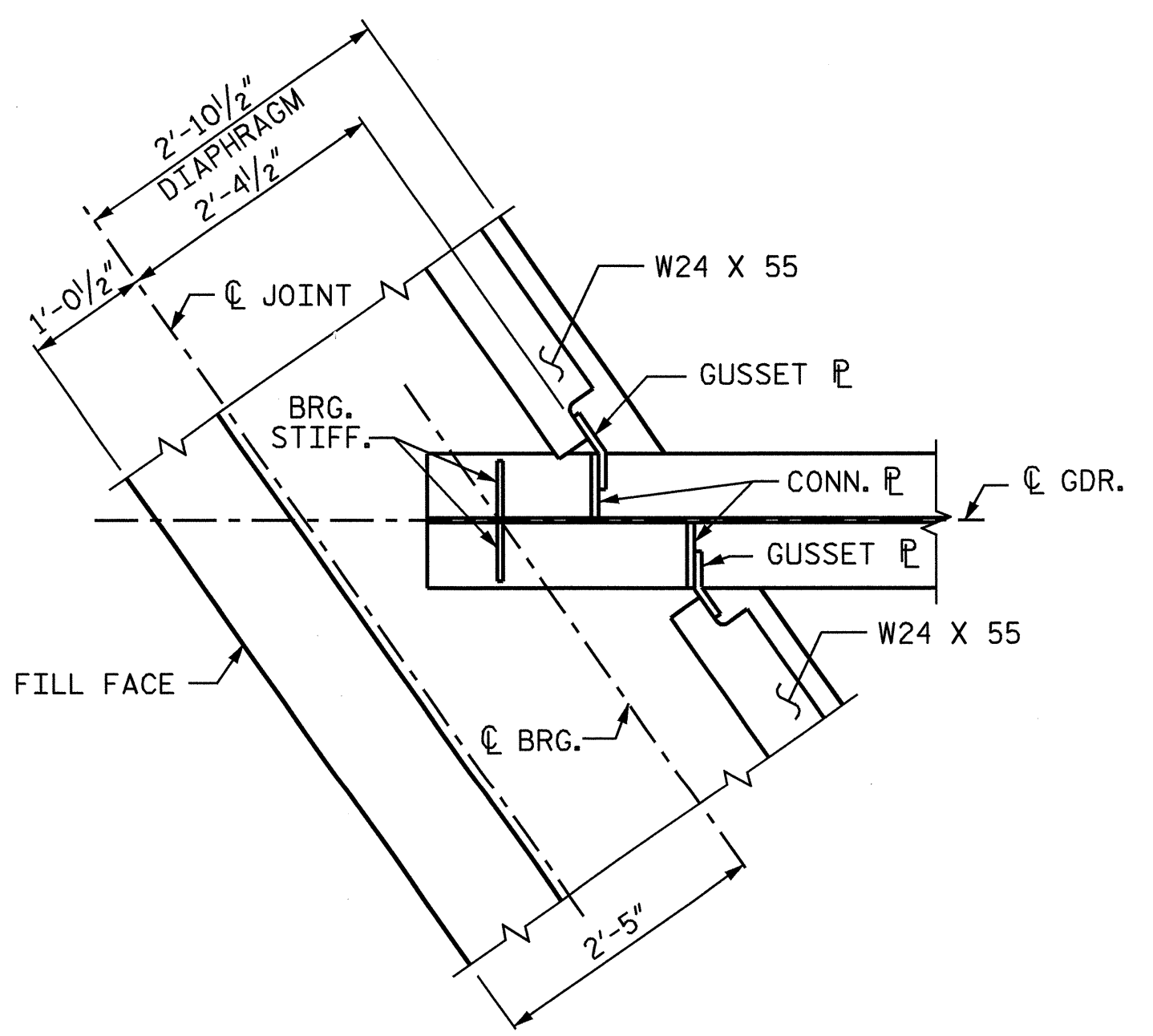


TYPICAL HALF SECTION @ END BENT DIAPHRAGM

TYPICAL HALF SECTION @ INTERMEDIATE DIAPHRAGM



SECTION THRU END BENT DIAPHRAGM



END BENT DIAPHRAGM

NOTES

PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

BARRIER RAIL SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

#5 G1 BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL.

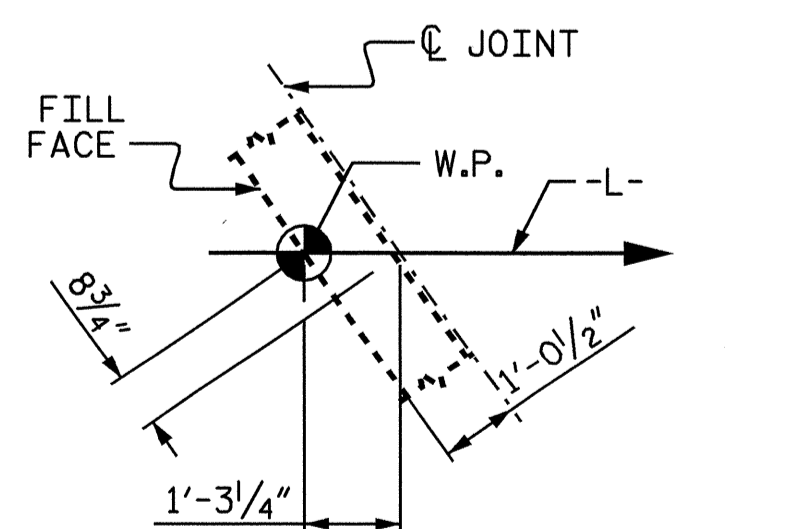
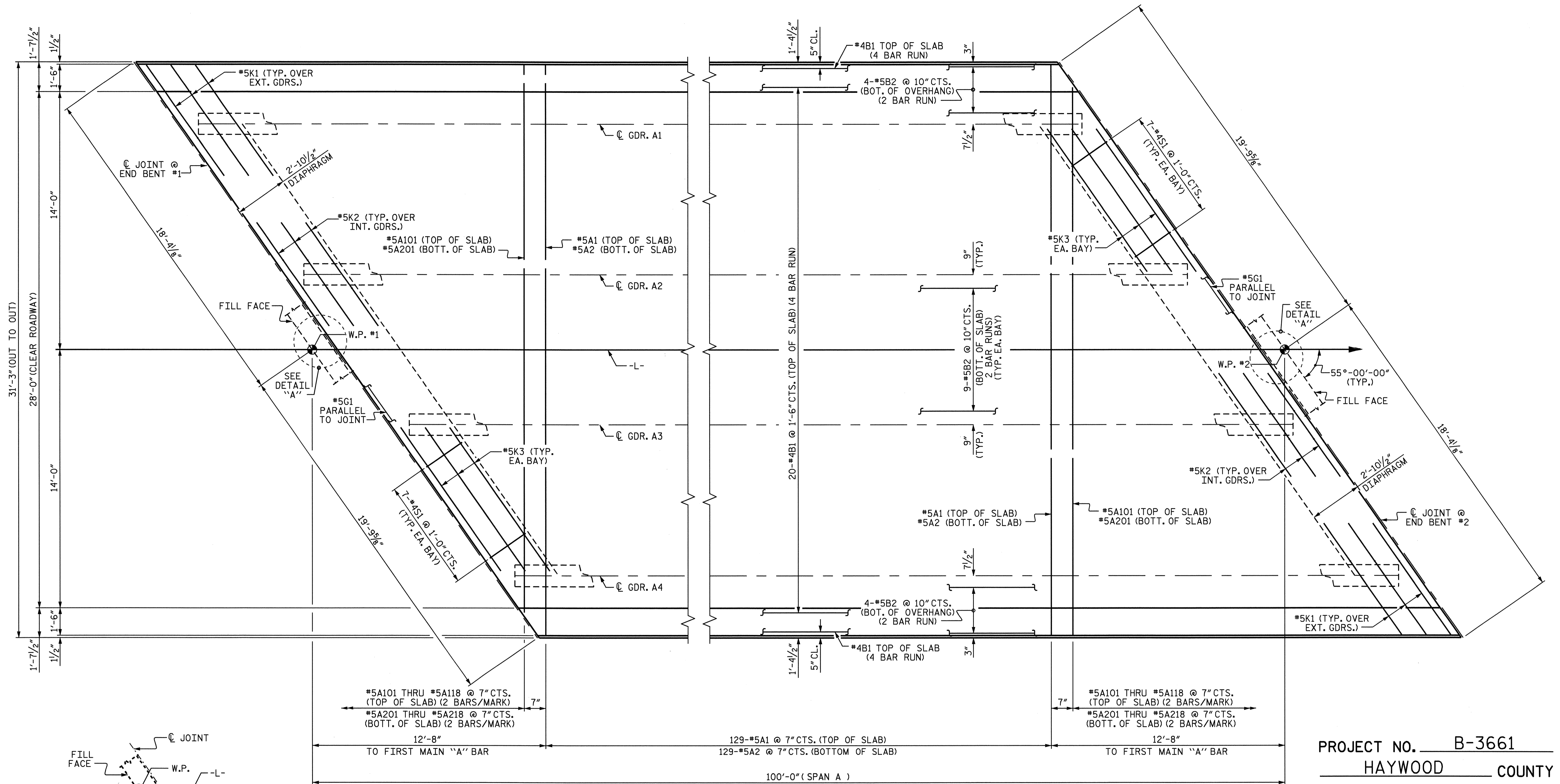
THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS.

PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE TYPICAL SECTION					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-4					TOTAL SHEETS 22



DRAWN BY: KEITH D. LAYNE DATE: 03/07
 CHECKED BY: M. K. BEARD DATE: 07/07



DETAIL "A"
END BENT 1 SHOWN, END BENT 2 SIMILIAR

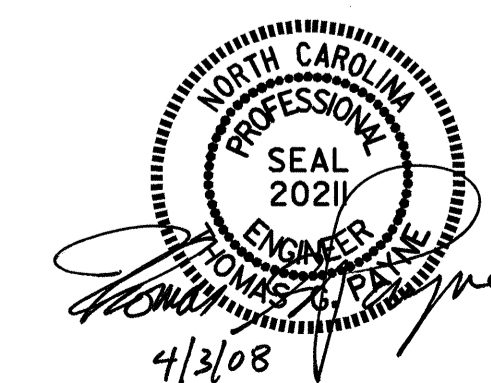
PLAN OF SPAN A

FOR BARRIER RAIL REINFORCING STEEL & DETAILS, SEE BARRIER RAIL SHEETS.

PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

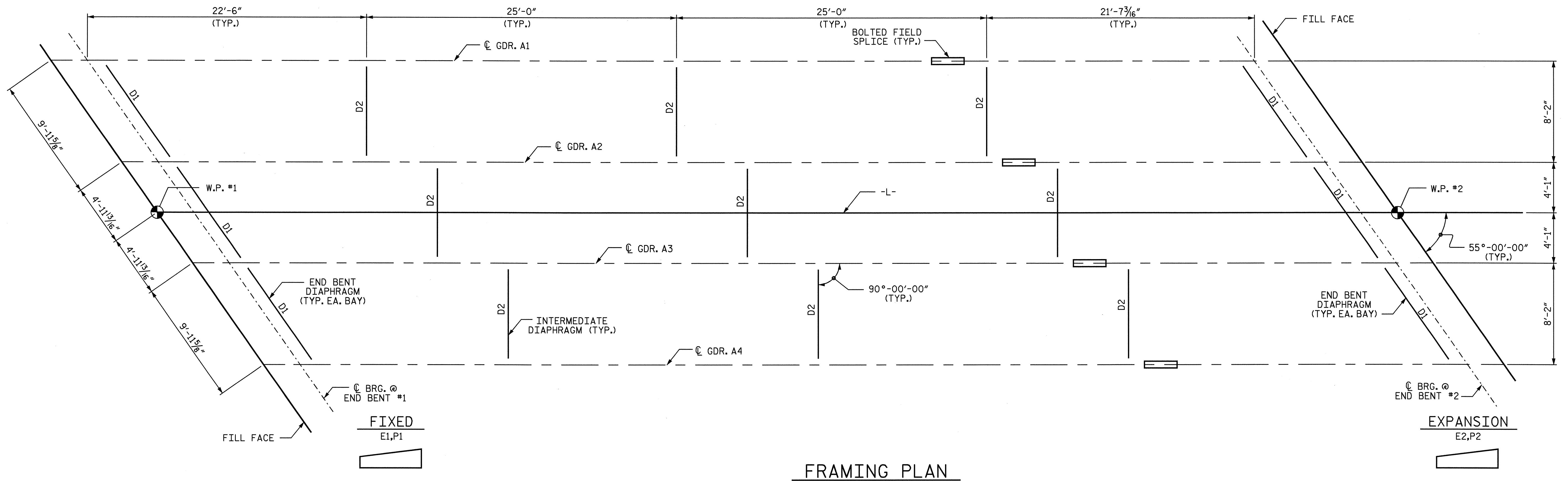
**SUPERSTRUCTURE
 PLAN OF SPAN A**



DRAWN BY : KEITH D. LAYNE DATE : 03/07
 CHECKED BY : M. K. BEARD DATE : 07/07

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 klayne

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			22



DEAD LOAD DEFLECTION TABLE FOR GIRDERS											
EXTERIOR GIRDERS A1 & A4											
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
DEFLECTION DUE TO WEIGHT OF BEAM	0	-0.021	-0.040	-0.054	-0.064	-0.067	-0.064	-0.054	-0.040	-0.021	0
* DEFLECTION DUE TO WEIGHT OF SLAB	0	-0.066	-0.134	-0.188	-0.222	-0.233	-0.222	-0.188	-0.134	-0.066	0
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0	-0.008	-0.015	-0.021	-0.025	-0.026	-0.025	-0.021	-0.015	-0.008	0
TOTAL DEAD LOAD DEFLECTION	0	-0.095	-0.189	-0.263	-0.310	-0.326	-0.310	-0.263	-0.189	-0.095	0
VERTICAL CURVE ORDINATE											
ORDINATE DUE TO SUPERELEVATION											
REQUIRED CAMBER	0	1/8	2/4	3/8	3 1/16	3 5/16	3 11/16	3 3/8	2 1/4	1 1/8	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS											
INTERIOR GIRDERS A2 & A3											
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
DEFLECTION DUE TO WEIGHT OF BEAM	0	-0.021	-0.040	-0.054	-0.064	-0.067	-0.064	-0.054	-0.040	-0.021	0
* DEFLECTION DUE TO WEIGHT OF SLAB	0	-0.061	-0.125	-0.175	-0.207	-0.217	-0.207	-0.175	-0.125	-0.061	0
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0	-0.008	-0.015	-0.021	-0.024	-0.025	-0.024	-0.021	-0.015	-0.008	0
TOTAL DEAD LOAD DEFLECTION	0	-0.090	-0.180	-0.250	-0.294	-0.309	-0.294	-0.250	-0.180	-0.090	0
VERTICAL CURVE ORDINATE											
ORDINATE DUE TO SUPERELEVATION											
REQUIRED CAMBER	0	1/16	2/8	3	3 1/2	3 11/16	3 1/2	3	2 1/8	1 1/16	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
 ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).
 SIGN CONVENTION FOR DEAD LOAD DEFLECTION $\begin{matrix} + \\ \downarrow \\ 0 \end{matrix}$

PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

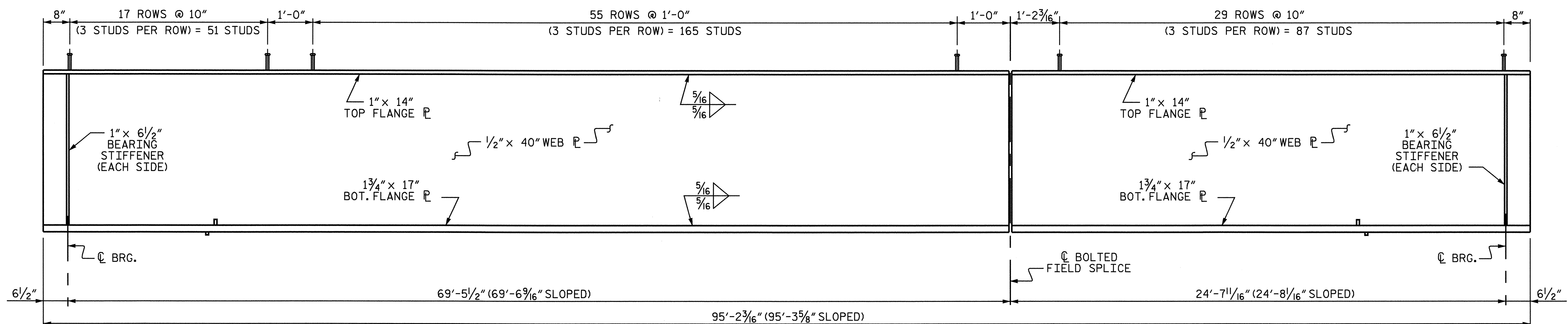


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

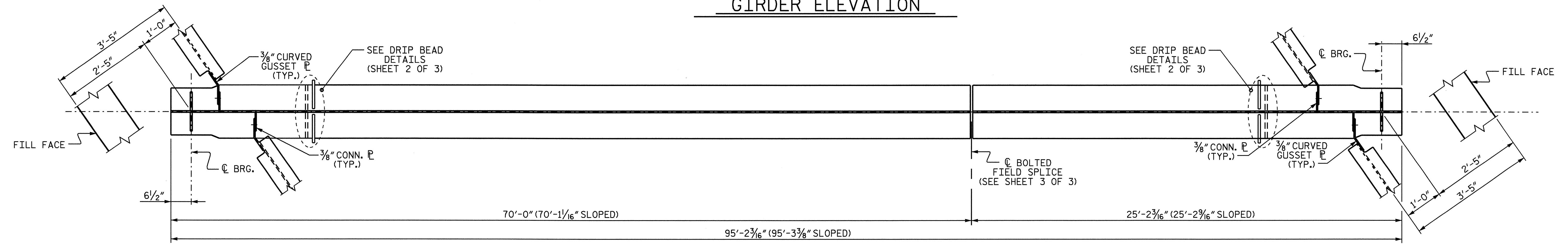
**SUPERSTRUCTURE
 FRAMING PLAN**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			22

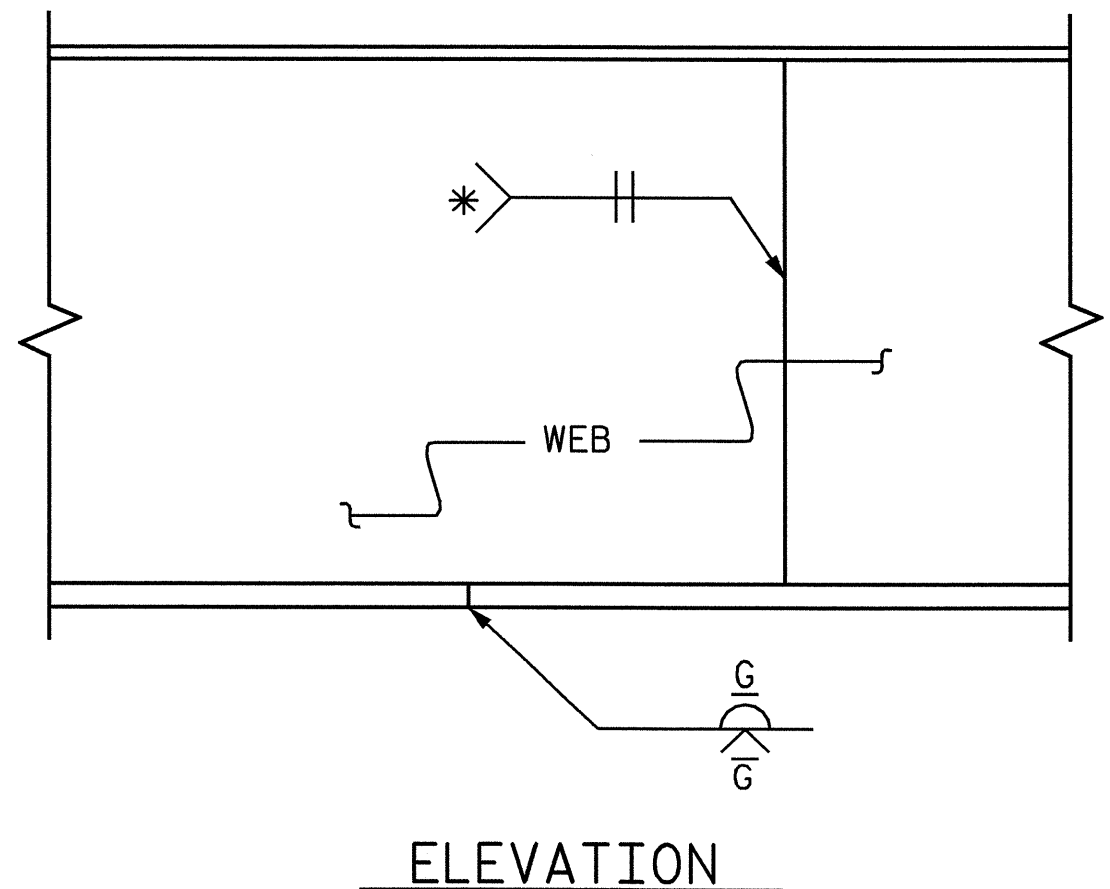
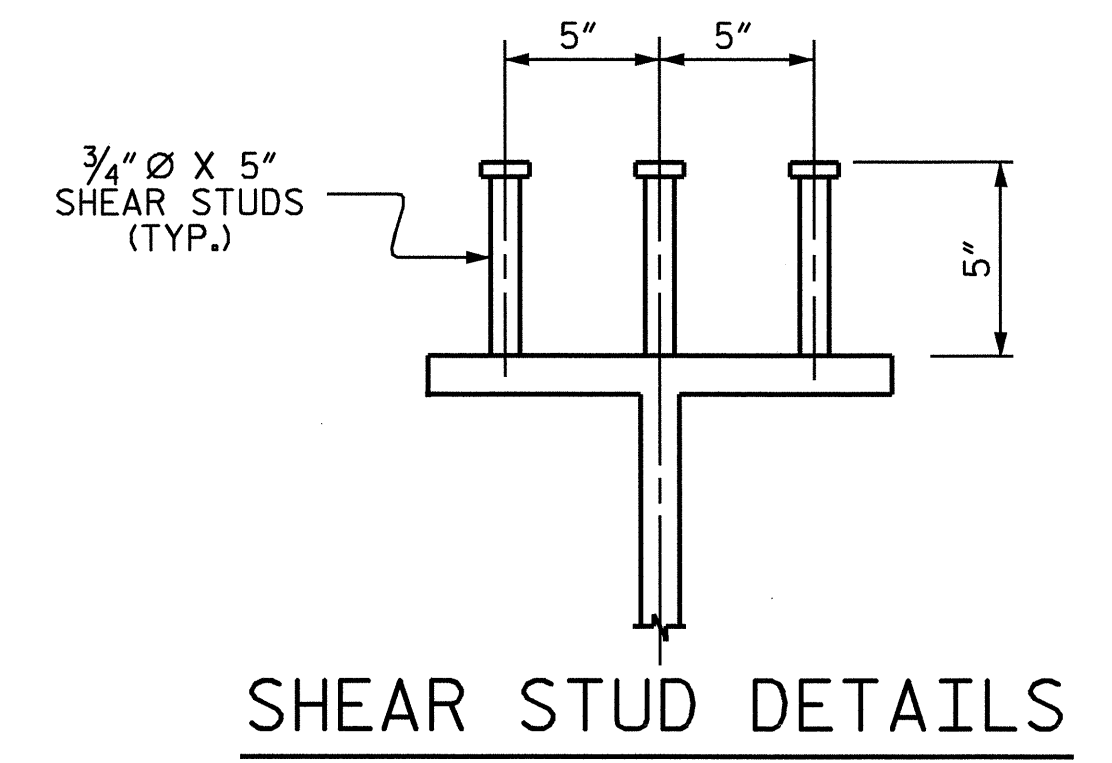
DRAWN BY: KEITH D. LAYNE DATE: 03/07
 CHECKED BY: M. K. BEARD DATE: 07/07



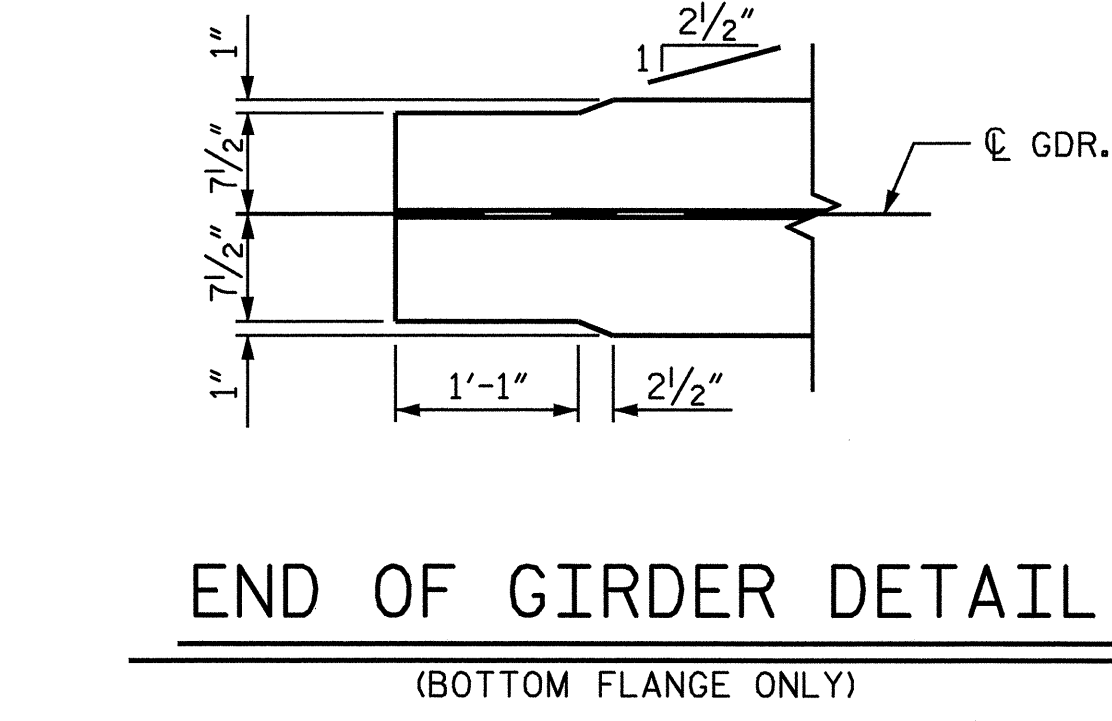
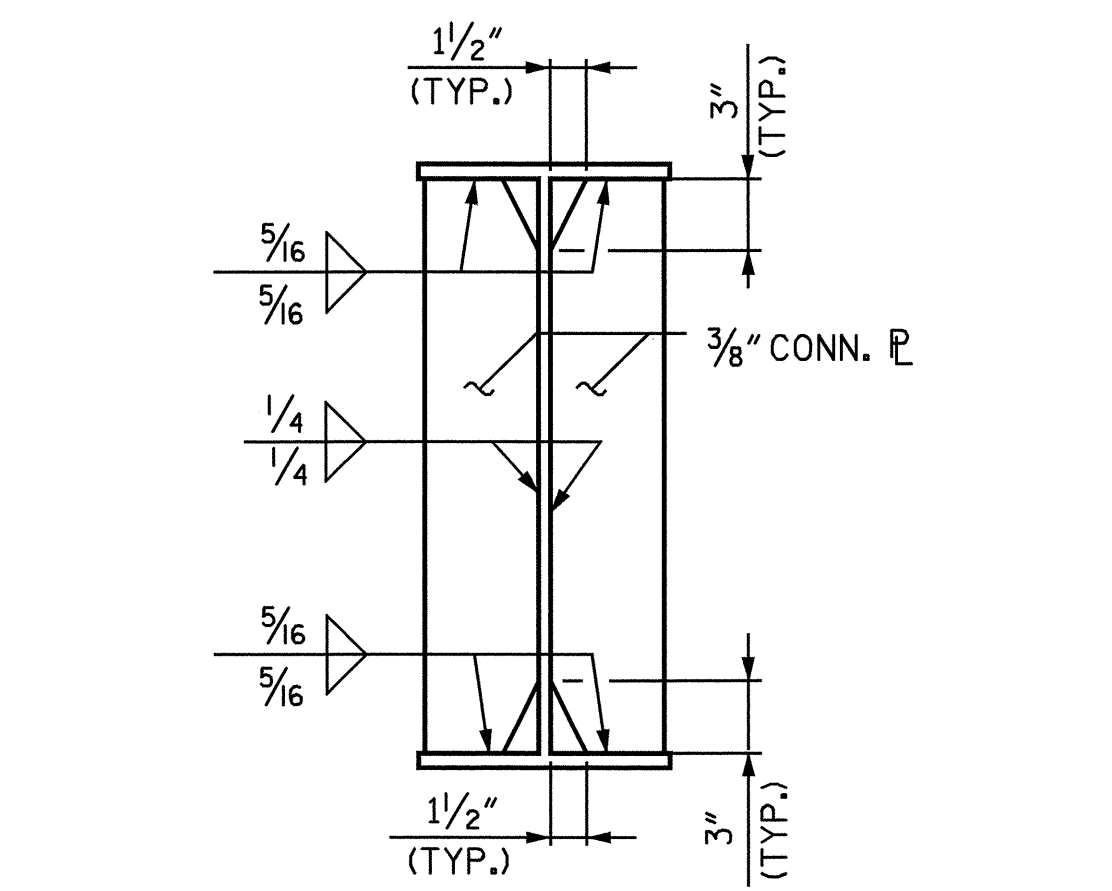
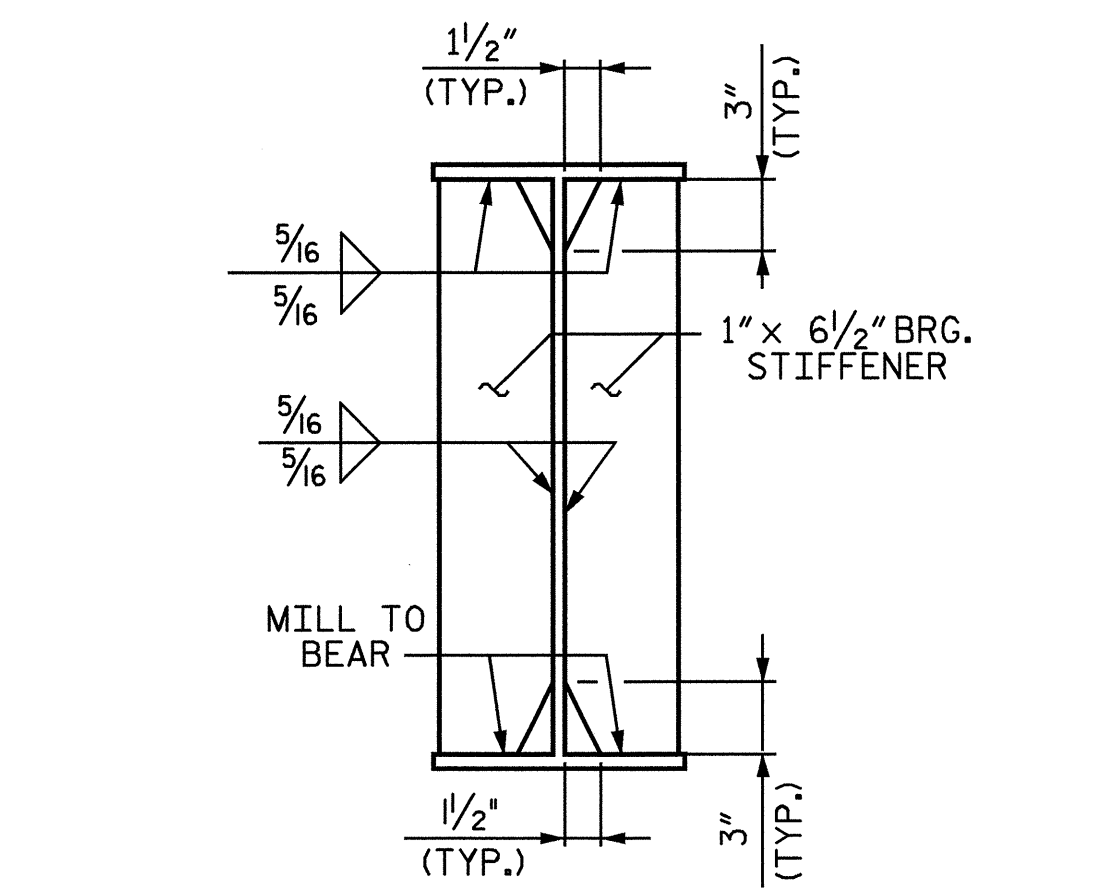
GIRDER ELEVATION



BOTTOM FLANGE DETAIL



TYPICAL FLANGE AND WEB BUTT JOINT
* GRIND SMOOTH AND FLUSH ON OUTER FACE OF EXTERIOR GIRDERS



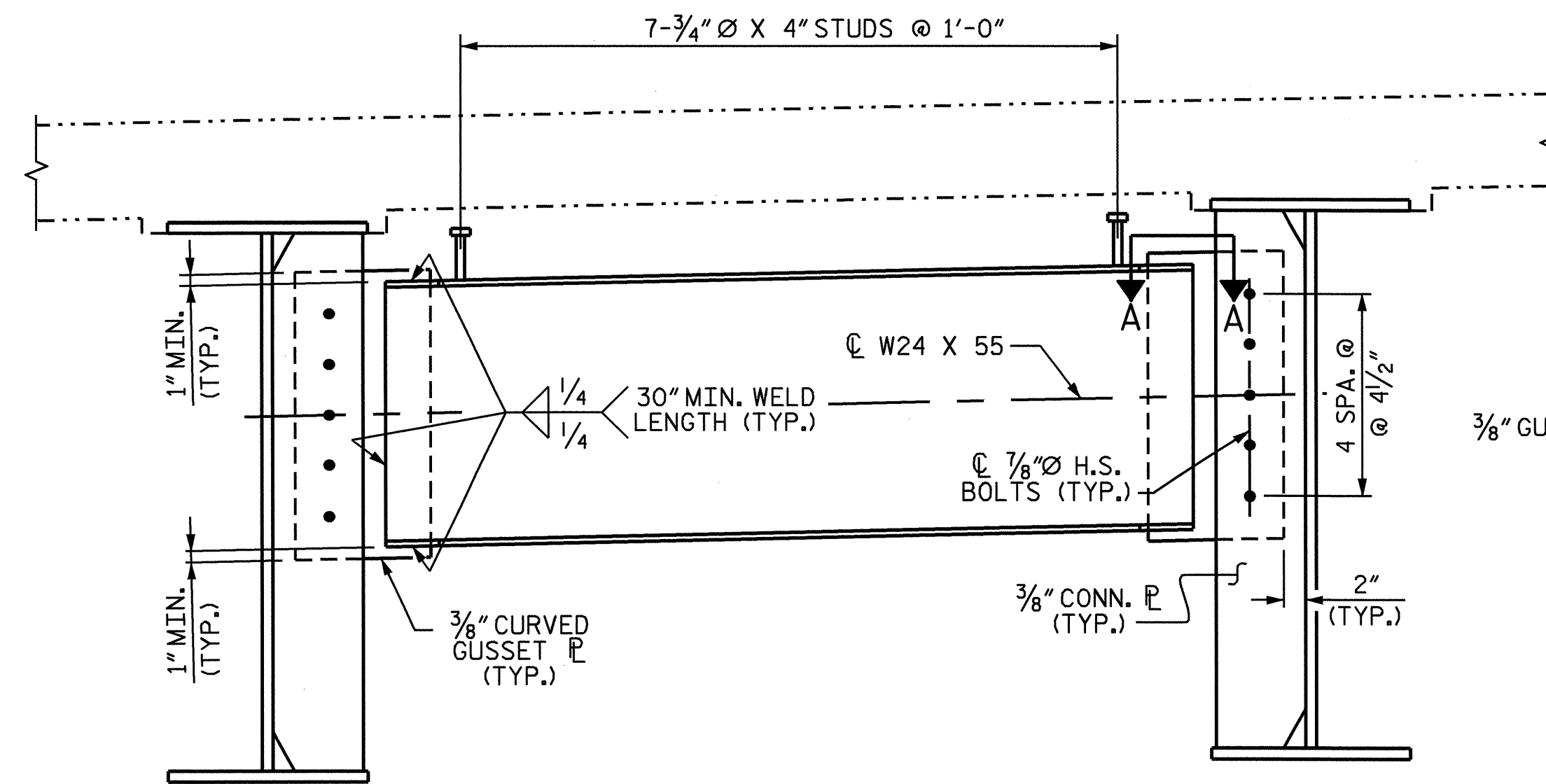
PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-
 SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS

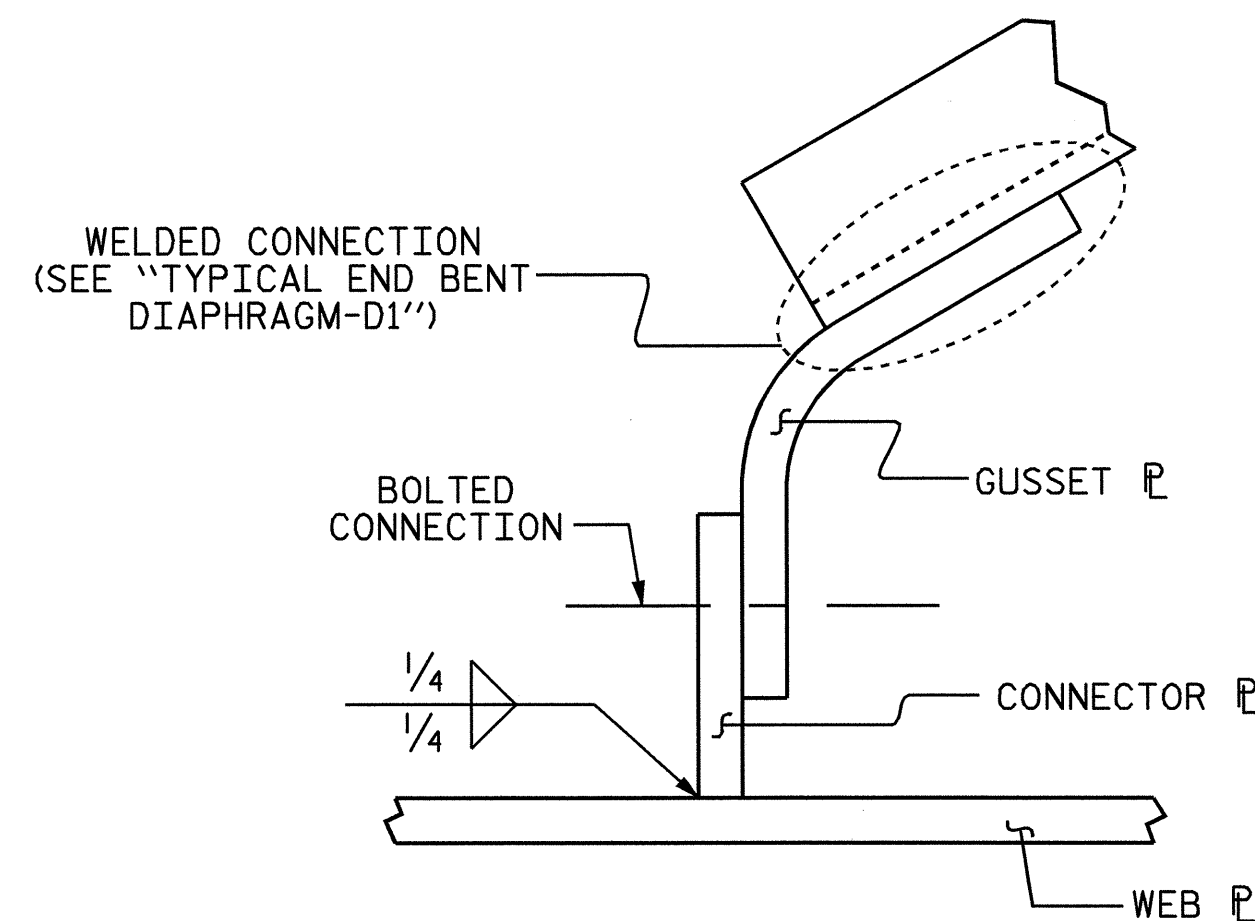


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			22

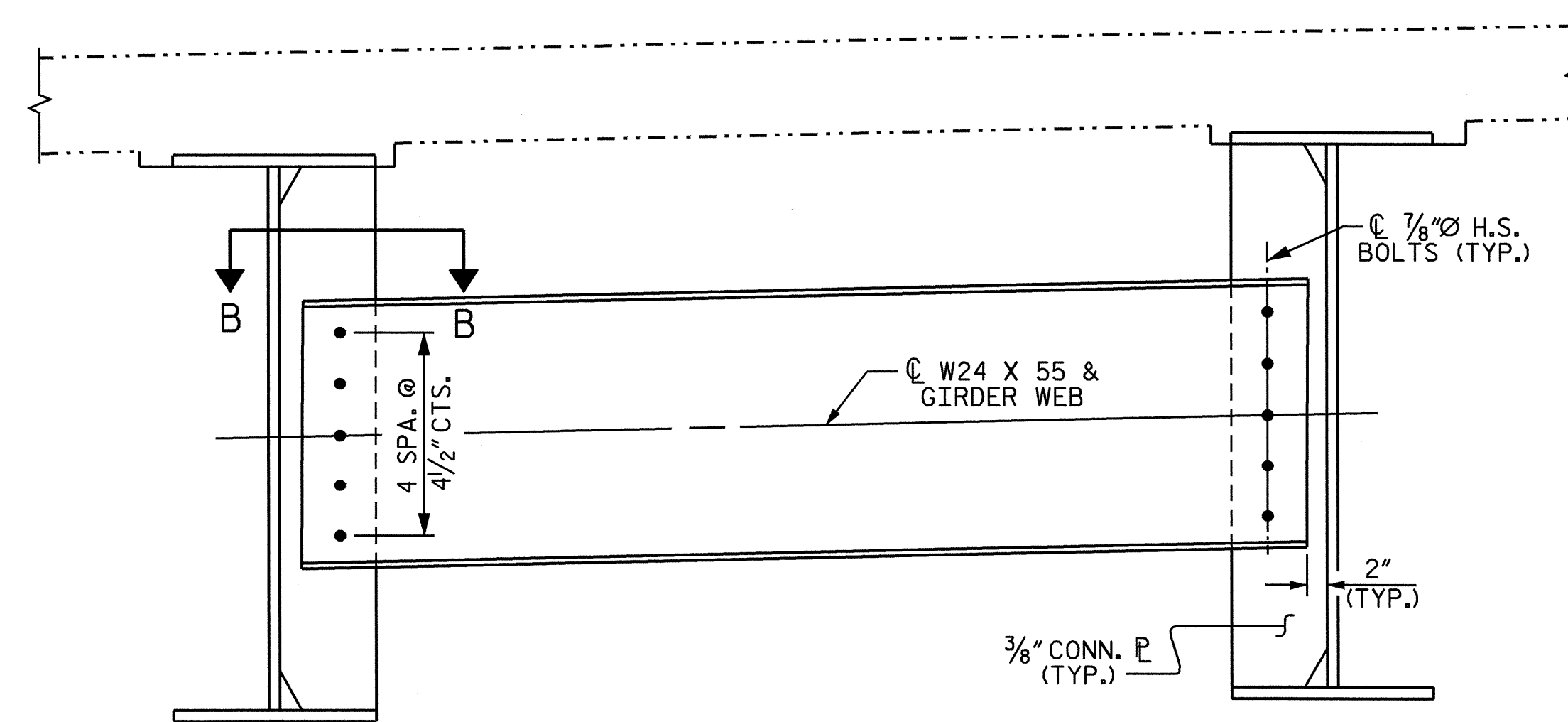
DRAWN BY: KEITH D. LAYNE DATE: 03/07
 CHECKED BY: M. K. BEARD DATE: 07/07



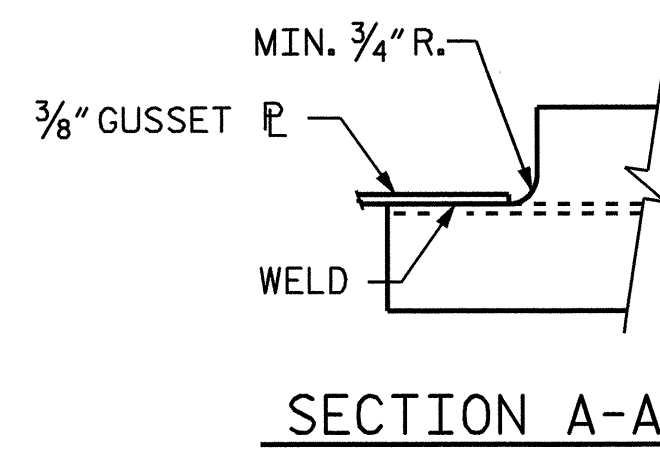
TYPICAL END BENT DIAPHRAGM (D1)



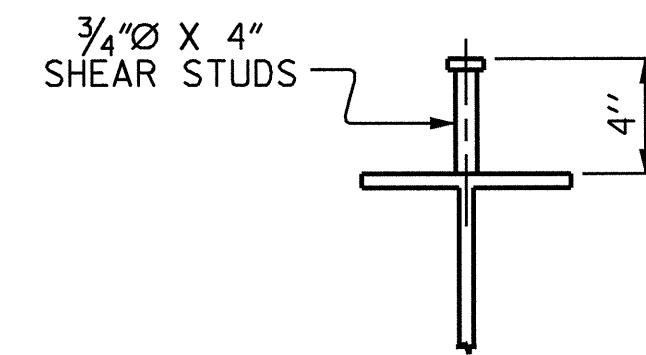
WELD DETAIL FOR CURVED GUSSET



TYPICAL INTERMEDIATE DIAPHRAGM (D2)

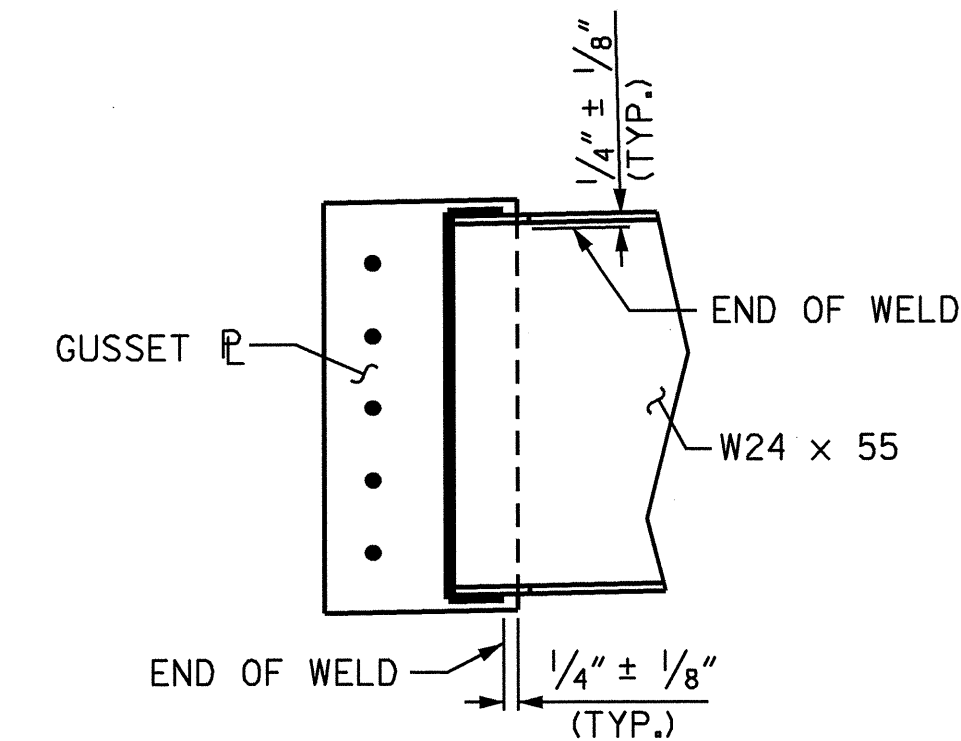


SECTION A-A

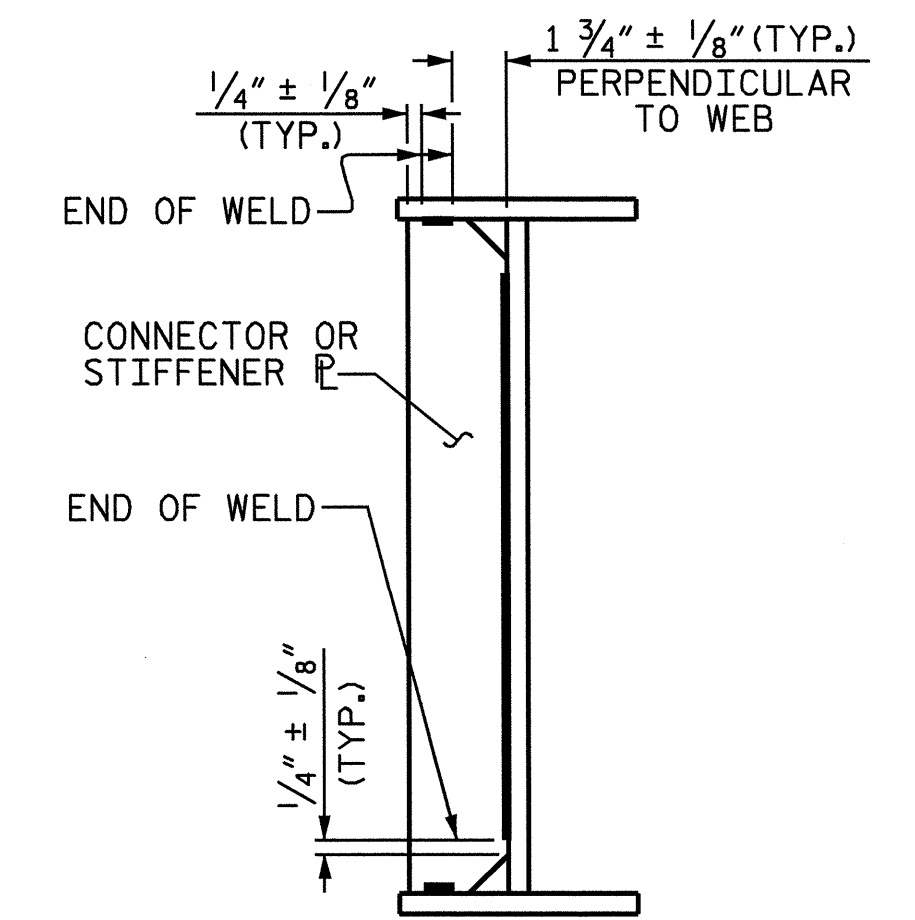


SHEAR STUD DETAILS

(END BENT DIAPHRAGM)

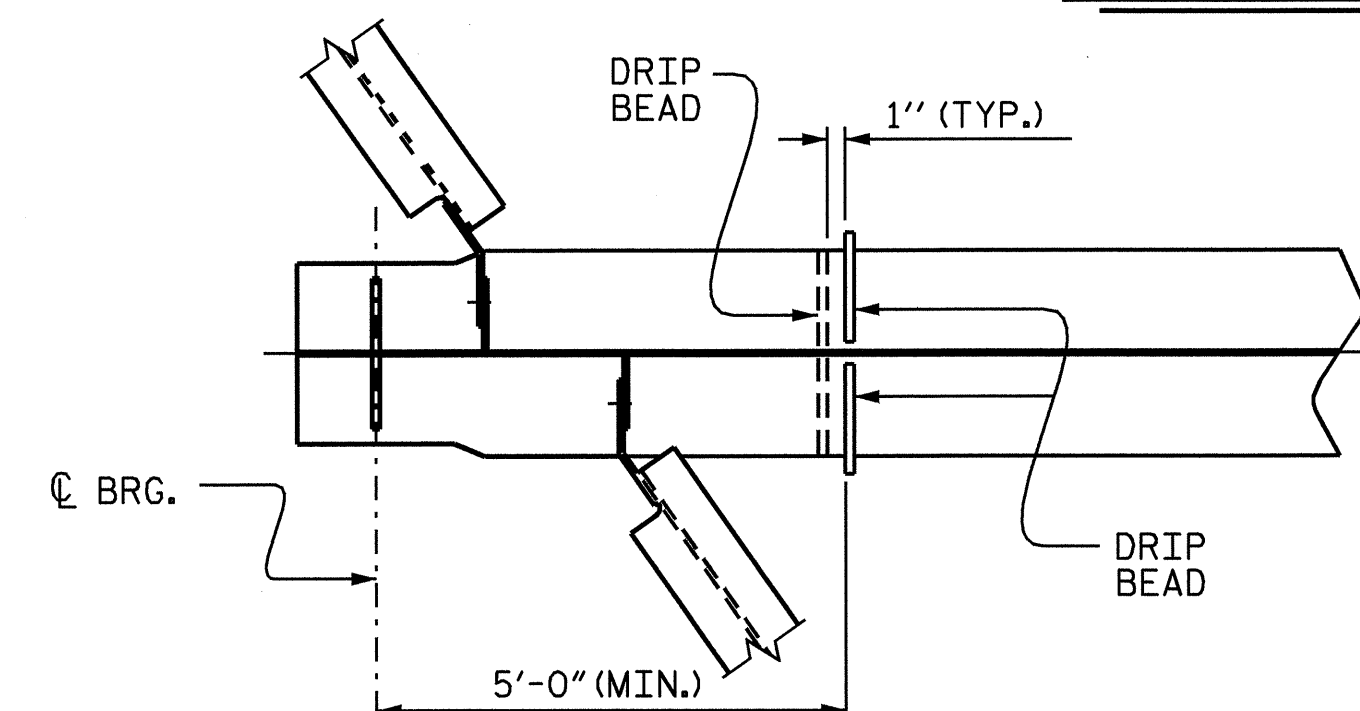


TYPICAL GUSSET PLATE CONNECTION

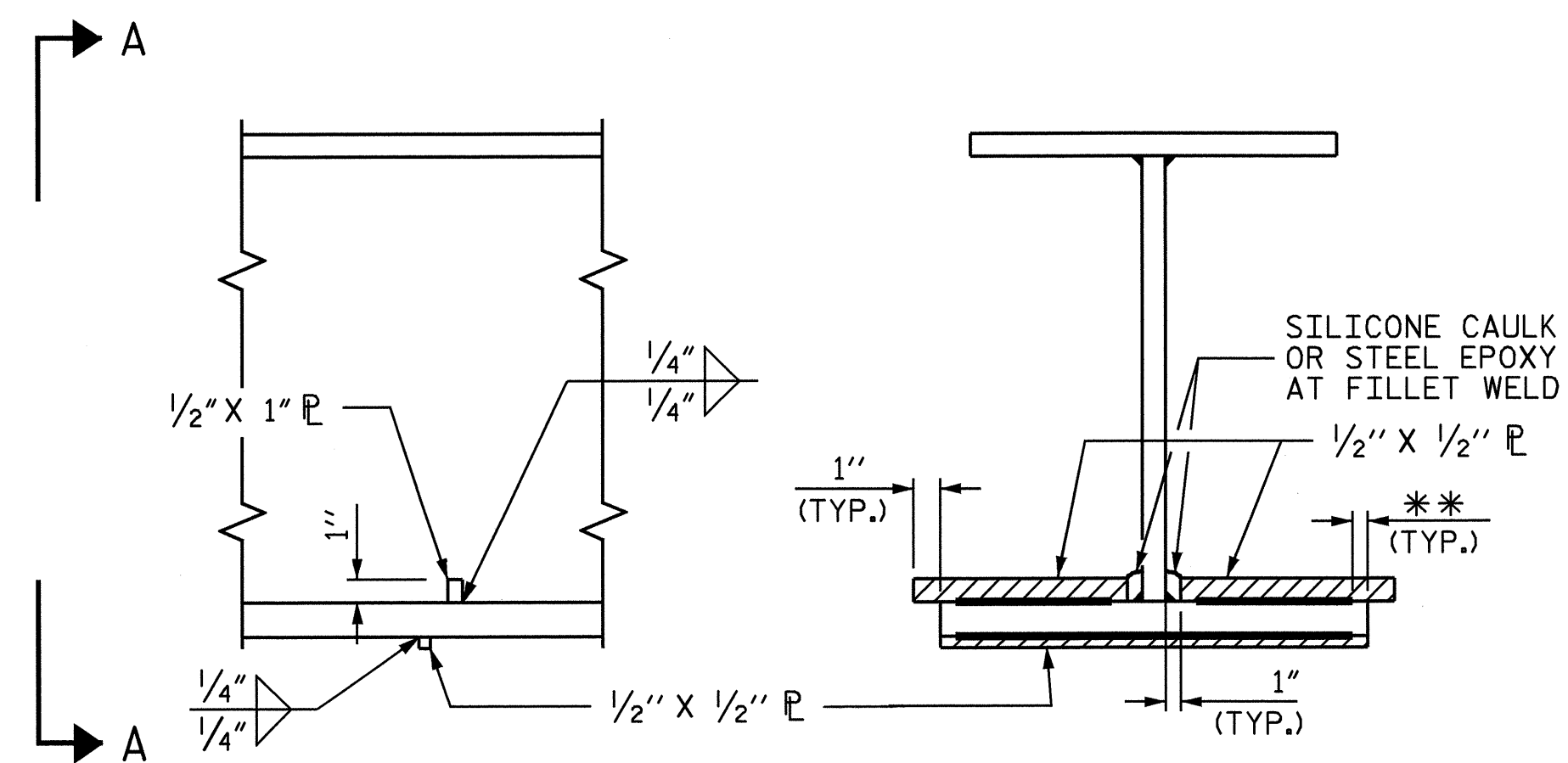


TYPICAL STIFFENER OR CONNECTOR PLATE CONNECTIONS

WELD TERMINATION DETAILS



PART PLAN - BOTTOM FLANGE



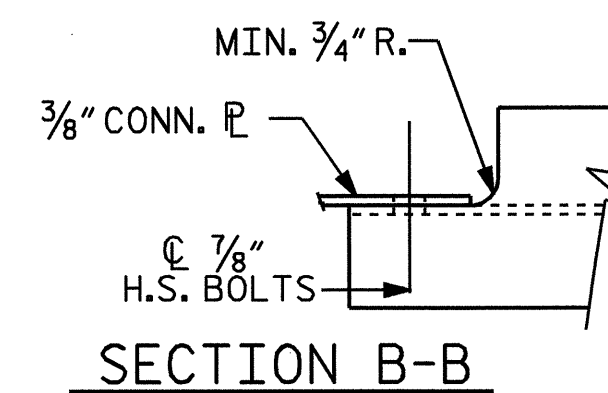
SECTION

VIEW A-A

**SEE "WELD TERMINATION DETAILS"

DRIP BEAD DETAILS

TYPICAL FOR ALL GIRDERS



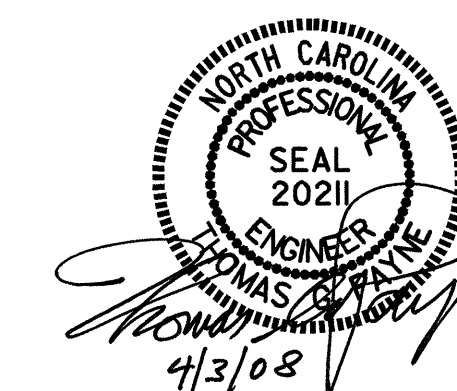
SECTION B-B

PROJECT NO. B-3661
 HAYWOOD COUNTY
 STATION: 16+65.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

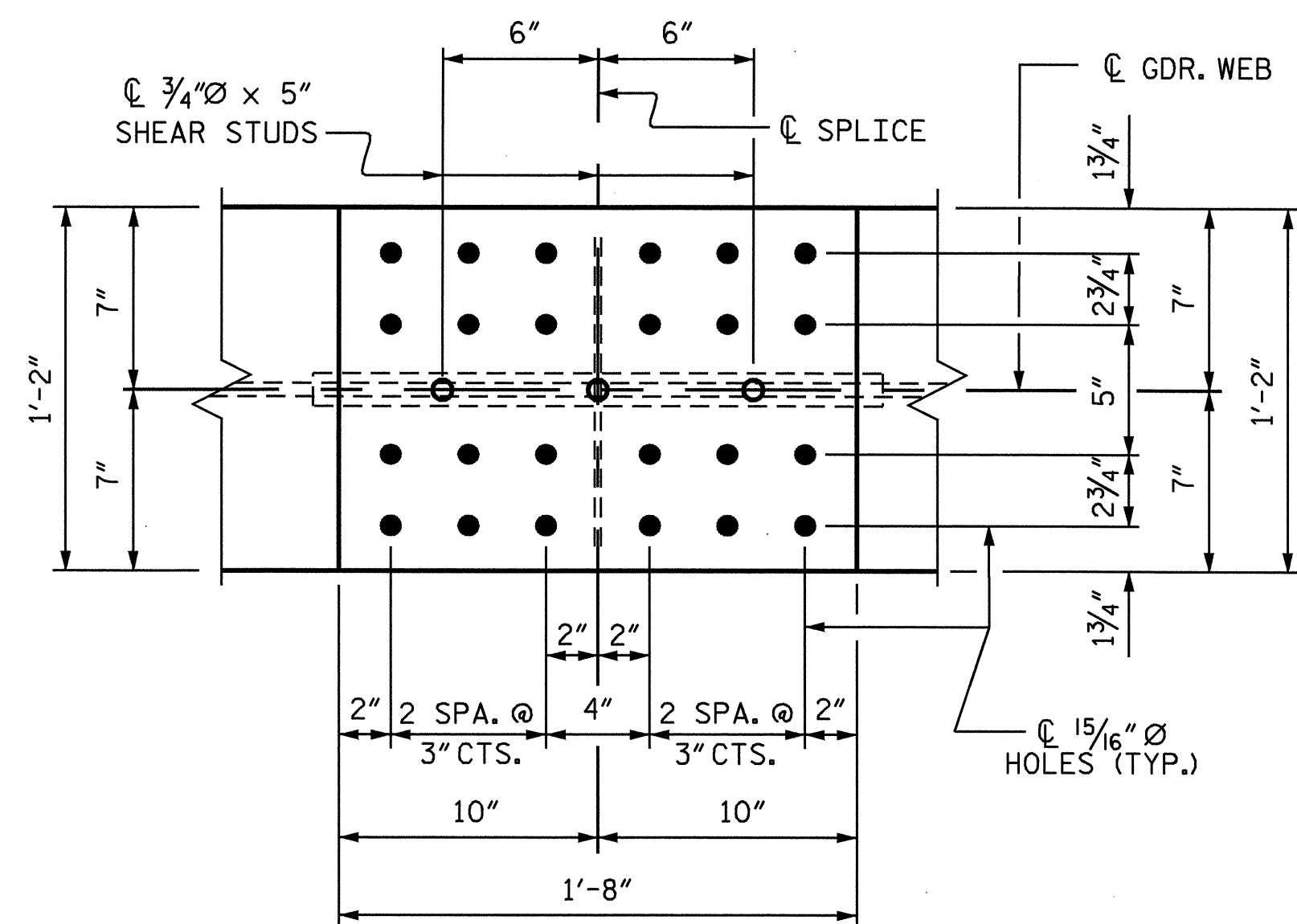
SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS



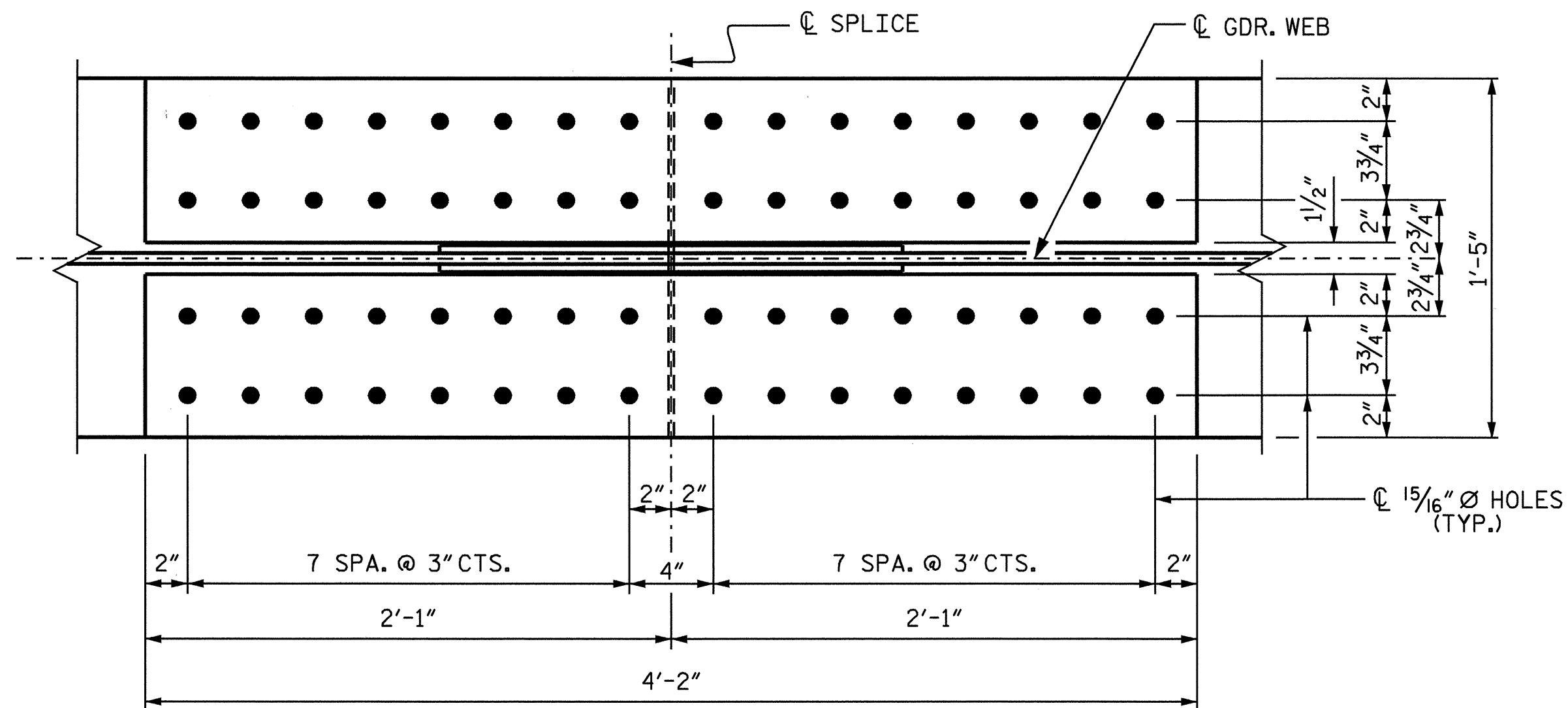
DRAWN BY: KEITH D. LAYNE DATE: 03/07
 CHECKED BY: M. K. BEARD DATE: 07/07

02-APR-2008 07:52
 FASTRUCTA\FinalB-3661.ed.SS.dgn
 klayne

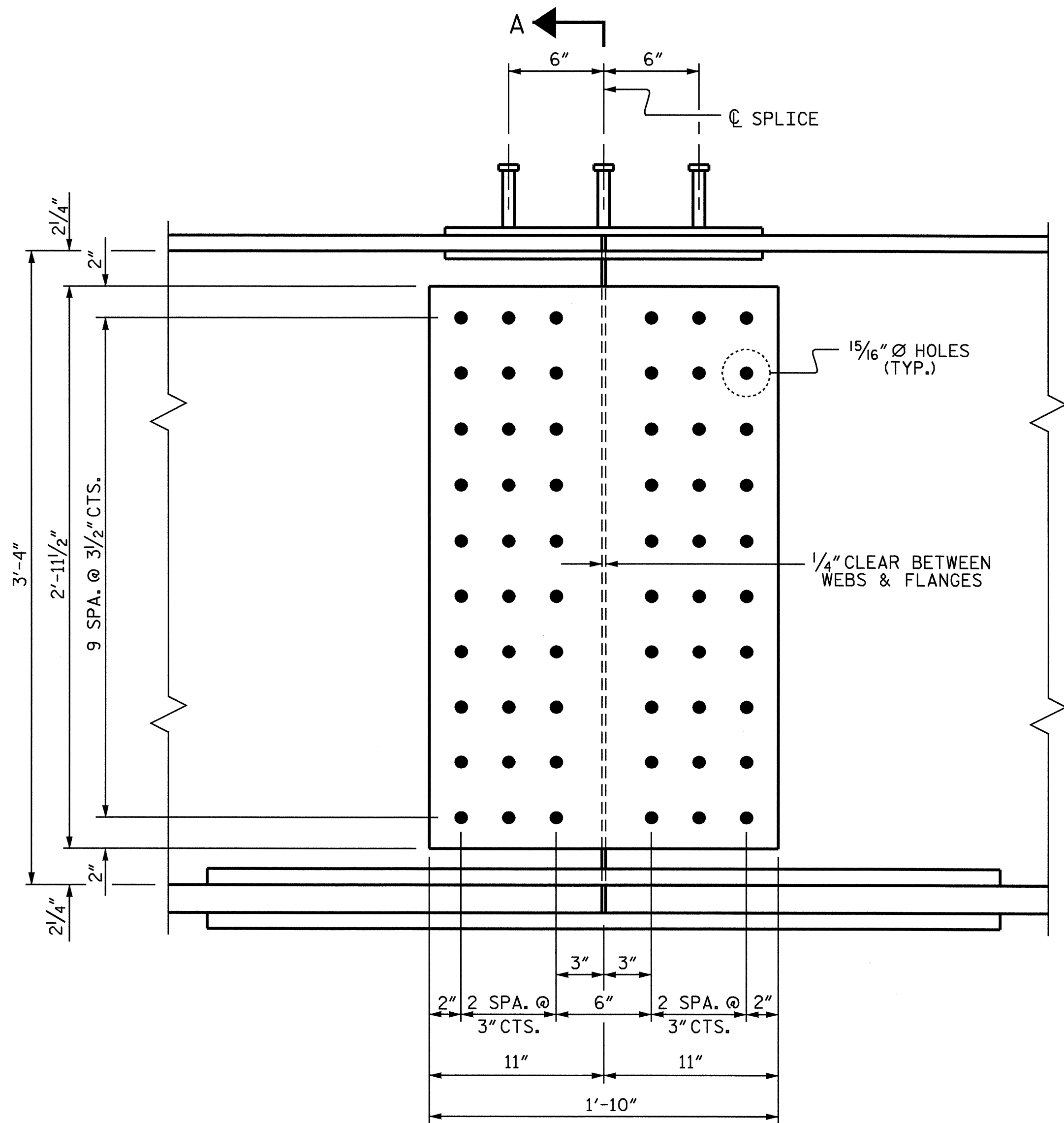
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			22



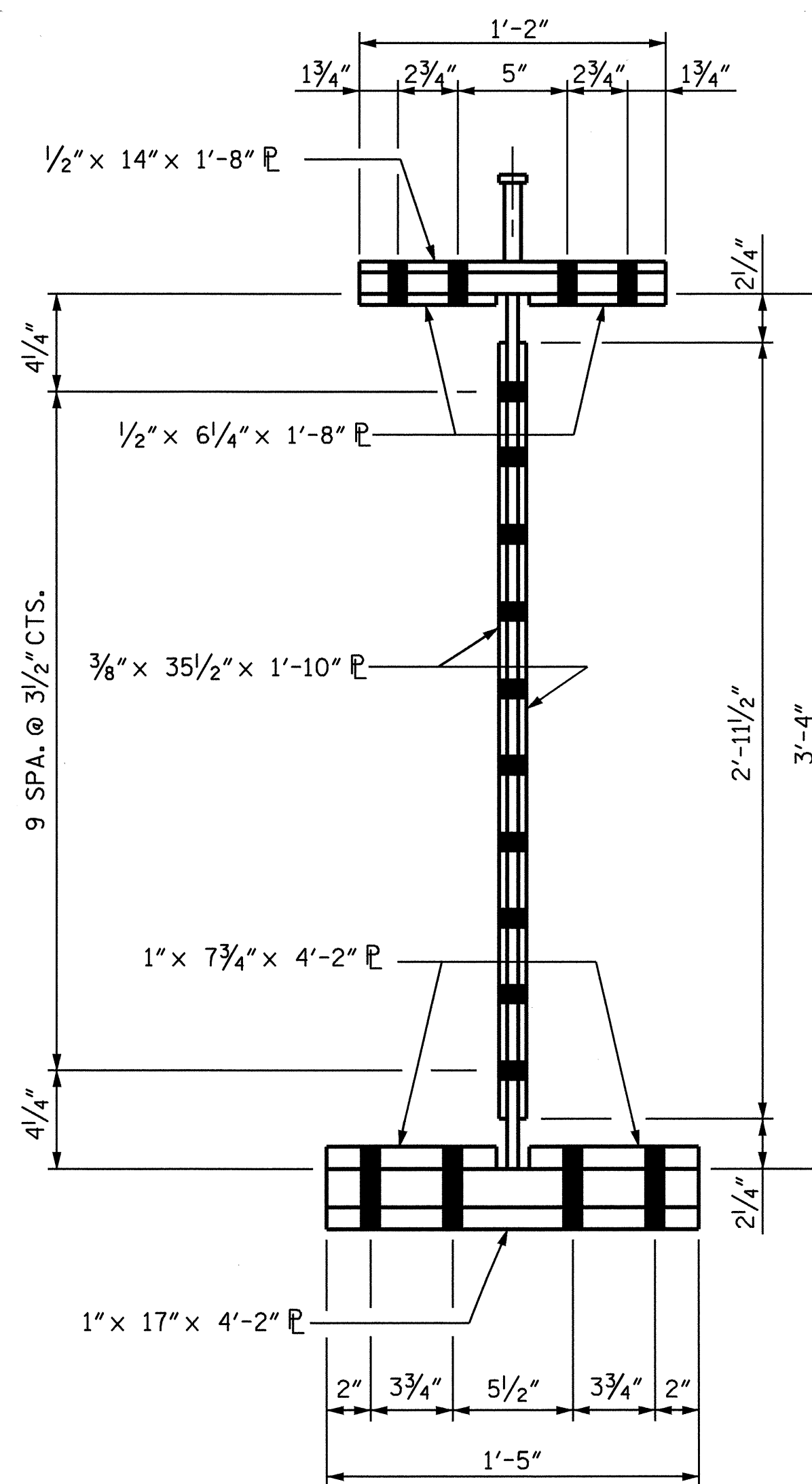
PLAN (TOP OF TOP FLANGE)



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A

NOTES

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE 7/8" DIA. HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

A CHARPY V-NOTCH TEST IS REQUIRED FOR WEB PLATES, BOTTOM FLANGE PLATES, BOTTOM FLANGE SPLICE PLATES AND WEB SPLICE PLATES (IF USED) FOR ALL GIRDERS AND IN ACCORDANCE WITH ARTICLE 1072-9 OF THE STANDARD SPECIFICATIONS.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

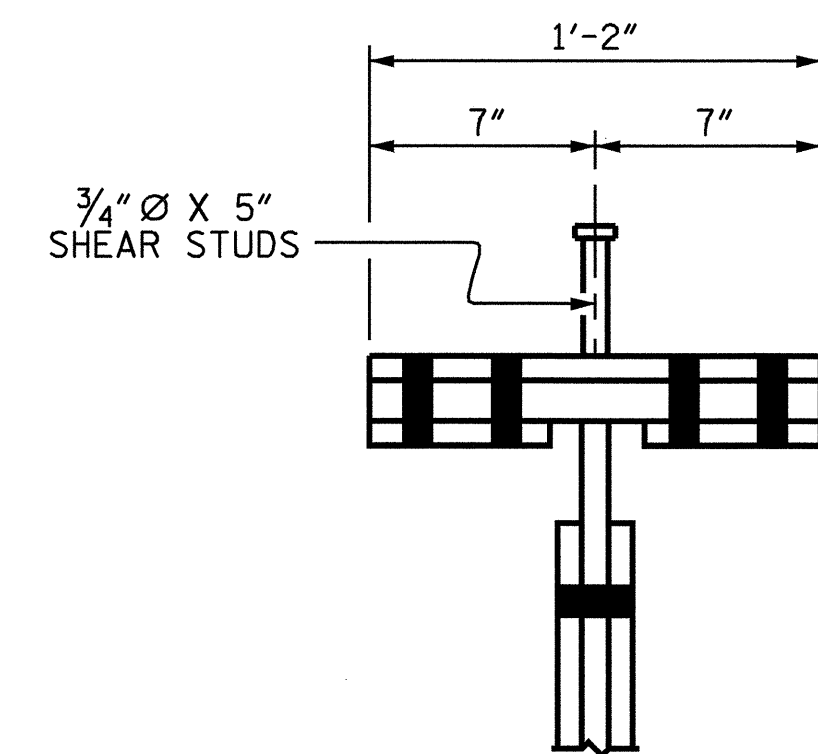
STIFFENERS ARE NOT REQUIRED ON THE OUTSIDE OF EXTERIOR GIRDERS.

SHOP SPLICES ARE PERMITTED TO LIMIT THE MAXIMUM REQUIRED FLANGE PIECE LENGTHS TO 60 FEET AND WEB PIECE LENGTHS TO 45 FEET. PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 15 FEET OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

END OF GIRDERS SHALL BE PLUMB.

TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

PROJECT NO. B-3661
 HAYWOOD COUNTY
 STATION: 16+65.00 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUPERSTRUCTURE					
STRUCTURAL STEEL					
DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					22

DRAWN BY: KEITH D. LAYNE DATE: 03/07
 CHECKED BY: M. K. BEARD DATE: 07/07

BOLTED FIELD SPLICE DETAILS

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

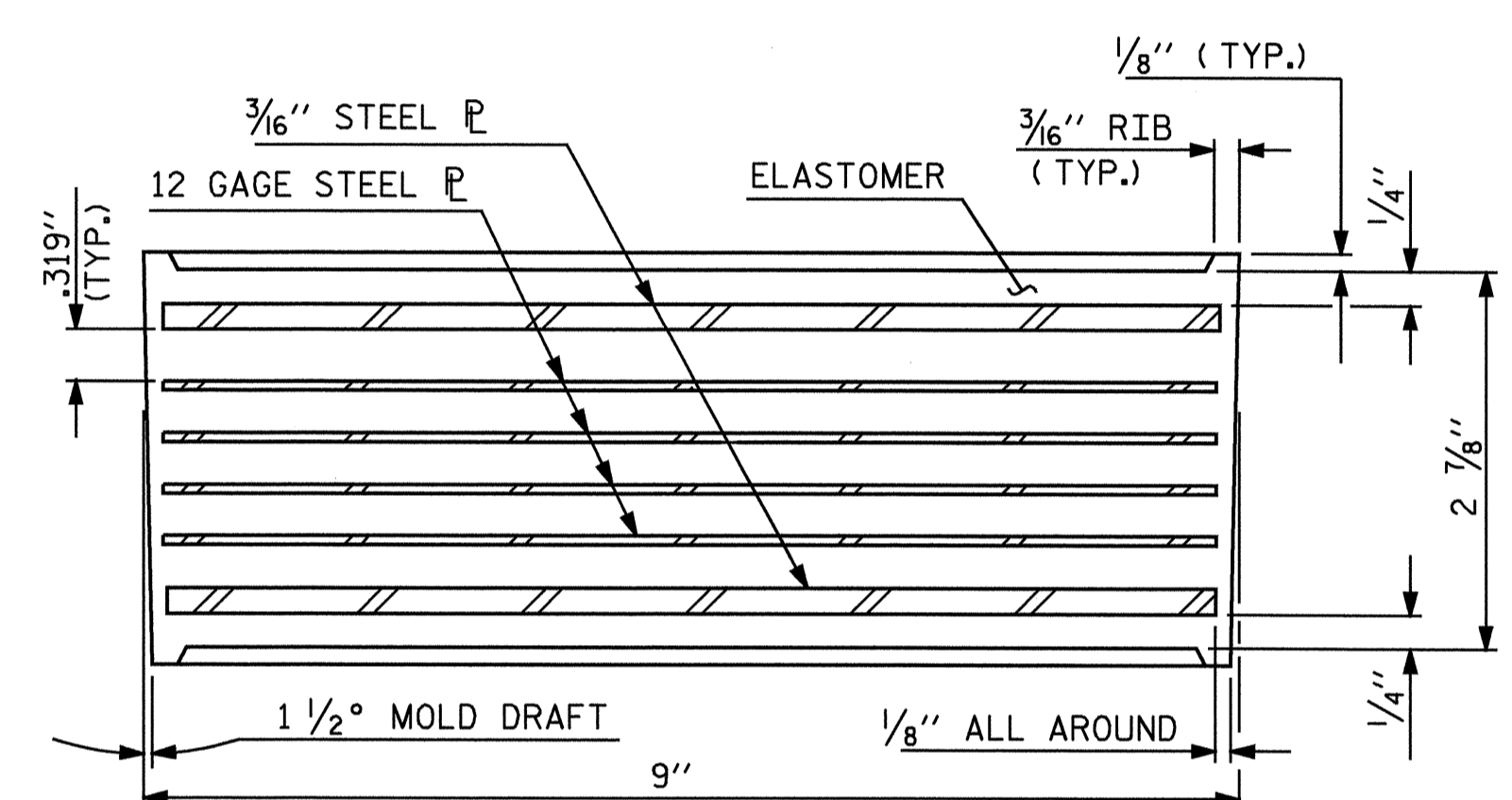
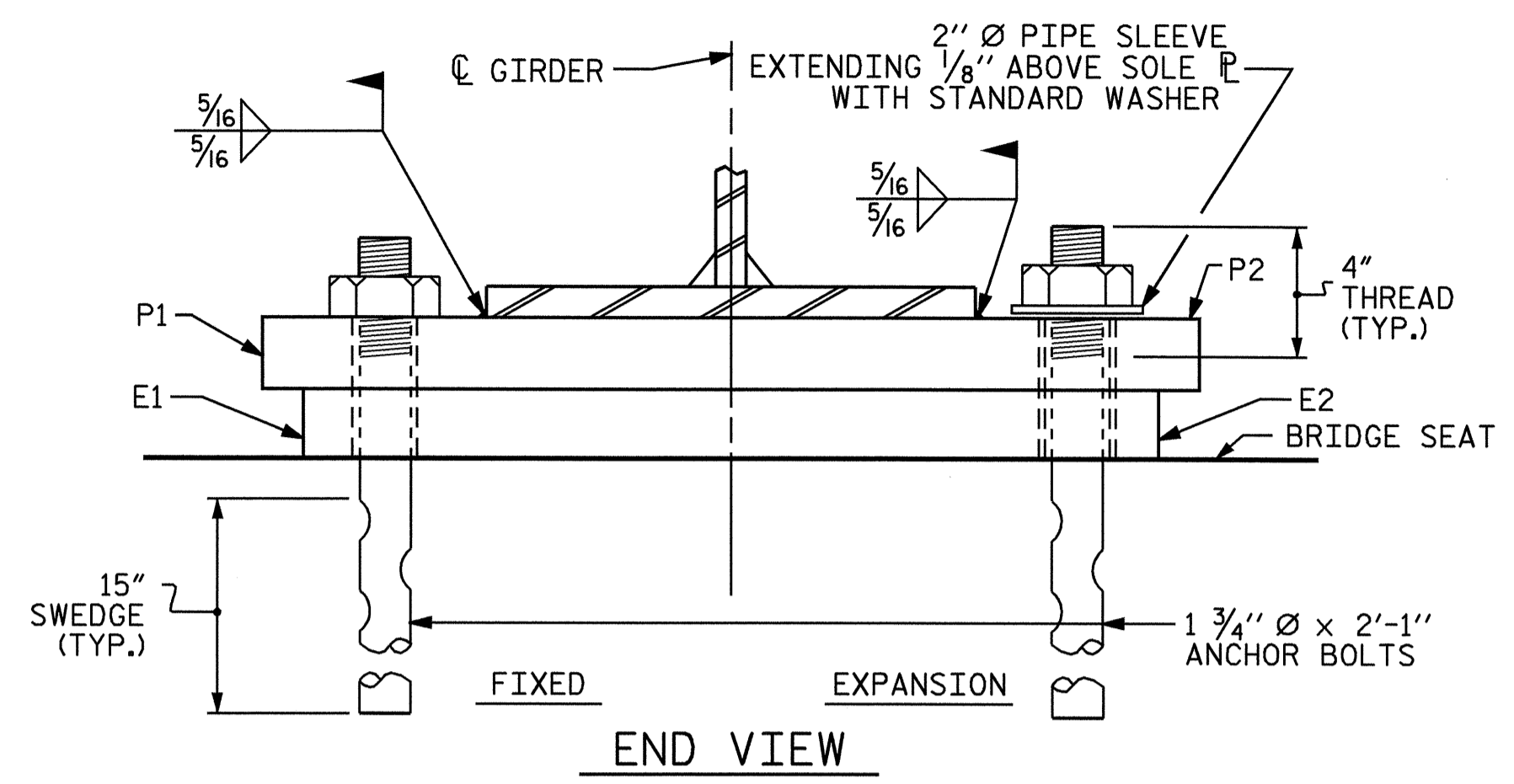
THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

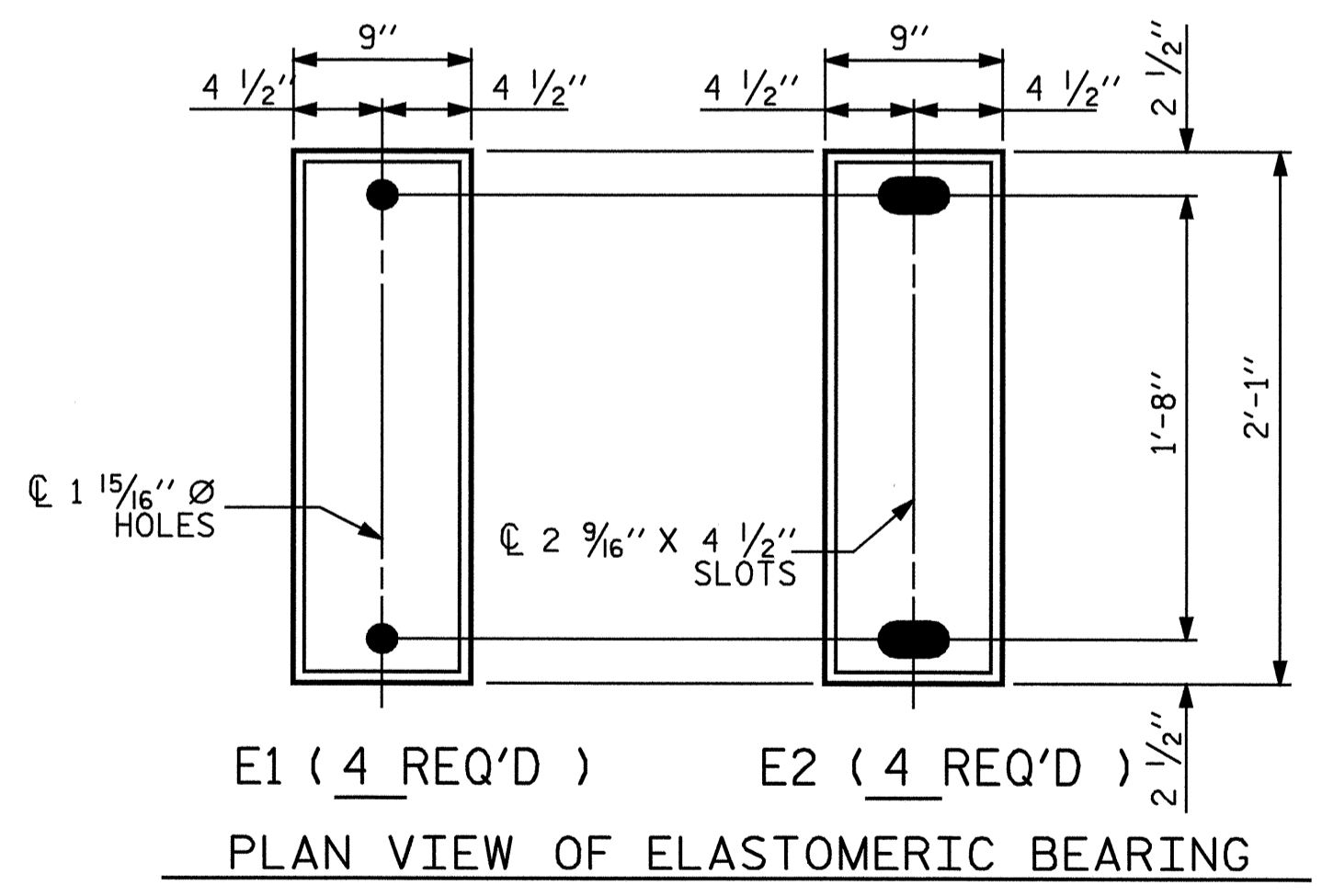
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

WHEN FIELD WELDING THE SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

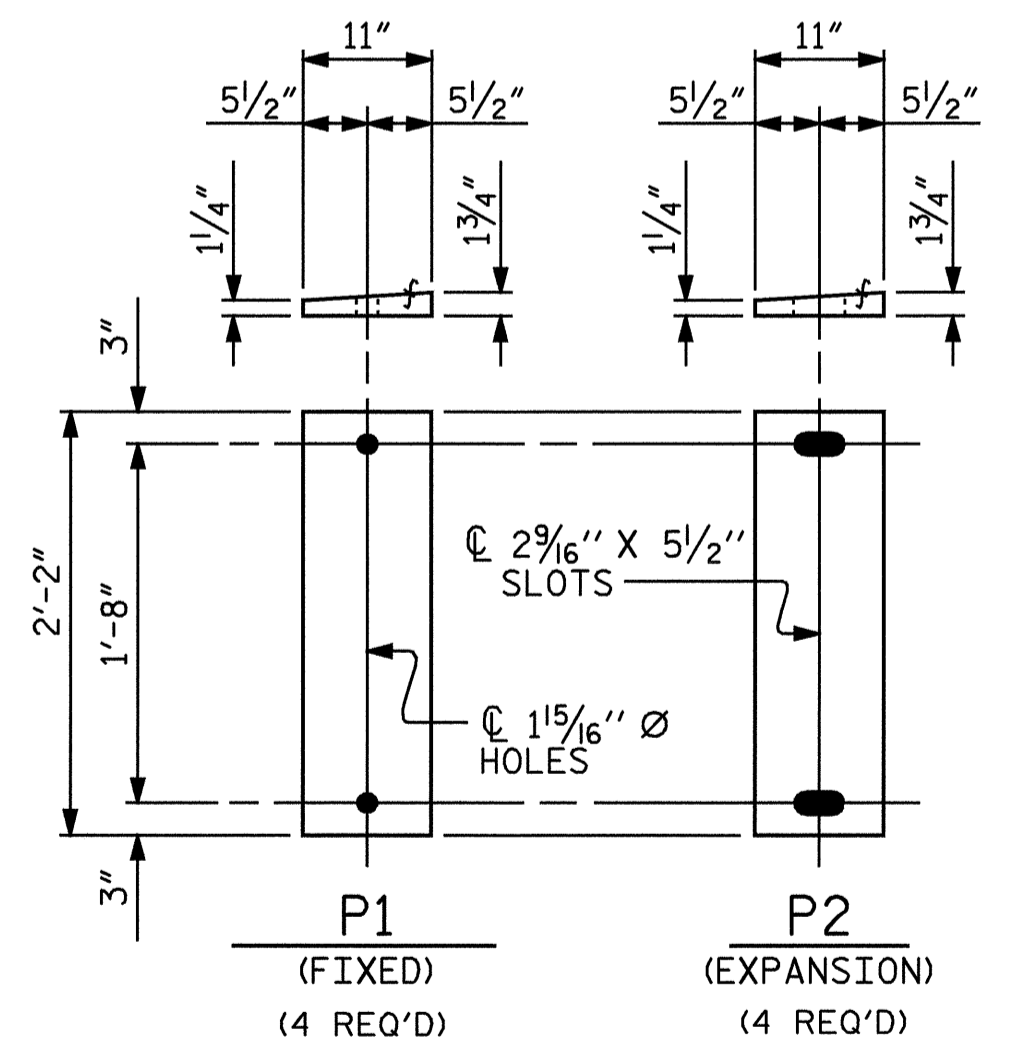
ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.



TYPICAL SECTION OF ELASTOMERIC BEARINGS



TYPE III



SOLE PLATE DETAILS ("P")

-LOAD RATINGS-	
	MAX.D.L.+L.L.
TYPE III	144 K

PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**STANDARD
 ELASTOMERIC BEARING
 DETAILS**
 (STEEL SUPERSTRUCTURE)



ASSEMBLED BY : KEITH D. LAYNE	DATE : 3/07
CHECKED BY : M. K. BEARD	DATE : 07/07
DRAWN BY : JMB 11/87	REV. 7/17/98 RWW/LES
CHECKED BY : ARB 11/87	REV. 8/16/99 MAB/LES
	REV. 10/17/00 RWW/LES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			22

NOTES

THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

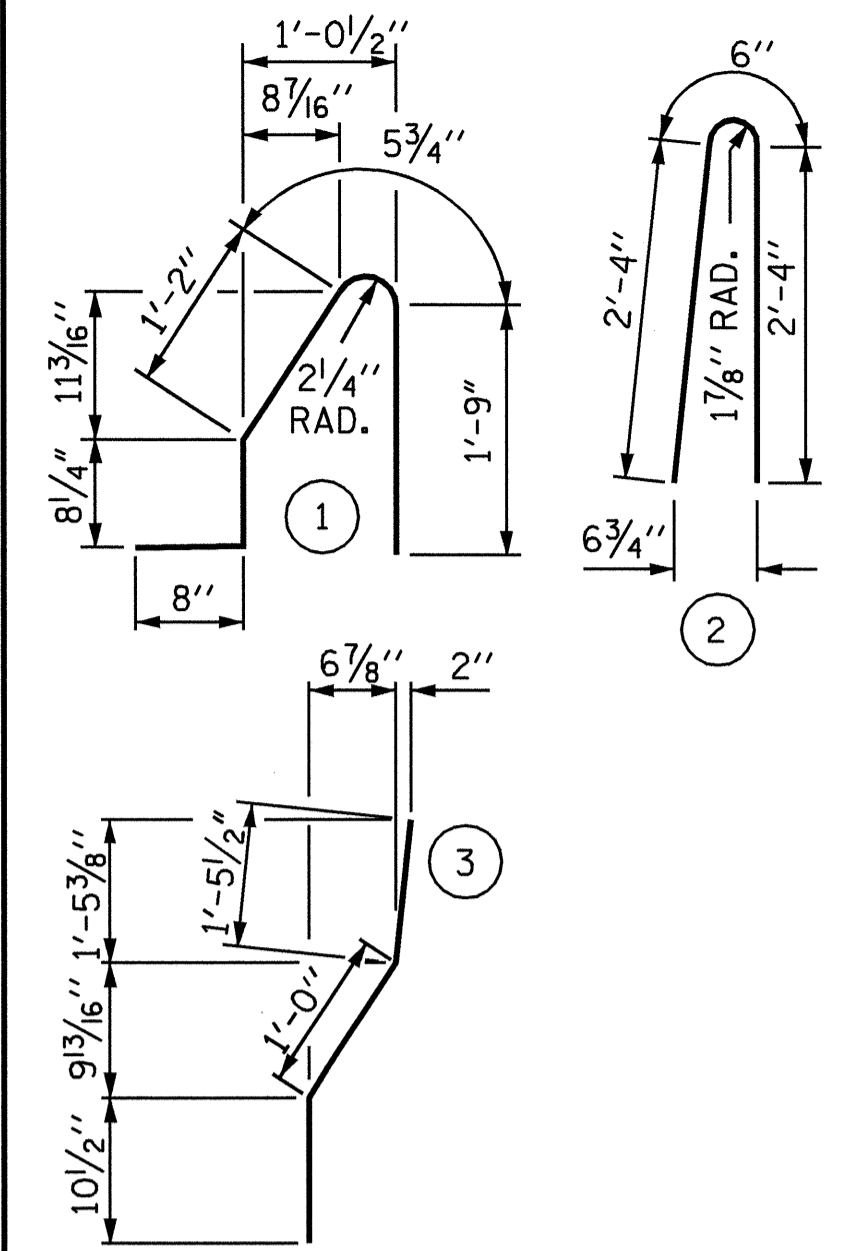
WHEN EVAZOTE JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3 AND #5 S4 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3 AND #5 S4 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

BAR TYPES

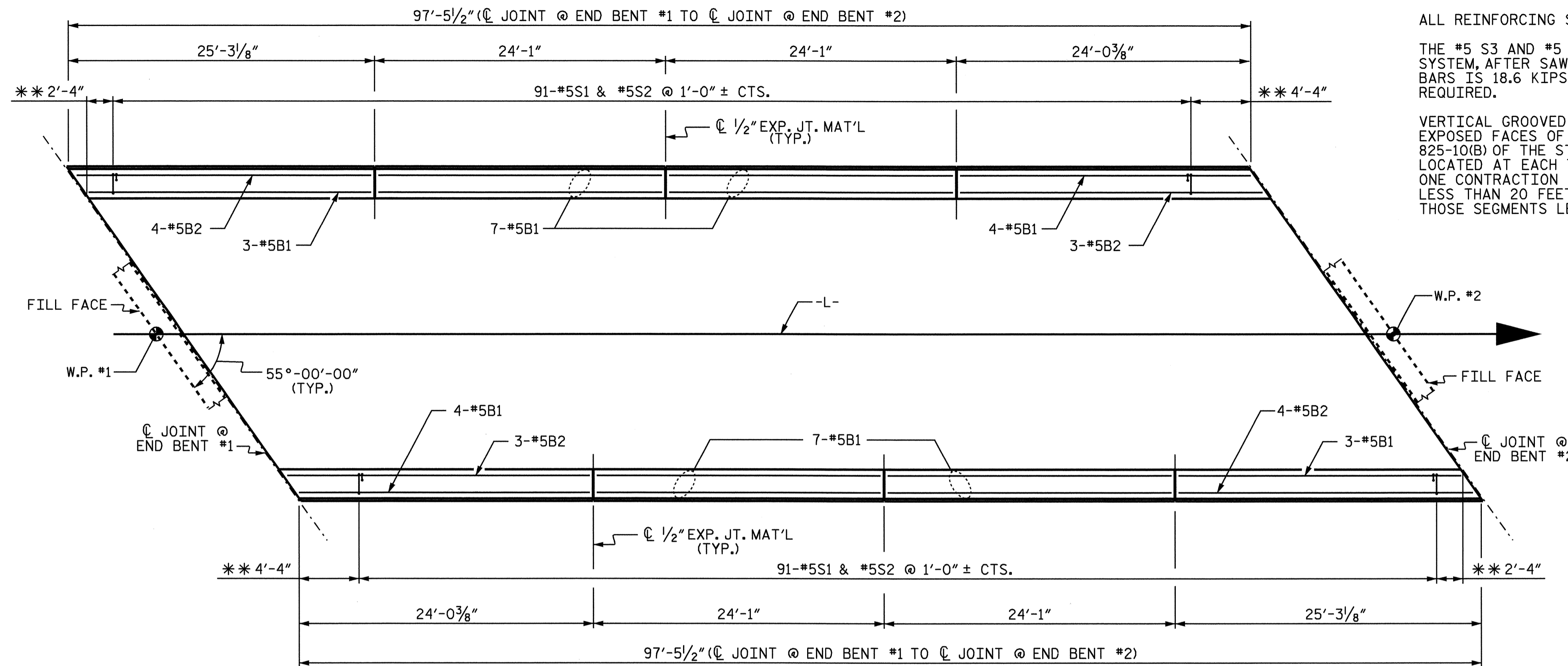


ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

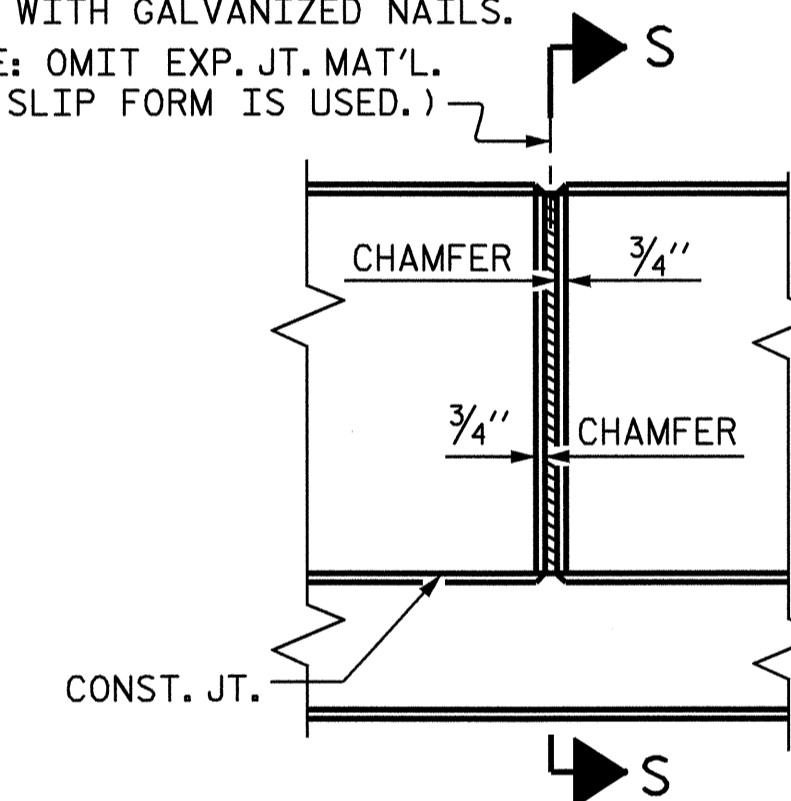
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* S1	182	#5	1	4'-9"	902
* S2	182	#5	2	5'-2"	981
* S3	12	#5	3	3'-4"	42
* S4	12	#5	STR	3'-2"	40
* B1	42	#5	STR	23'-7"	1,033
* B2	14	#5	STR	24'-7"	359
* EPOXY COATED REINFORCING STEEL					3,357 LBS.
CLASS AA CONCRETE					19.5 CU. YDS.
CONCRETE BARRIER RAIL					194.92 LIN. FT.



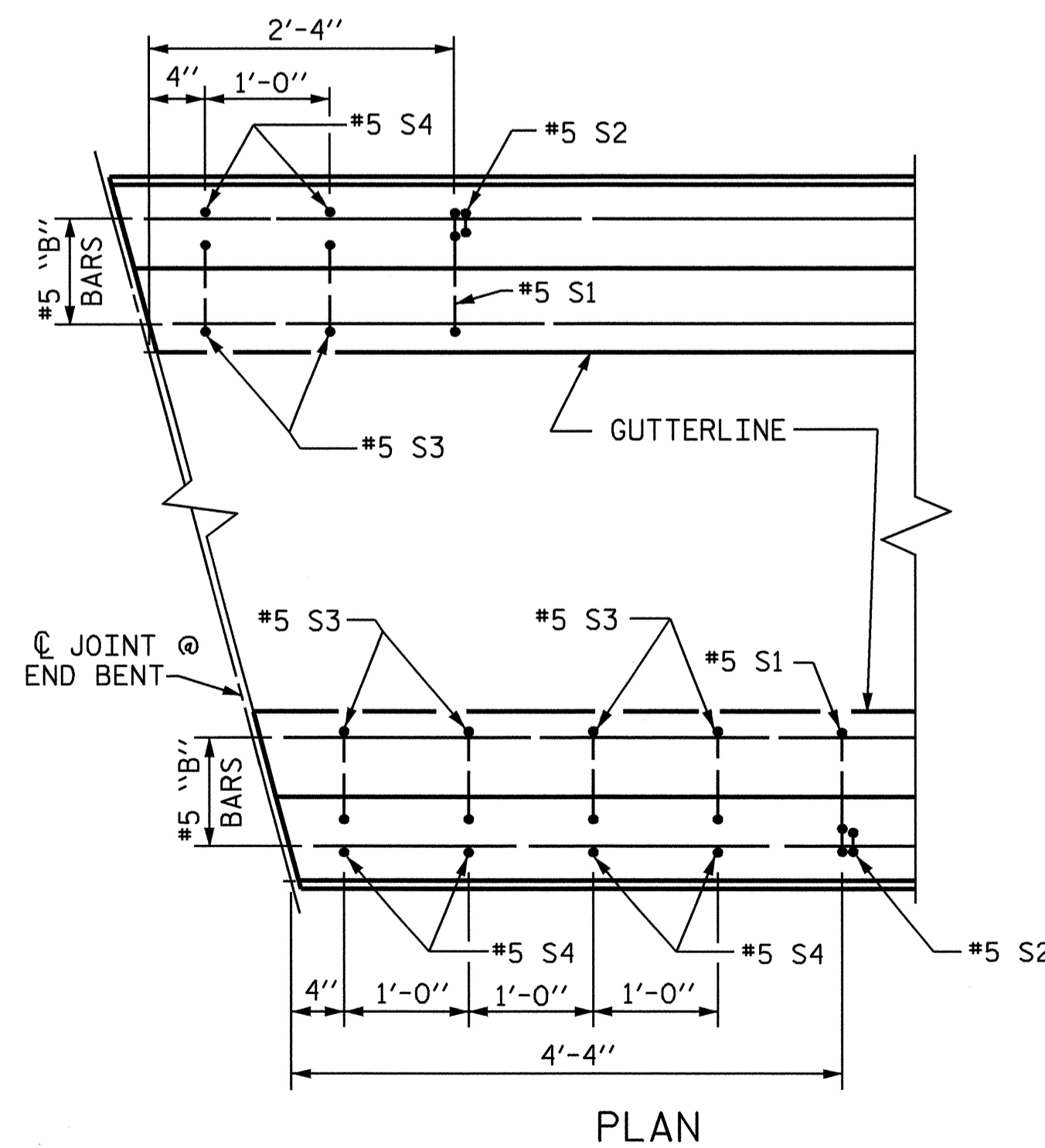
PLAN OF BARRIER RAIL

** FOR REINFORCING STEEL AT END OF BARRIER RAIL, SEE "END OF RAIL DETAILS."

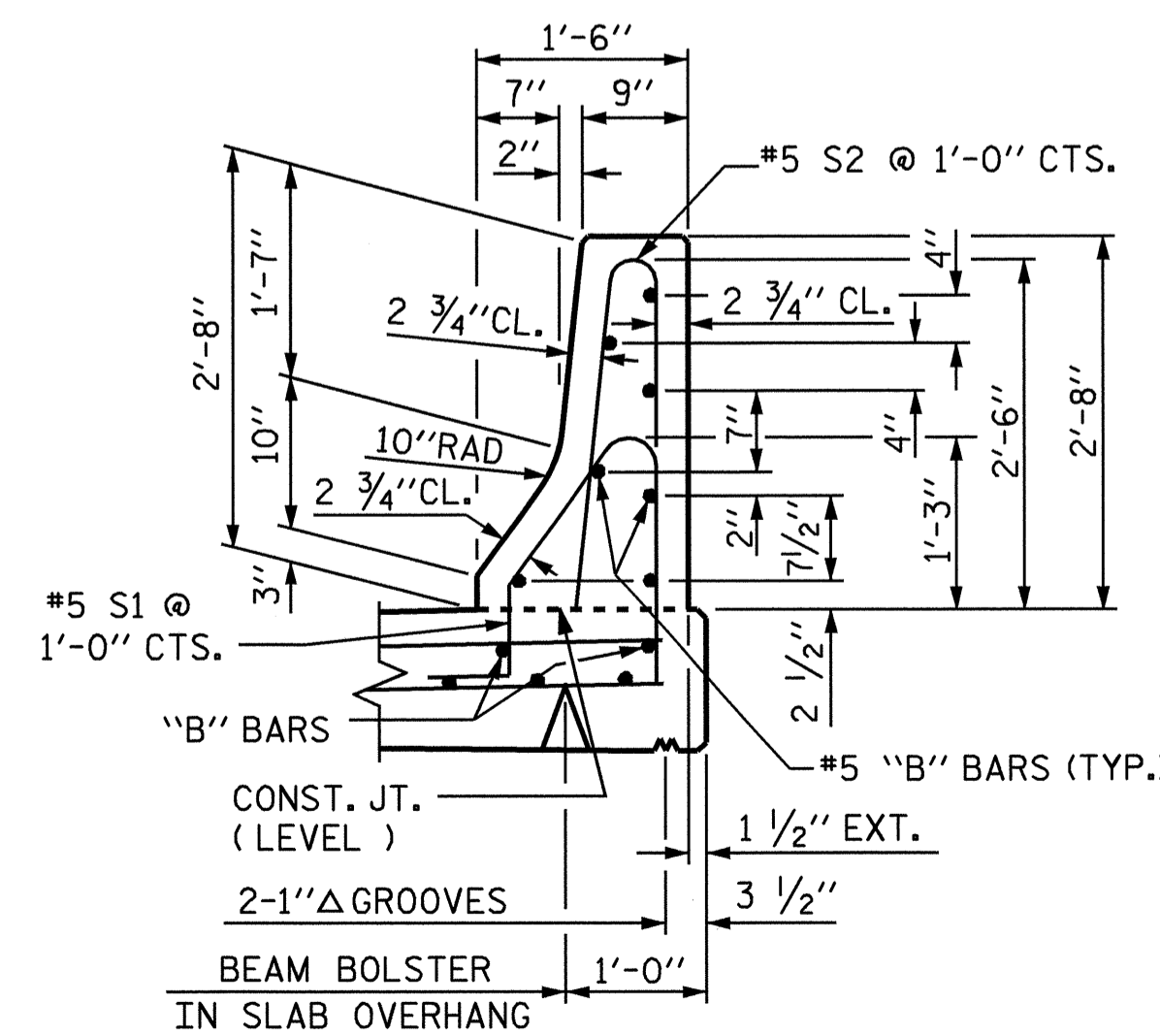
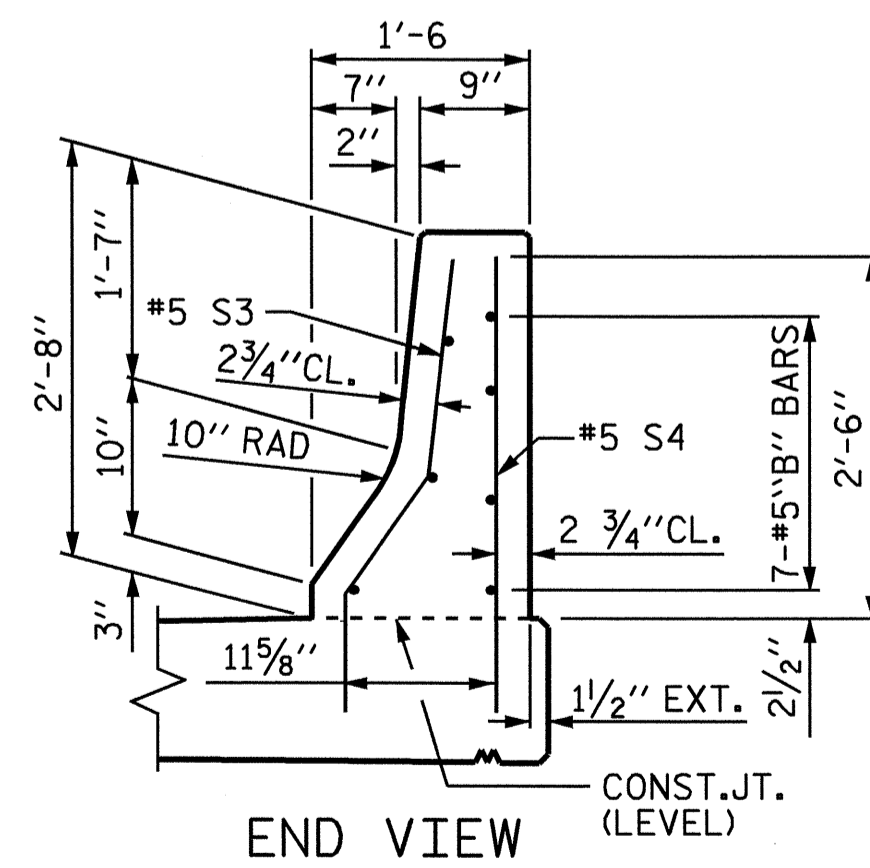
1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



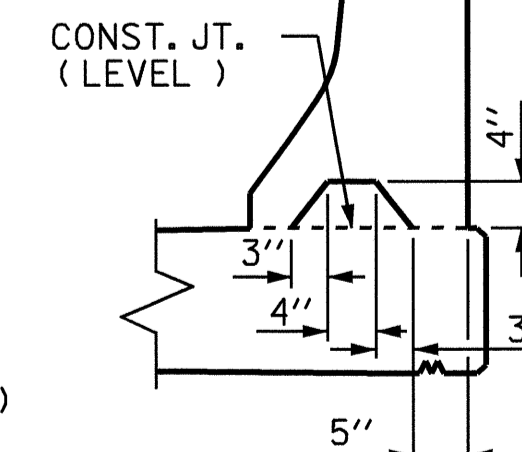
**ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS**



**END OF RAIL DETAILS
FOR ADHESIVE ANCHORING AT SAWED JOINTS**



SECTION THRU RAIL



**SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)**



PROJECT NO. B-3661
HAYWOOD COUNTY
STATION: 16+65.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
CONCRETE
BARRIER RAIL

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
1			3			TOTAL SHEETS	22
2			4				

STD. NO. CBRI

ASSEMBLED BY : KEITH D. LAYNE	DATE : 03/07
CHECKED BY : M. K. BEARD	DATE : 07/07
DRAWN BY : ARB 5/87	REV. 10/17/00 RWW/LES
CHECKED BY : SJD 9/87	REV. 5/7/03R RWW/JTE
	REV. 5/1/06 TLA/GM

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 1/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

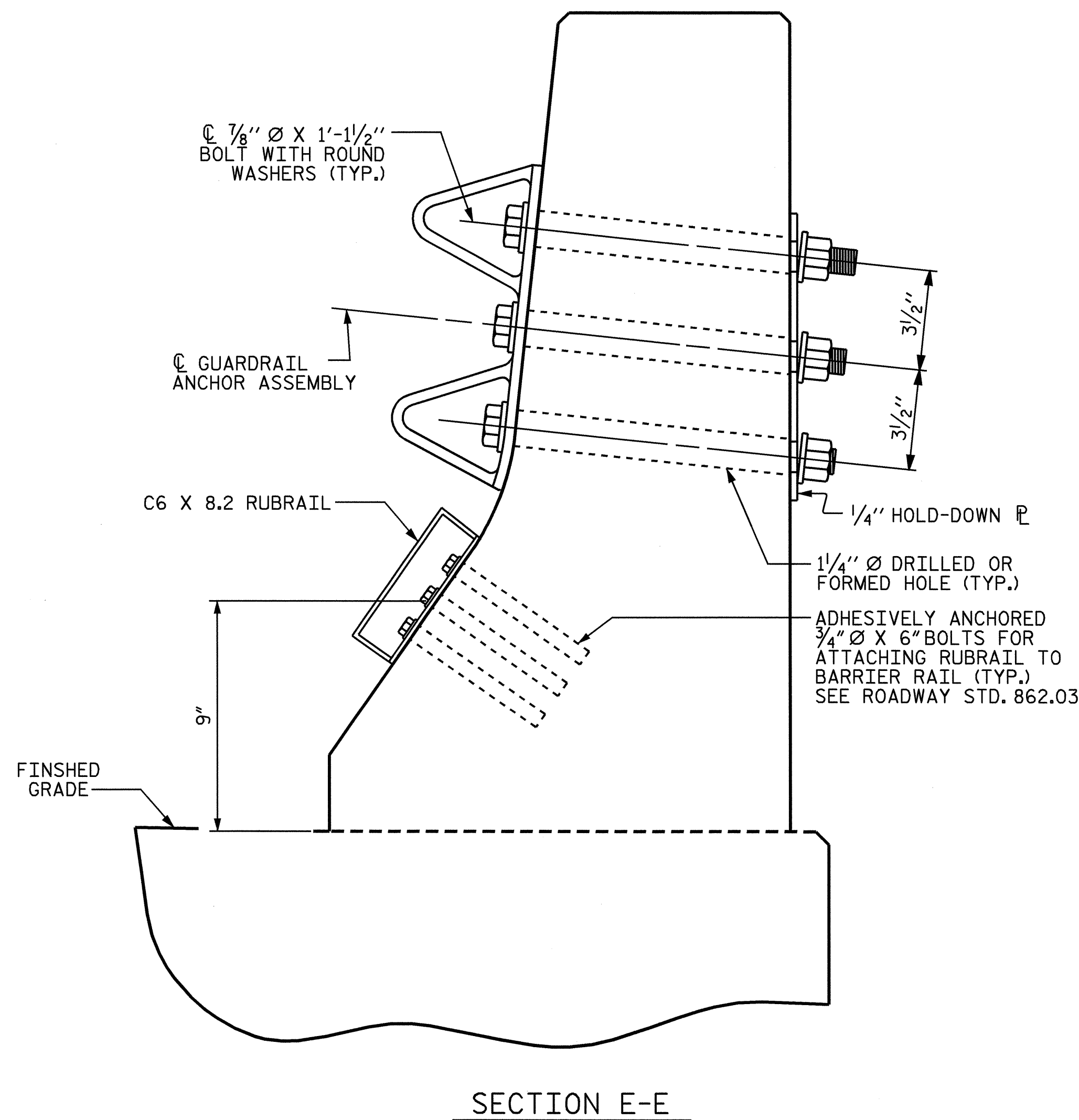
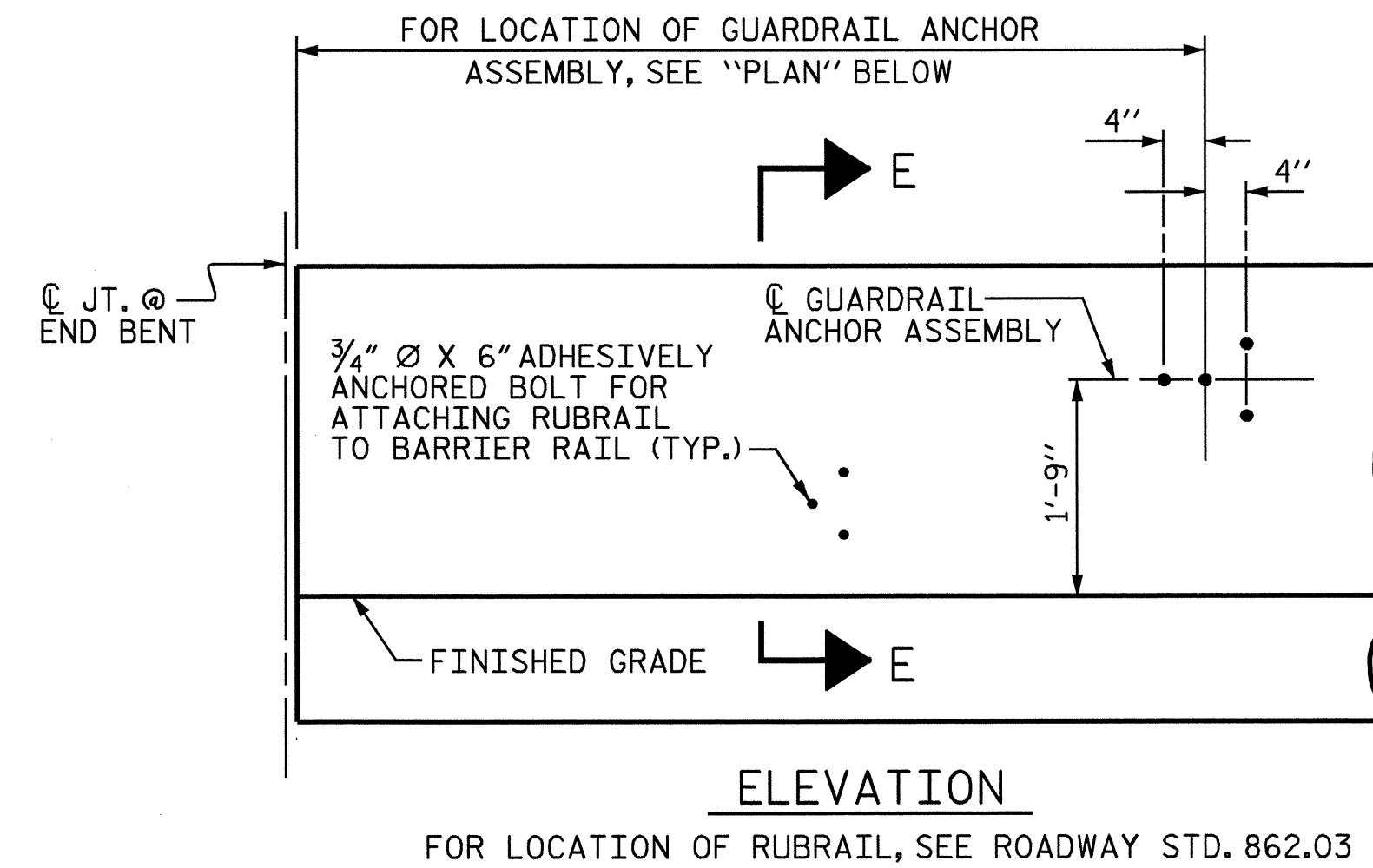
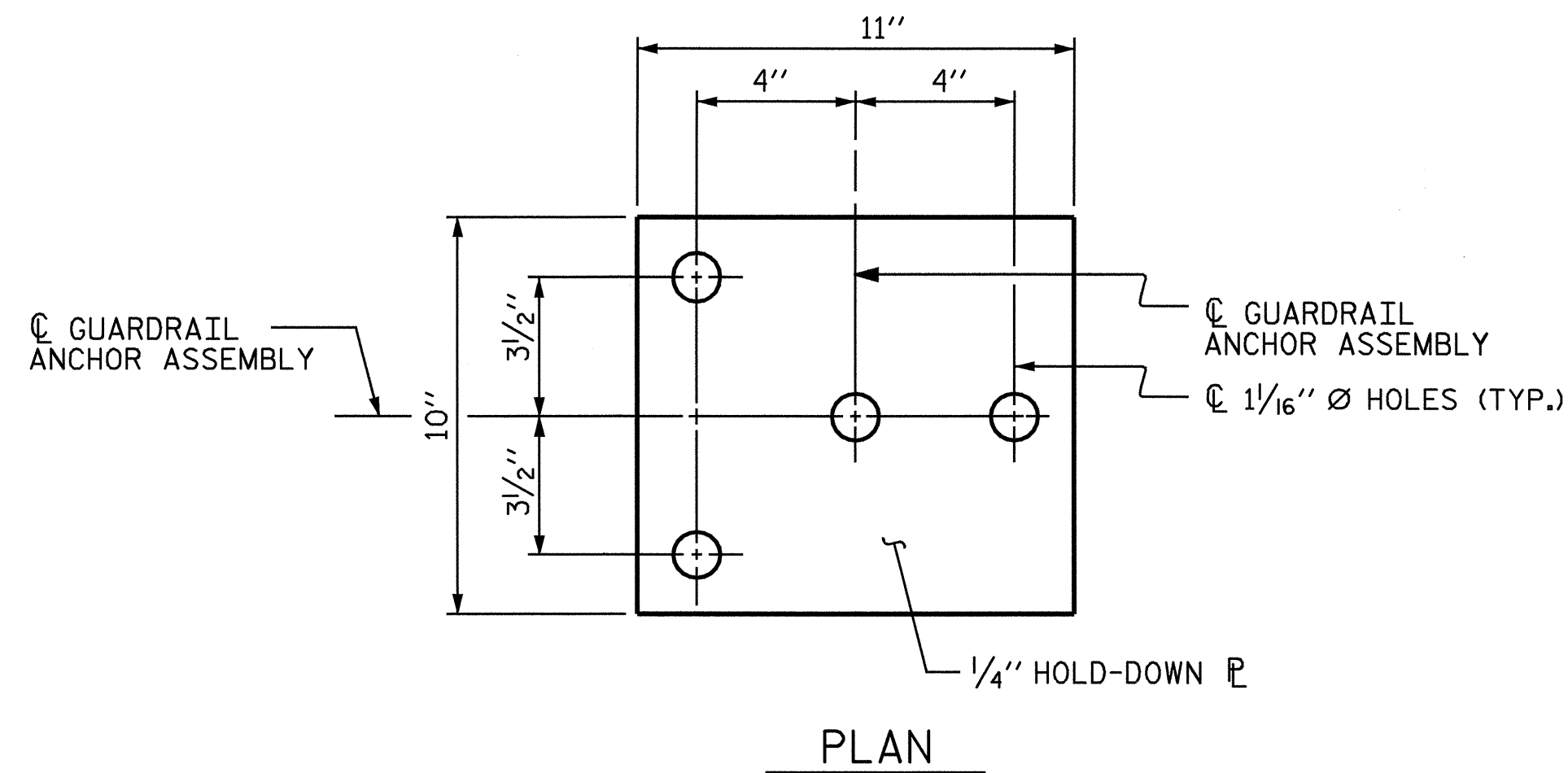
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

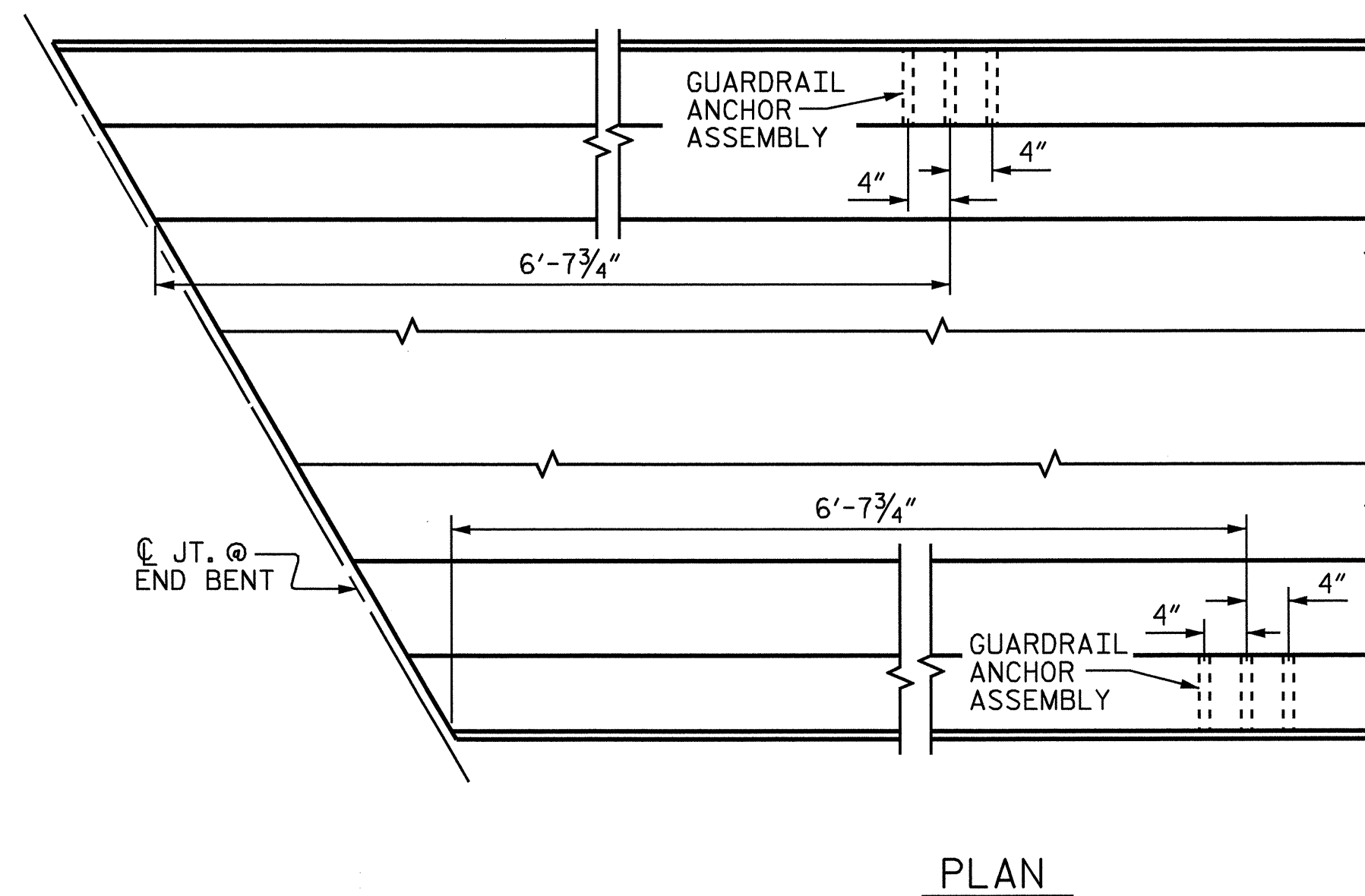
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" BOLT IS 12 KIPS, FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

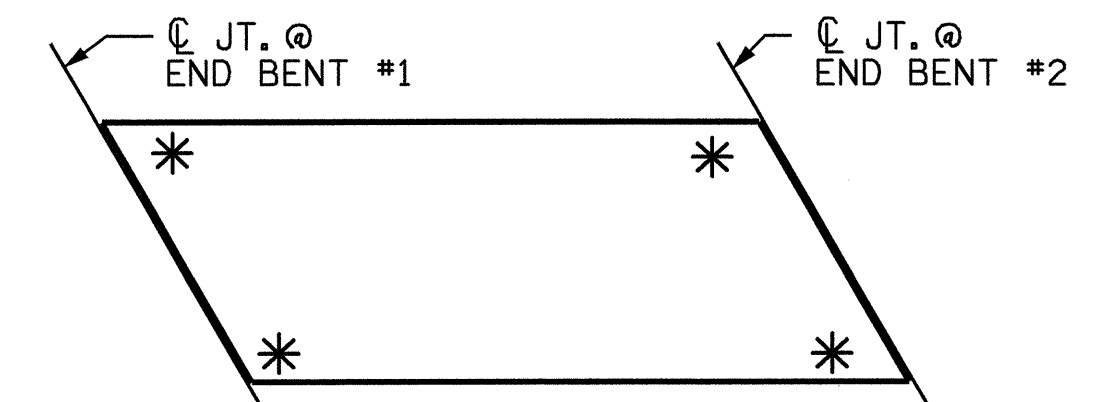


GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.

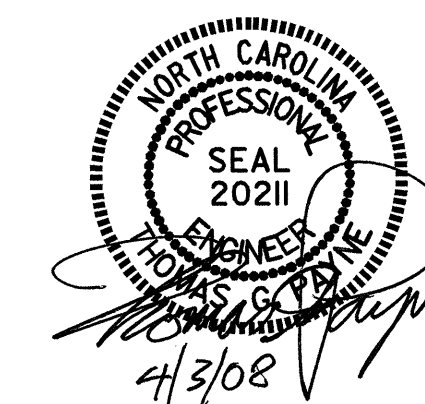


SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL



ASSEMBLED BY : KEITH D. LAYNE	DATE : 03/07
CHECKED BY : M. K. BEARD	DATE : 07/07
DRAWN BY : TLA 5/06	ADDED 5/1/06 KMM/GM
CHECKED BY : GM 5/06	

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SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

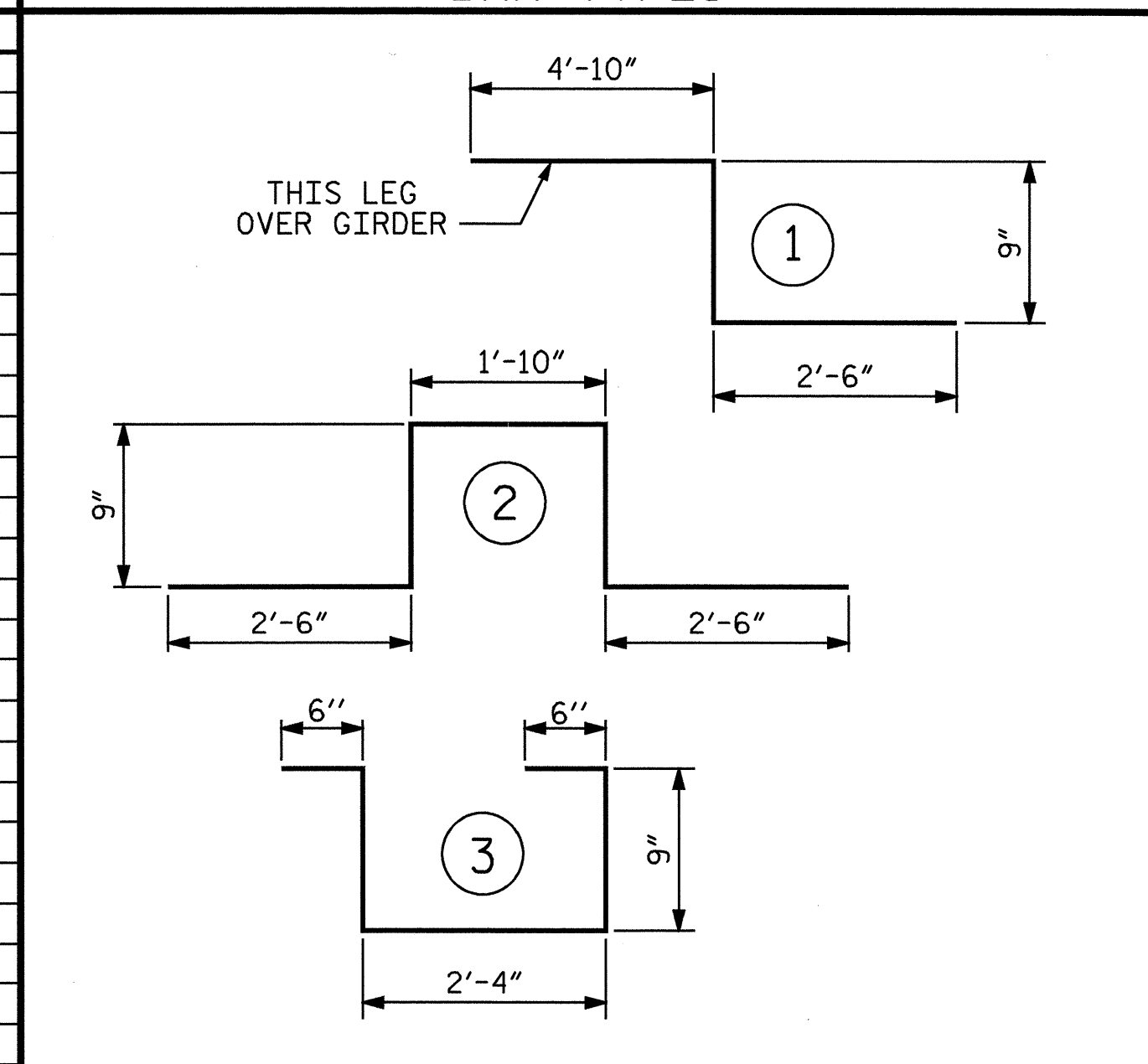
GROOVING BRIDGE FLOORS

APPROACH SLABS	671 SQ. FT.
BRIDGE DECK	2396 SQ. FT.
TOTAL	3067 SQ. FT.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	129	#5	STR	30'-11"	4,160	A211	4	#5	STR	12'-11"	54
						A212	4	#5	STR	11'-3"	47
* A101	4	#5	STR	29'-7"	123	A213	4	#5	STR	9'-7"	40
* A102	4	#5	STR	27'-11"	116	A214	4	#5	STR	7'-11"	33
* A103	4	#5	STR	26'-3"	110	A215	4	#5	STR	6'-3"	26
* A104	4	#5	STR	24'-7"	103	A216	4	#5	STR	4'-7"	19
* A105	4	#5	STR	22'-11"	96	A217	4	#5	STR	2'-11"	12
* A106	4	#5	STR	21'-3"	89	A218	4	#5	STR	1'-3"	5
* A107	4	#5	STR	19'-7"	82						
* A108	4	#5	STR	17'-11"	75	* B1	88	#4	STR	25'-9"	1,514
* A109	4	#5	STR	16'-3"	68	B2	70	#5	STR	49'-7"	3,620
* A110	4	#5	STR	14'-7"	61						
* A111	4	#5	STR	12'-11"	54	* G1	2	#5	STR	37'-9"	79
* A112	4	#5	STR	11'-3"	47						
* A113	4	#5	STR	9'-7"	40	* K1	12	#5	1	8'-1"	101
* A114	4	#5	STR	7'-11"	33	* K2	12	#5	2	8'-4"	104
* A115	4	#5	STR	6'-3"	26	* K3	18	#5	STR	9'-5"	177
* A116	4	#5	STR	4'-7"	19						
* A117	4	#5	STR	2'-11"	12	* S1	42	#4	3	4'-10"	136
* A118	4	#5	STR	1'-3"	5						
					REINFORCING STEEL						8,939 LBS
A2	129	#5	STR	30'-11"	4,160	* EPOXY COATED REINFORCING STEEL					7,430 LBS
A201	4	#5	STR	29'-7"	123						
A202	4	#5	STR	27'-11"	116						
A203	4	#5	STR	26'-3"	110						
A204	4	#5	STR	24'-7"	103						
A205	4	#5	STR	22'-11"	96						
A206	4	#5	STR	21'-3"	89						
A207	4	#5	STR	19'-7"	82						
A208	4	#5	STR	17'-11"	75						
A209	4	#5	STR	16'-3"	68						
A210	4	#5	STR	14'-7"	61						

BAR TYPES

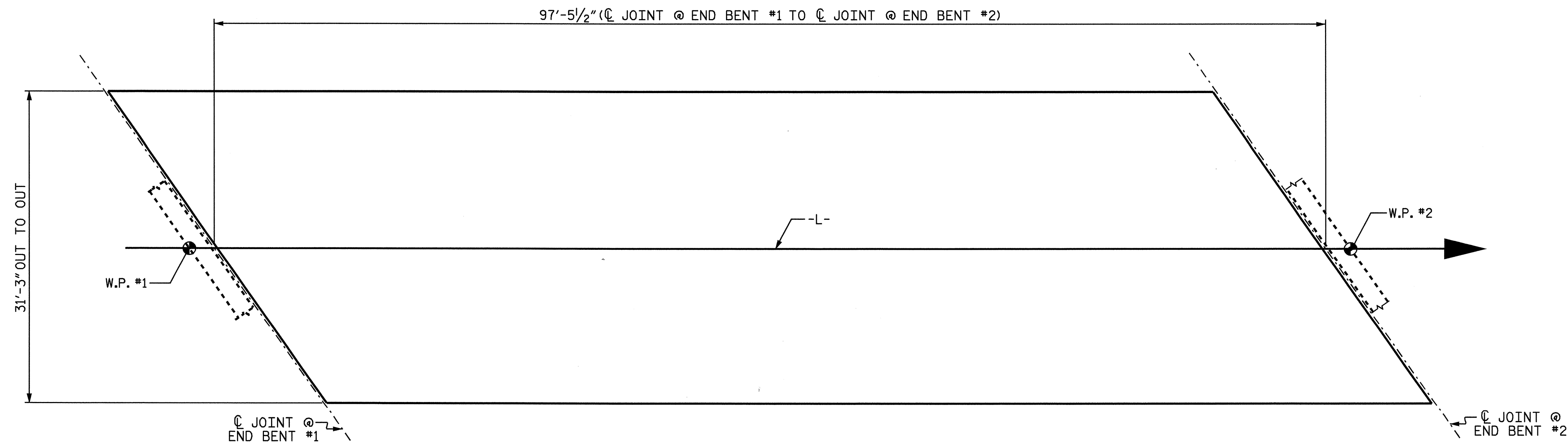


ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL

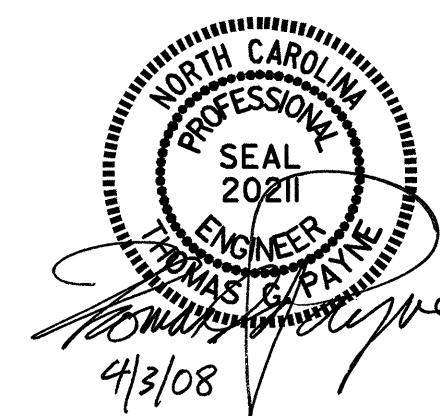
	CLASS AA CONCRETE (CU.YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
SPAN "A"	96.4	8,939	7,430
TOTALS**	96.4	8,939	7,430

** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB (SQ. FT. = 3046)

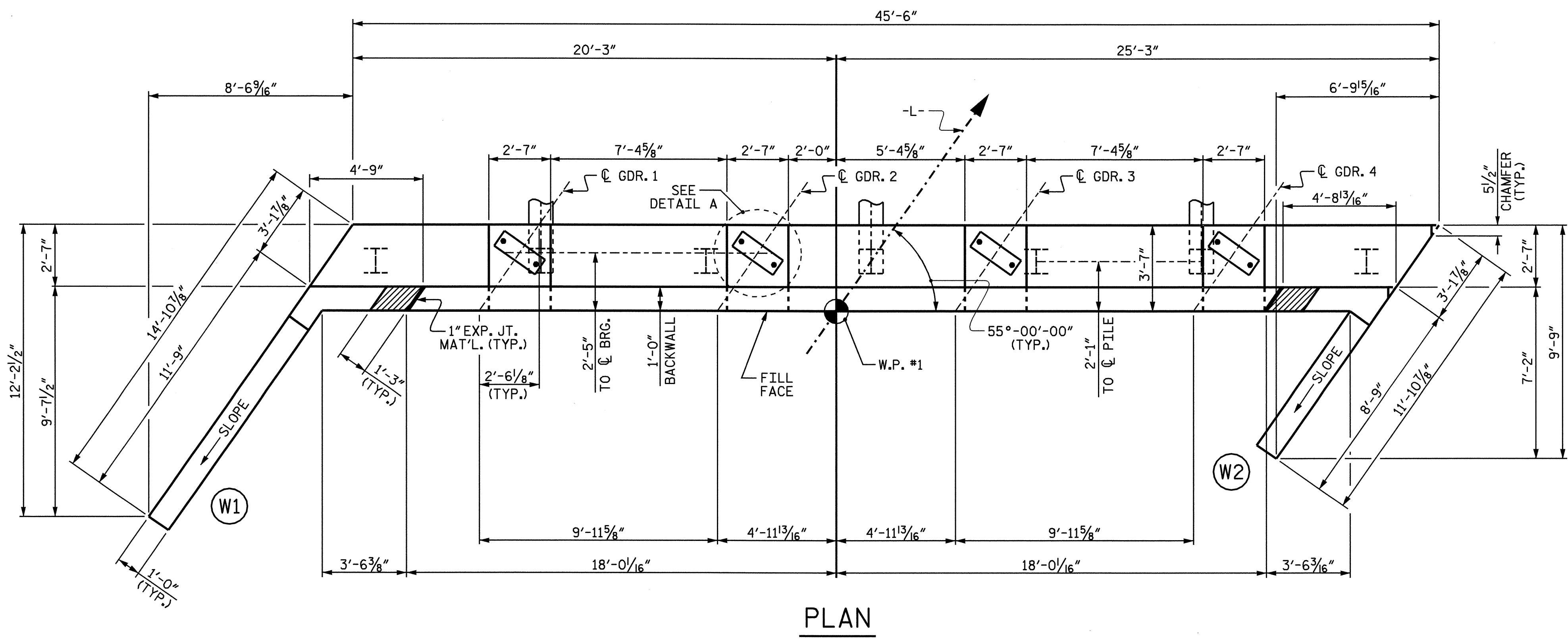
PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE BILL OF MATERIAL					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS 22

DRAWN BY: KEITH D. LAYNE DATE: 03/07
 CHECKED BY: M. K. BEARD DATE: 07/07



NOTES

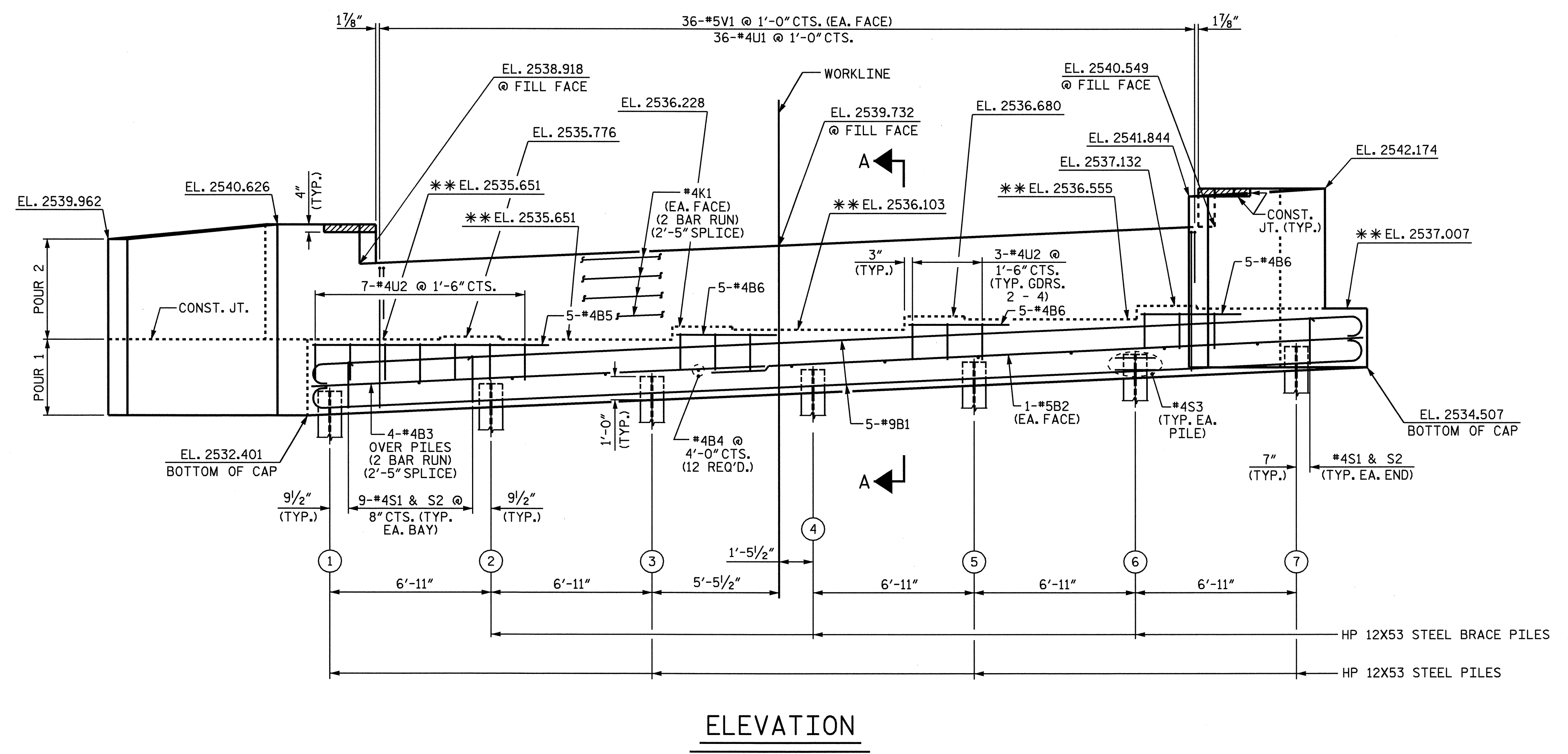
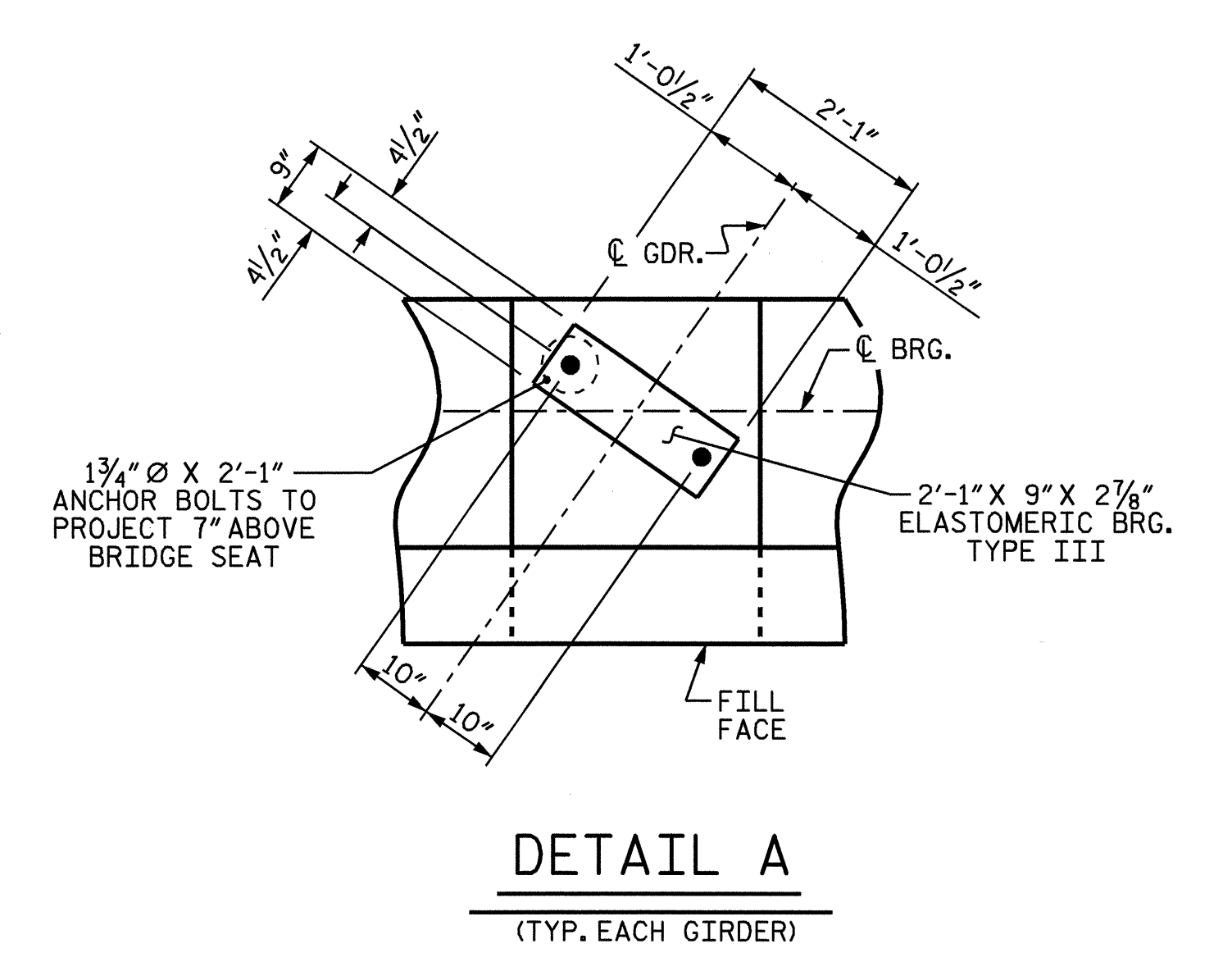
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

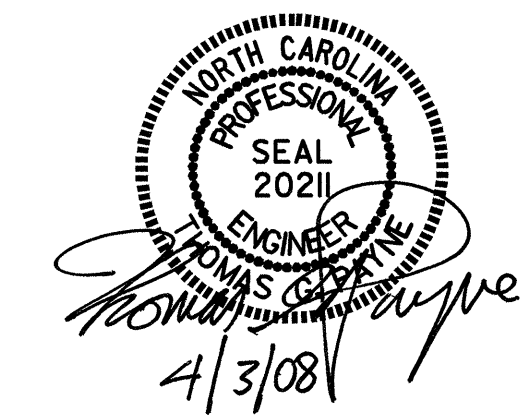
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PILE No.	TOP OF PILE EL.
1	2533.494
2	2533.814
3	2534.134
4	2534.454
5	2534.775
6	2535.095
7	2535.415

PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-
 SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE

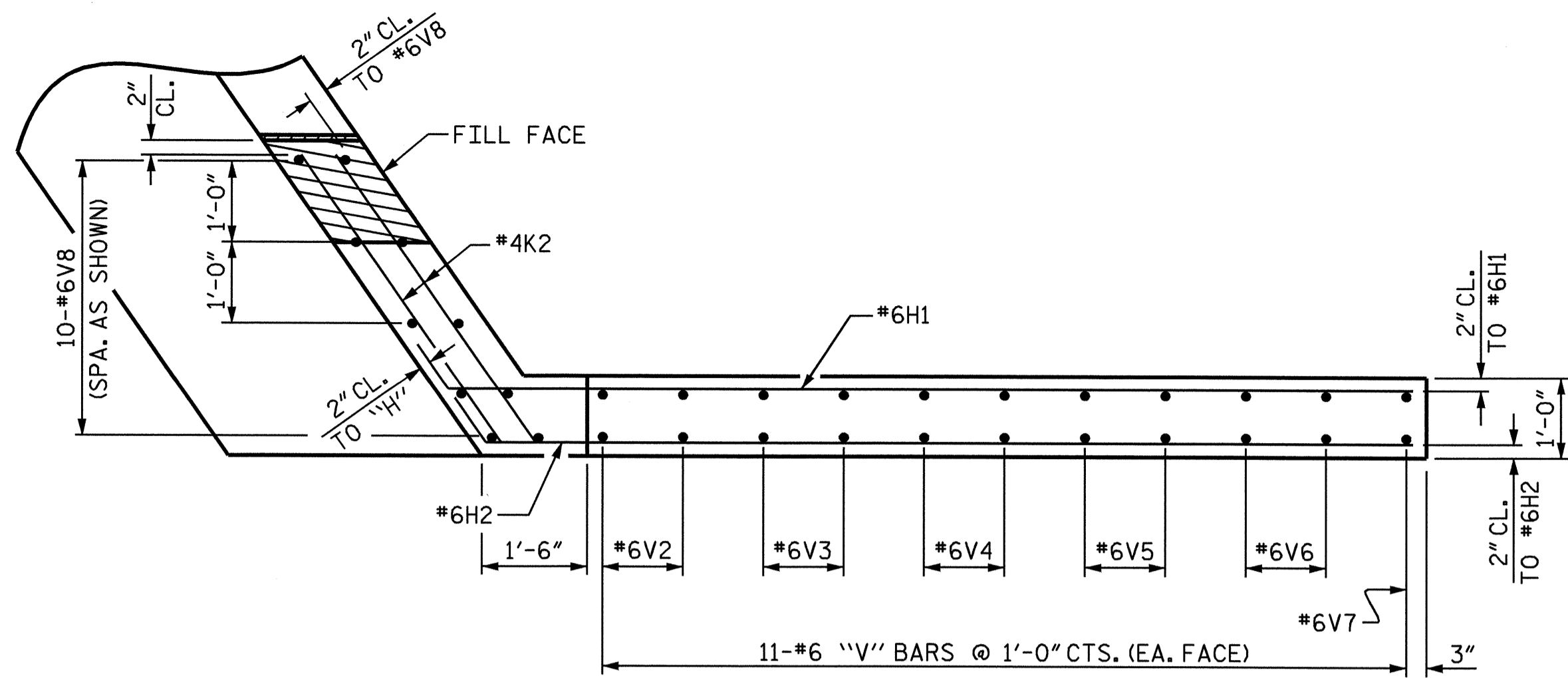
END BENT #1

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

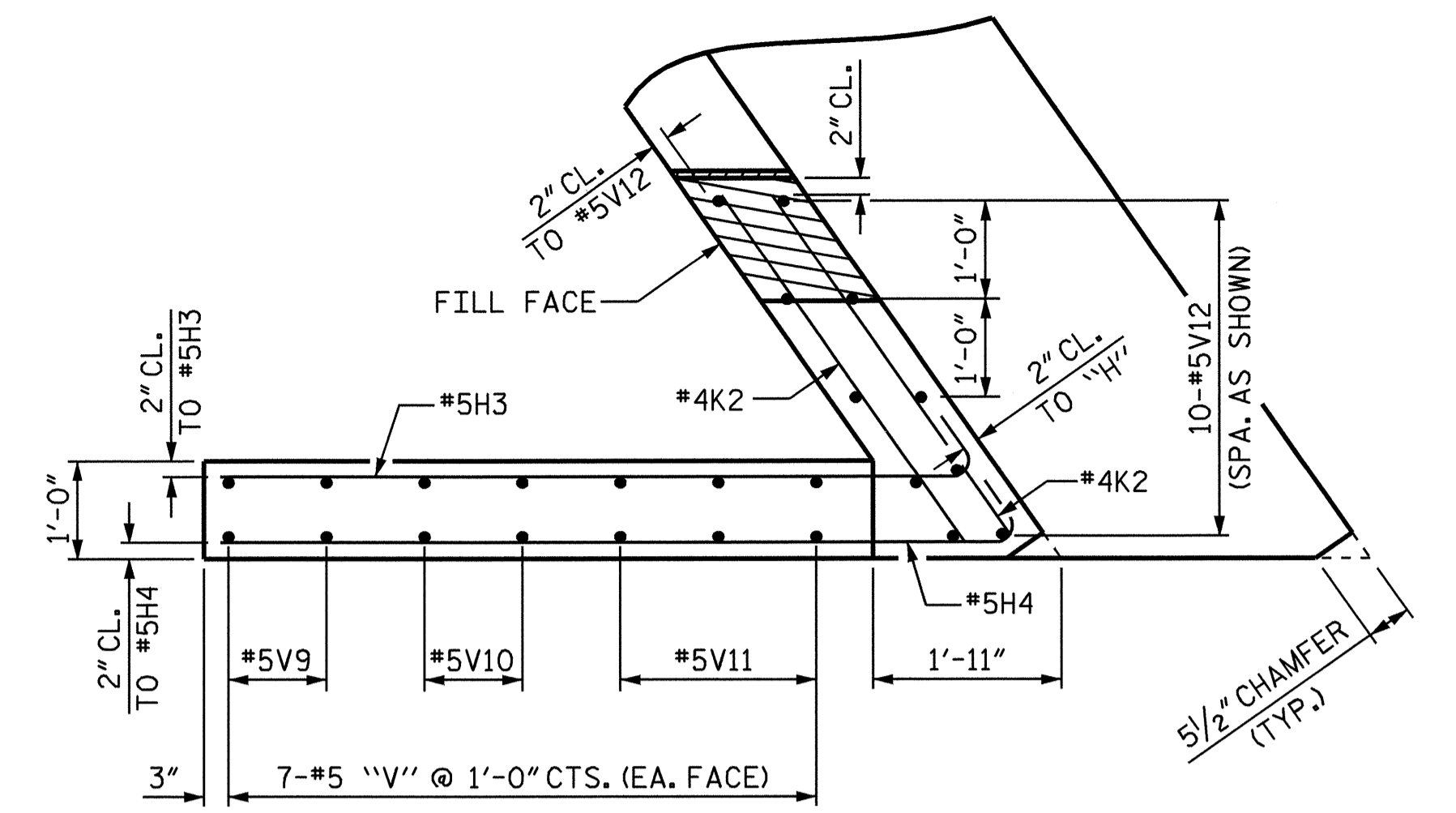
SHEET NO.				
S-14				
TOTAL SHEETS				
22				

DRAWN BY : M.K. BEARD DATE : 07/31/07
 CHECKED BY : K.D. LAYNE DATE : 10/07

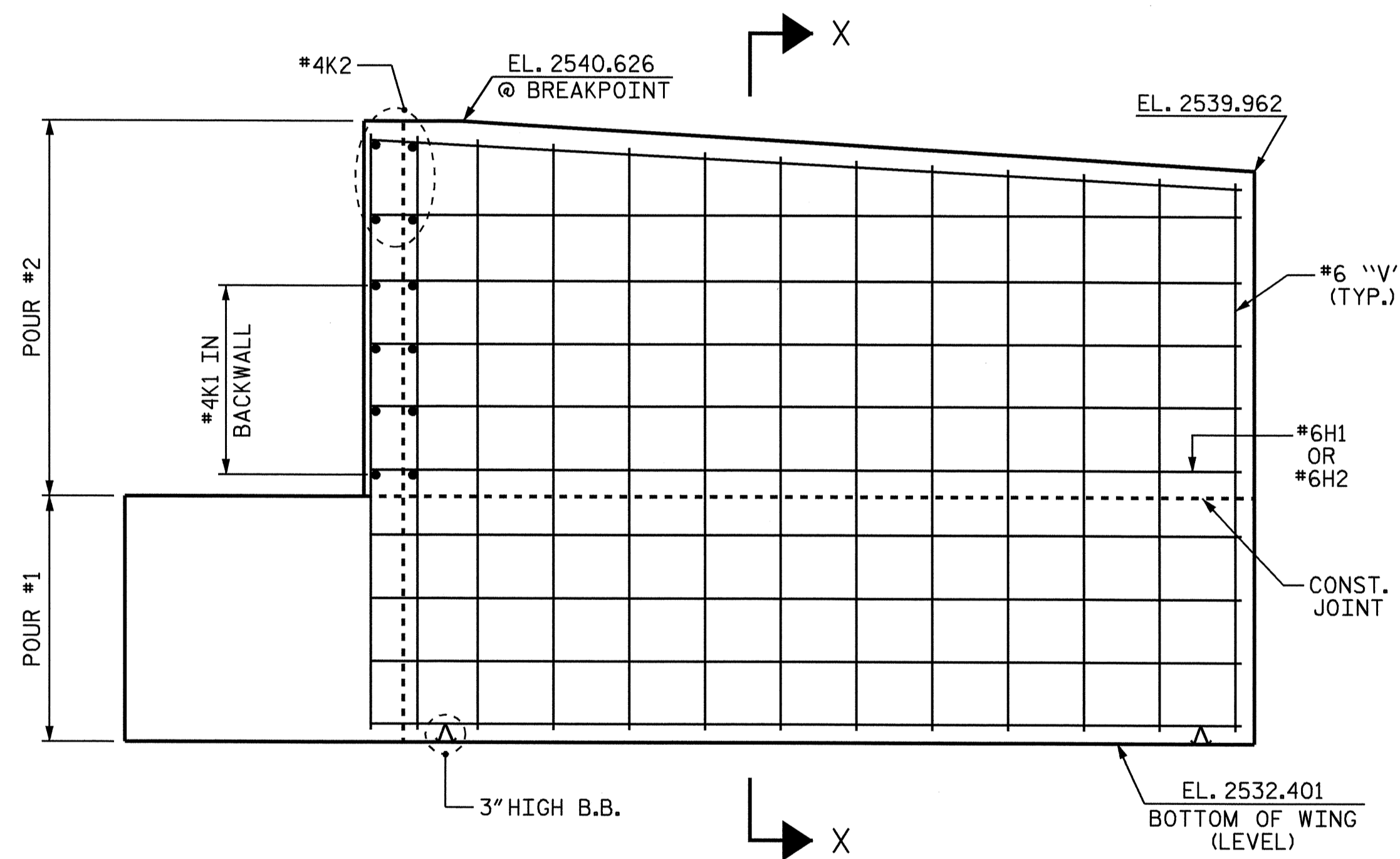
31-MAR-2008 15:21
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 kbeard



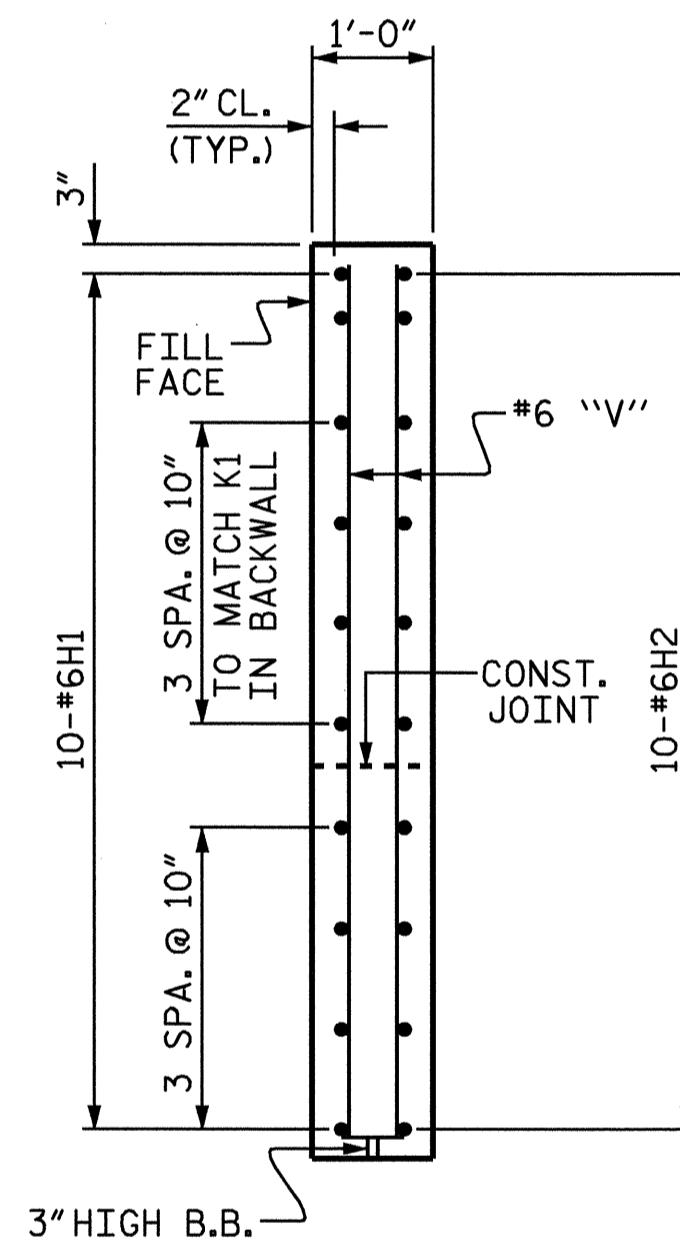
PLAN OF WING (W1)



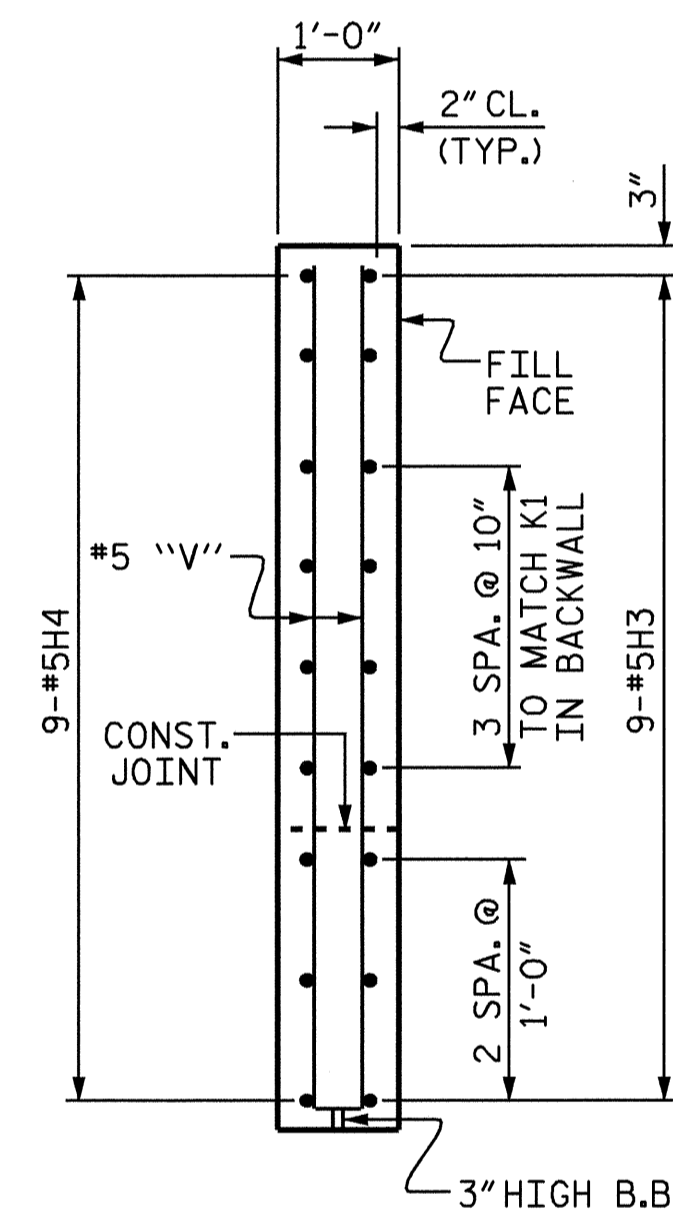
PLAN OF WING (W2)



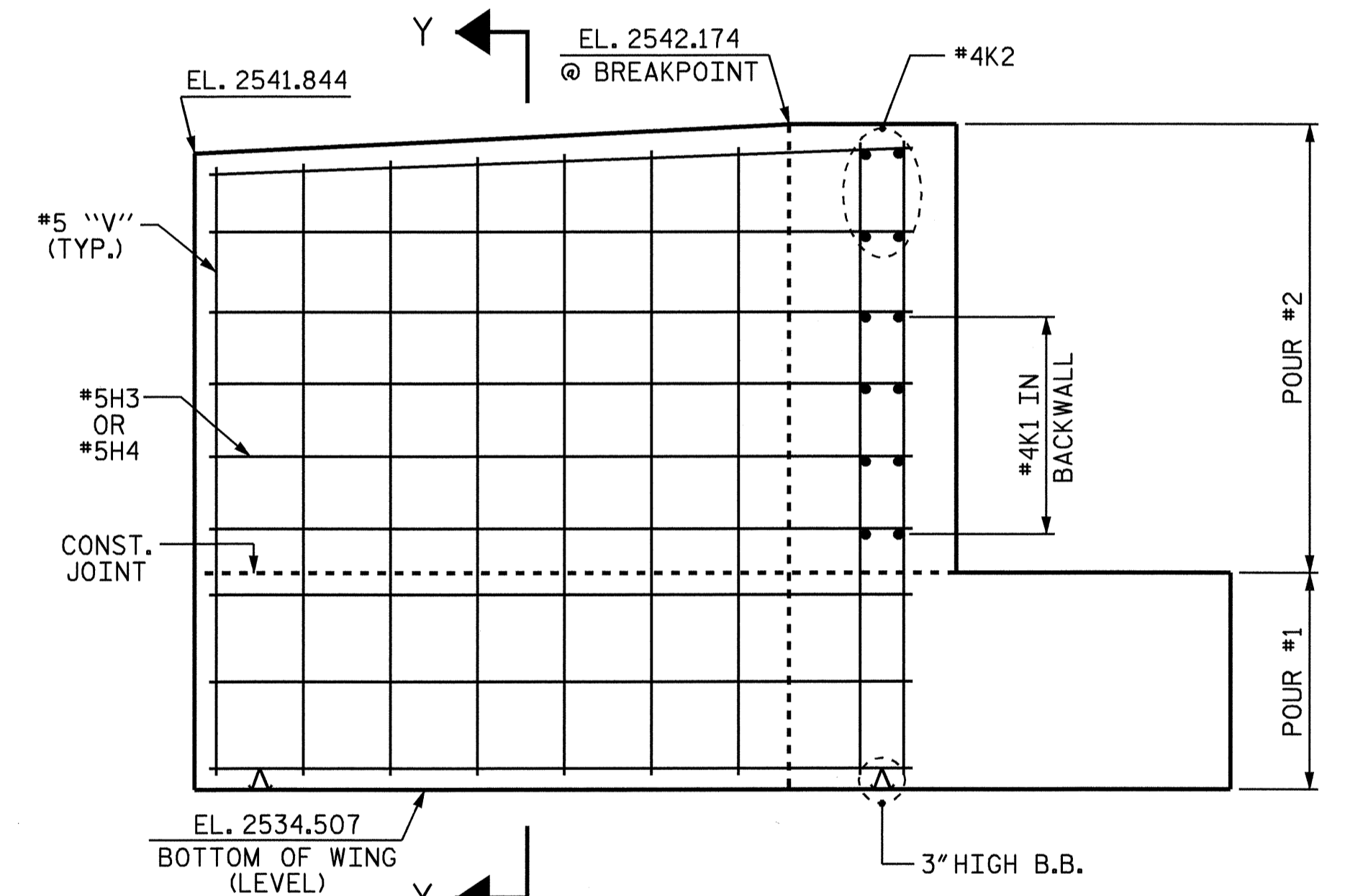
ELEVATION OF WING (W1)



X-X



Y-Y



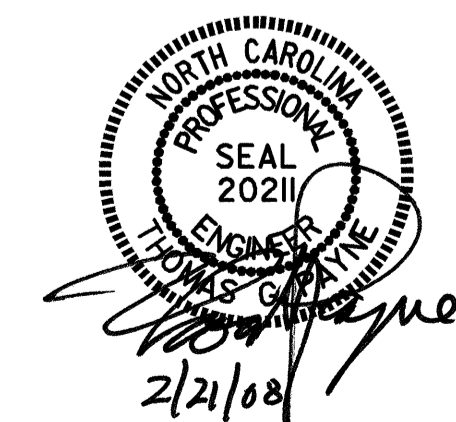
ELEVATION OF WING (W2)

DRAWN BY : M.K. BEARD DATE : 08/02/07
 CHECKED BY : K.D. LAYNE DATE : 10/07

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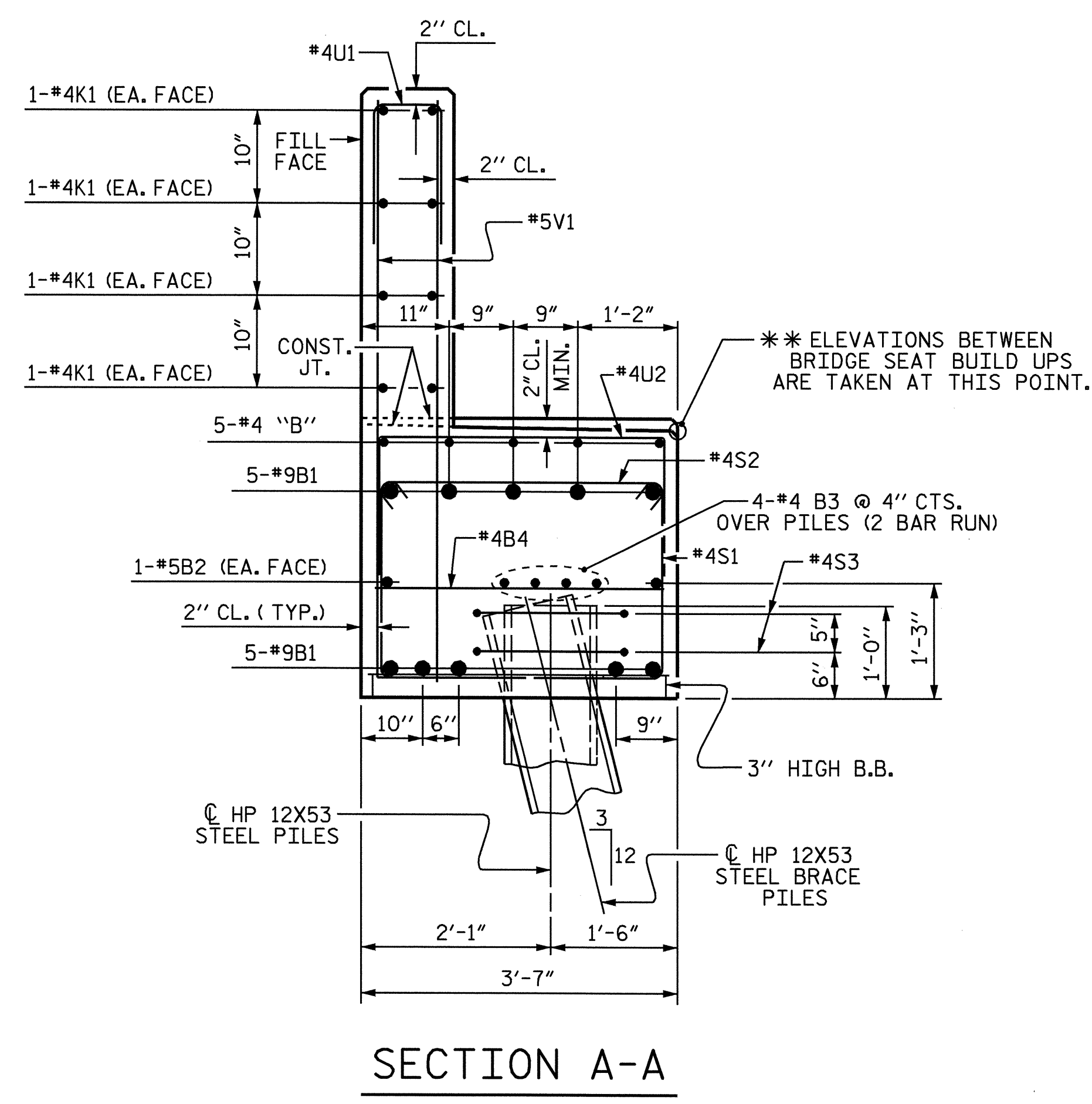
PROJECT NO. B-3661
 HAYWOOD COUNTY
 STATION: 16+65.00 -L-

SHEET 2 OF 3

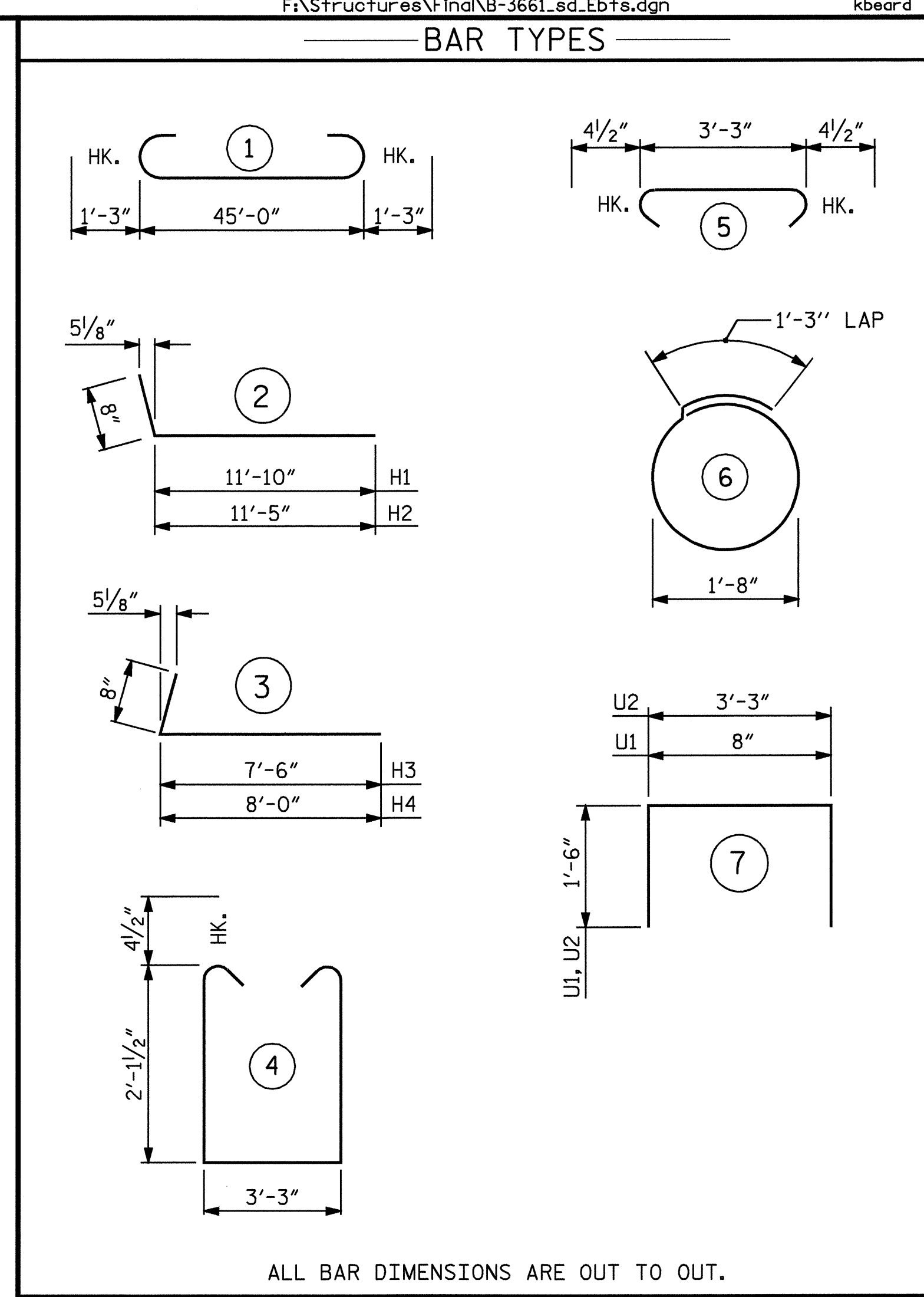


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT #1

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	S-15
1			3		TOTAL SHEETS
2			4		22

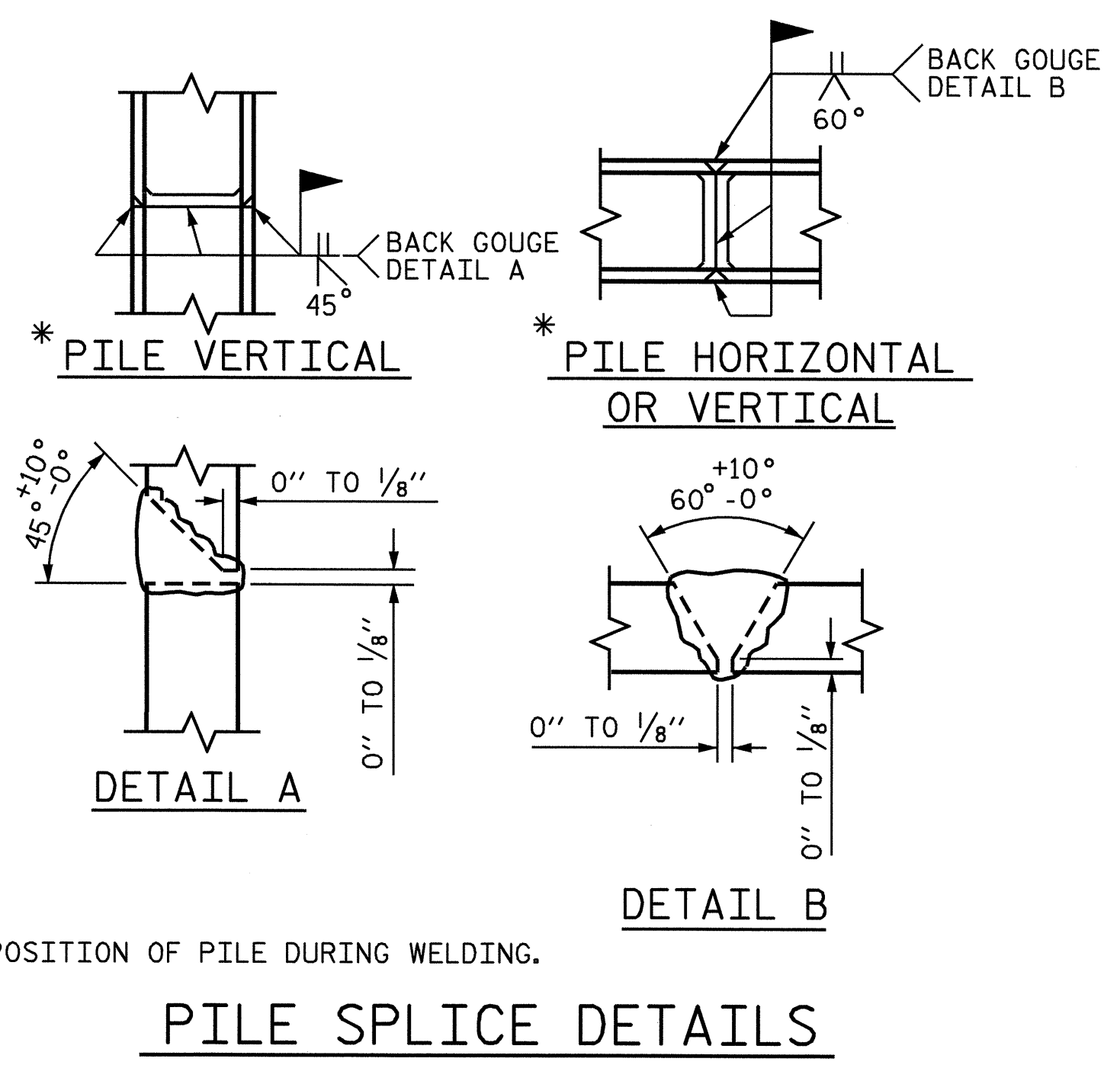


SECTION A-A



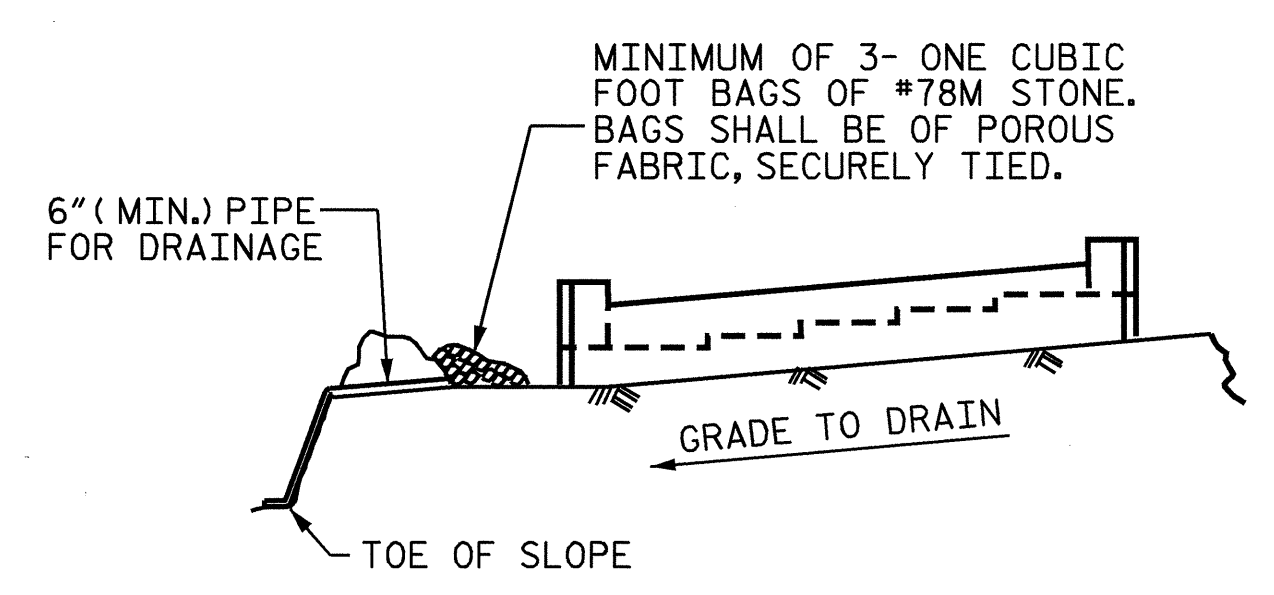
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	9	1	47'-6"	1615
B2	2	5	STR	45'-2"	94
B3	8	4	STR	23'-10"	127
B4	12	4	STR	3'-3"	26
B5	5	4	STR	10'-2"	34
B6	15	4	STR	4'-4"	43
H1	10	6	2	12'-6"	188
H2	10	6	2	12'-1"	181
H3	9	5	3	8'-2"	77
H4	9	5	3	8'-8"	81
K1	16	4	STR	23'-10"	255
K2	8	4	STR	4'-3"	23
S1	56	4	4	8'-3"	309
S2	56	4	5	4'-0"	150
S3	14	4	6	6'-6"	61
U1	36	4	7	3'-8"	88
U2	16	4	7	6'-3"	67
V1	72	5	STR	6'-0"	451
V2	4	6	STR	7'-8"	46
V3	4	6	STR	7'-6"	45
V4	4	6	STR	7'-5"	45
V5	4	6	STR	7'-4"	44
V6	4	6	STR	7'-2"	43
V7	2	6	STR	7'-1"	21
V8	10	6	STR	7'-9"	116
V9	4	5	STR	6'-11"	29
V10	4	5	STR	7'-0"	29
V11	6	5	STR	7'-1"	44
V12	10	5	STR	7'-3"	76
REINFORCING STEEL				4408 LBS	
CLASS "A" CONCRETE BREAKDOWN					
POUR #1 CAP & LOWER PART OF WINGS				CU. YDS.	19.0
POUR #2 UPPER WINGS & BACKWALL				CU. YDS.	10.2
CLASS "A" CONCRETE TOTAL				CU. YDS.	29.2
HP 12X53 STEEL PILES					
No. 7				70 LIN. FT.	
STEEL PILE POINTS				EACH	7



* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #1

2/21/08



REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	S-16
1			3		TOTAL SHEETS
2			4		22

NOTES

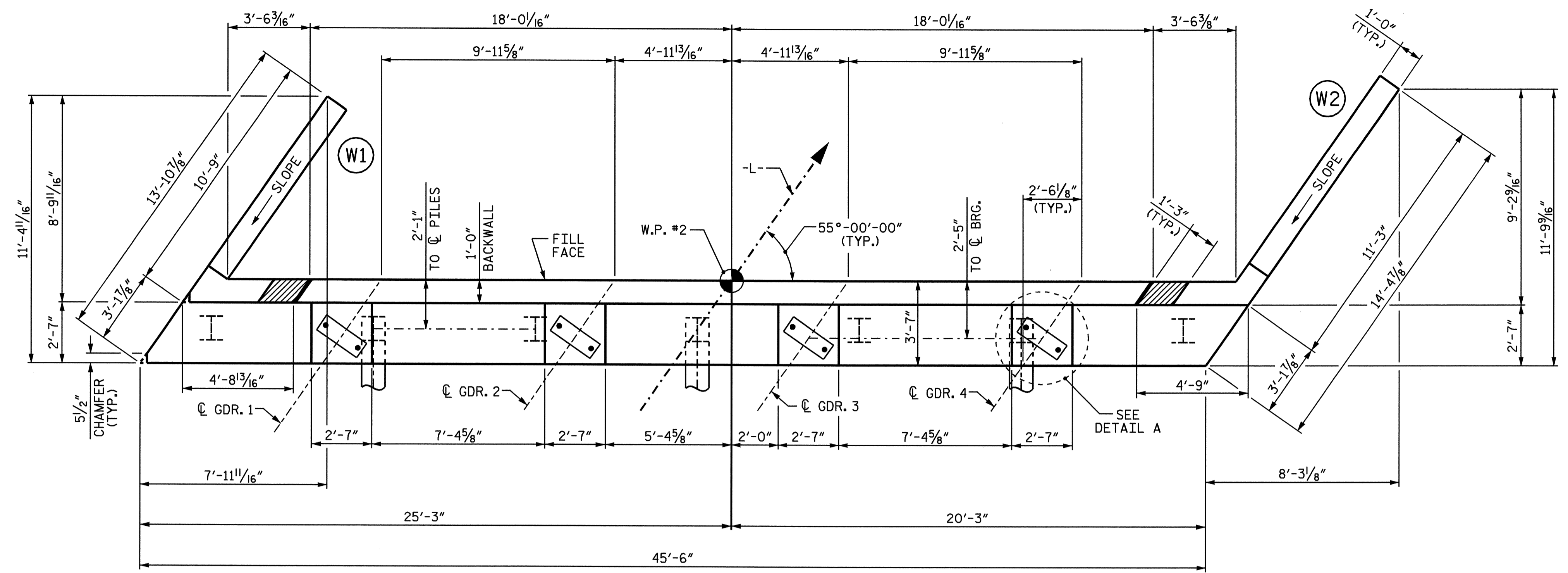
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

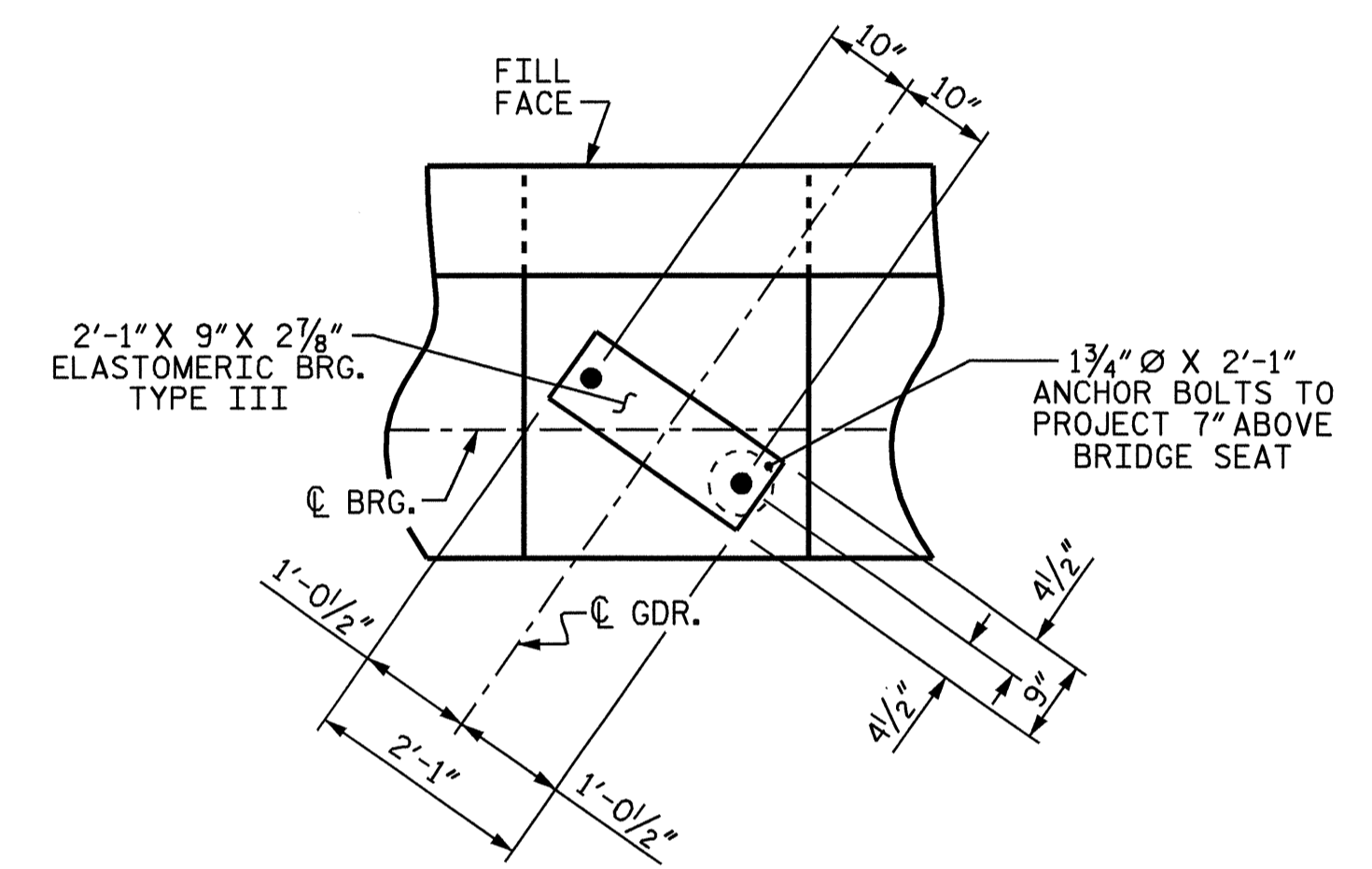
THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

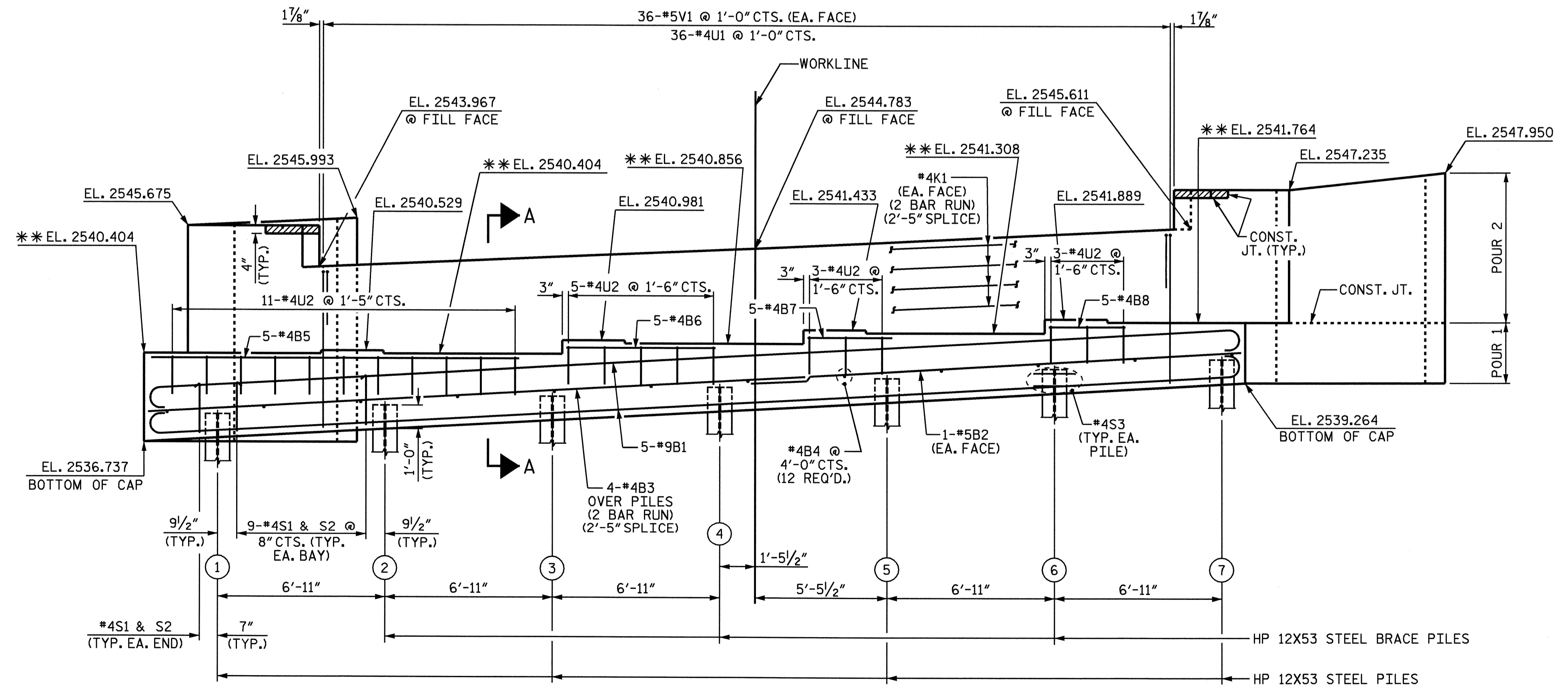


PLAN



DETAIL A

(TYP. EACH GIRDER)



ELEVATION

PILE No.	TOP OF PILE EL.
1	2537.847
2	2538.232
3	2538.616
4	2539.000
5	2539.384
6	2539.768
7	2540.152

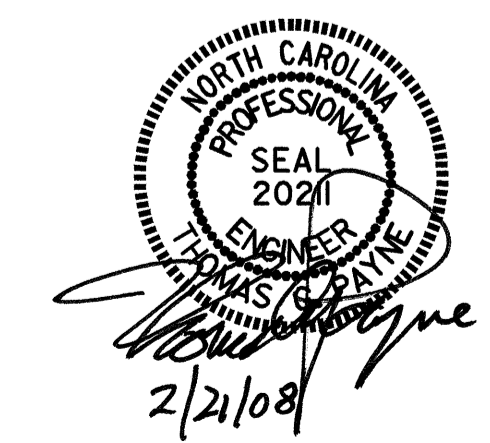
PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

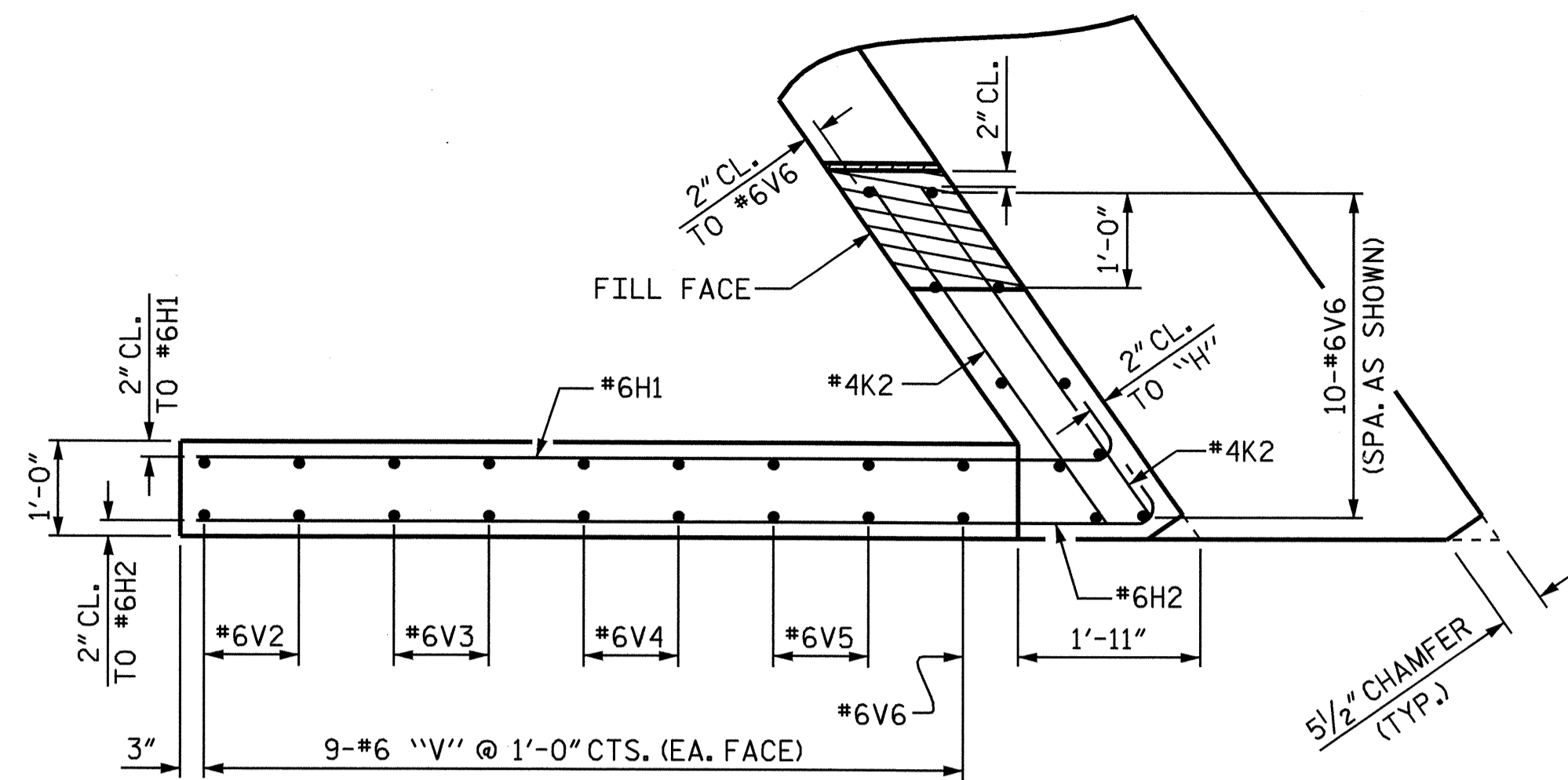
SUBSTRUCTURE

END BENT #2

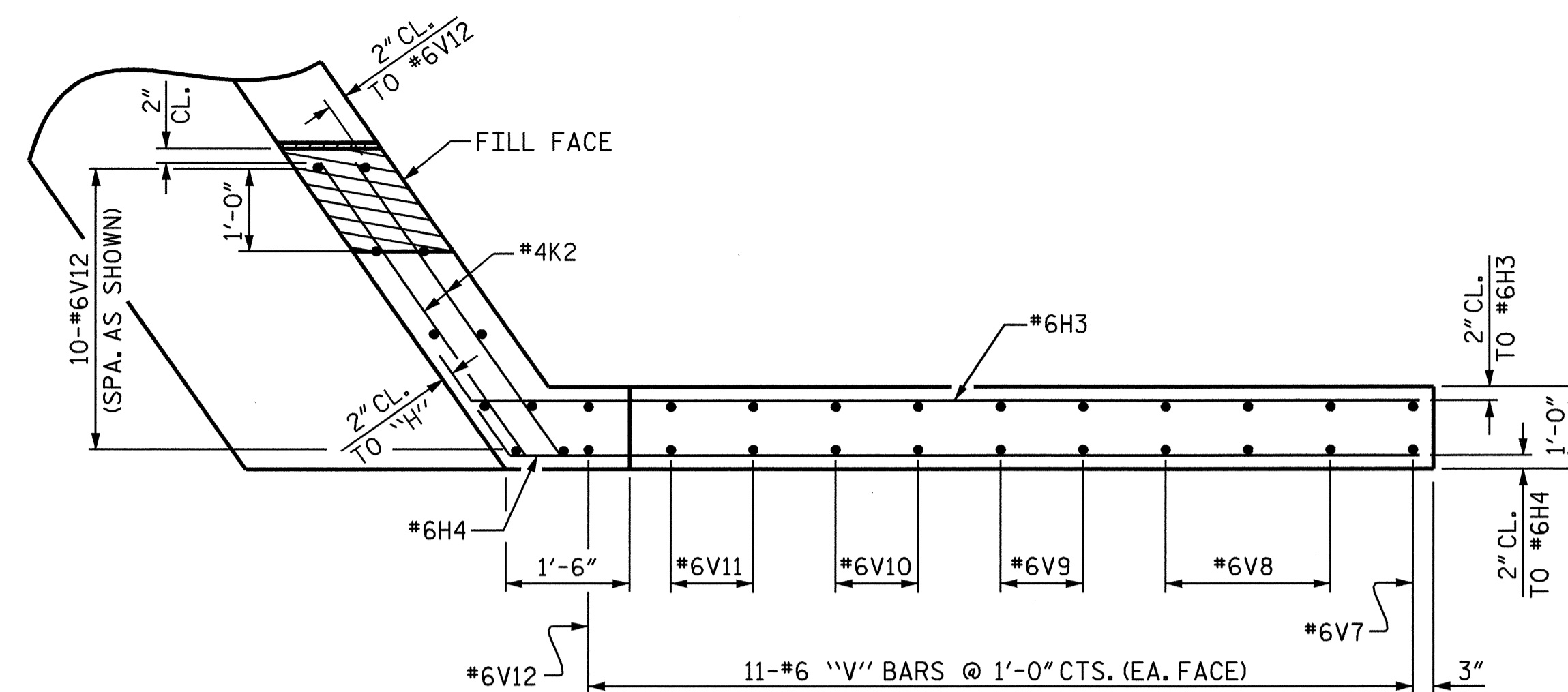


DRAWN BY: M.K. BEARD DATE: 08/07/07
 CHECKED BY: K.D. LAYNE DATE: 10/07

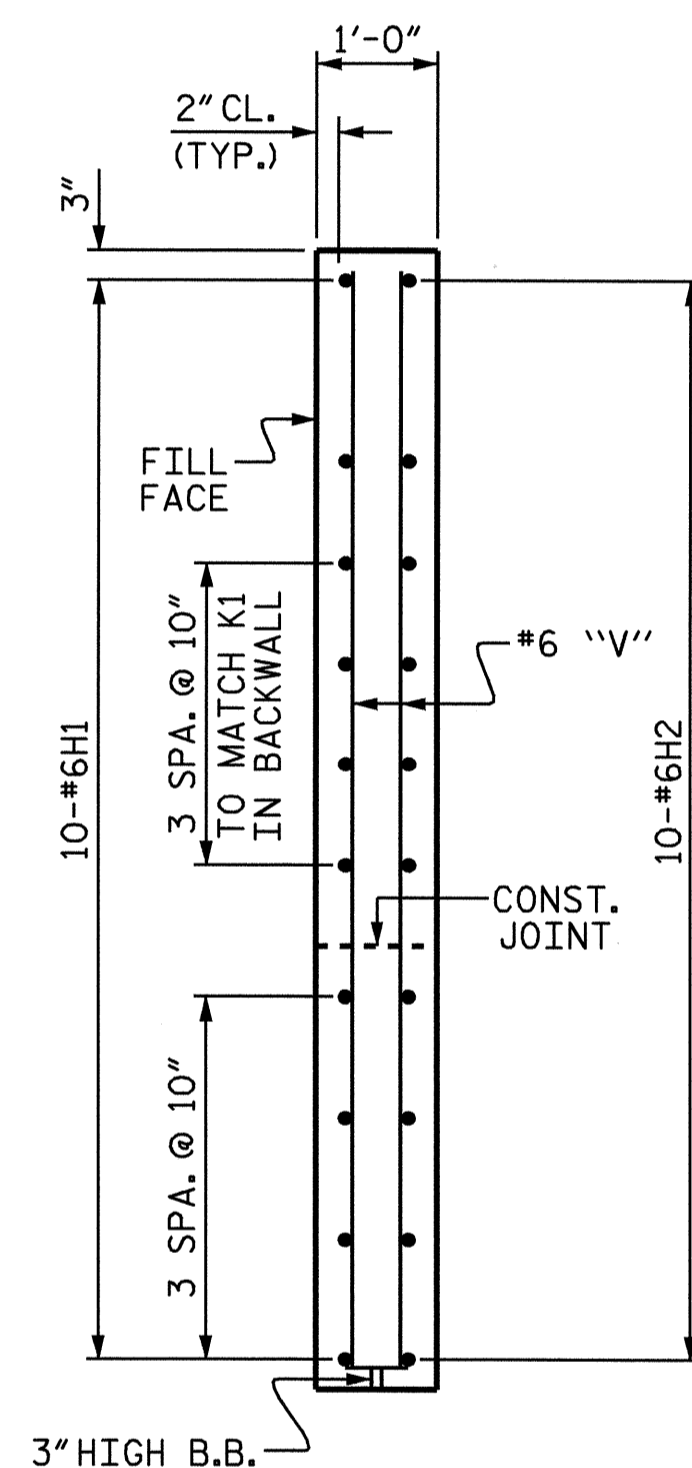
REVISIONS				SHEET NO.			
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17	
1			3			TOTAL SHEETS	
2			4			22	



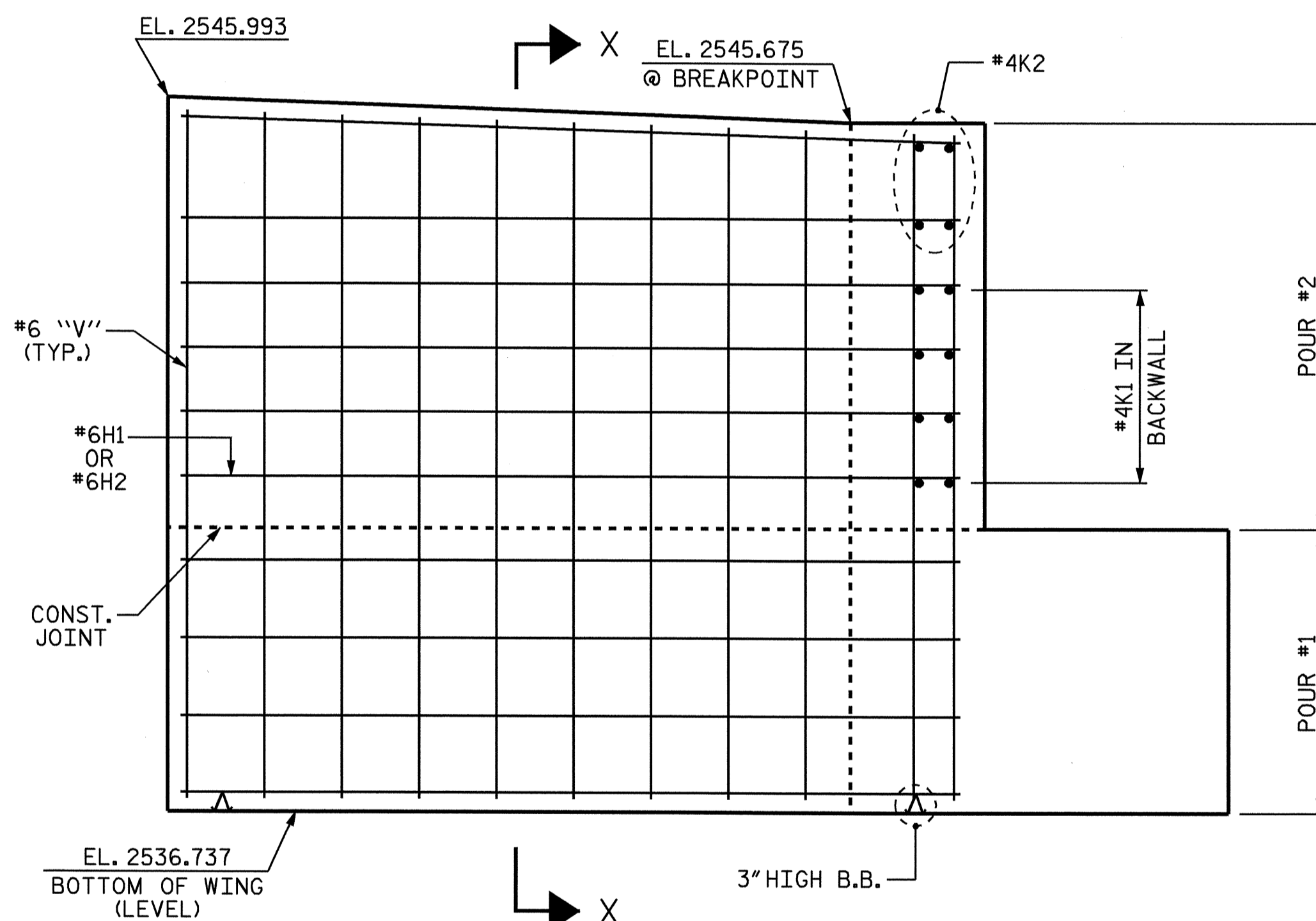
PLAN OF WING (W1)



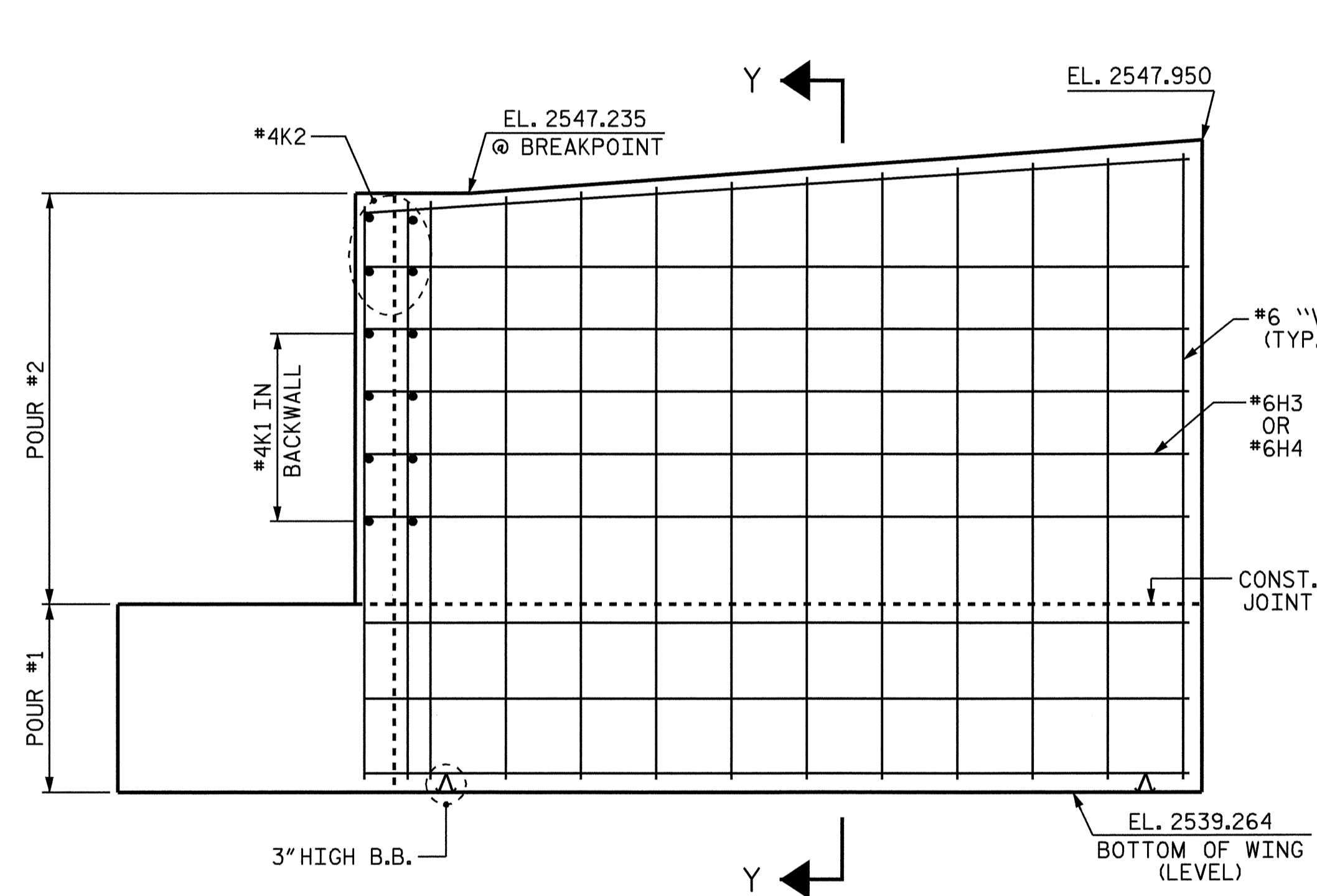
PLAN OF WING (W2)



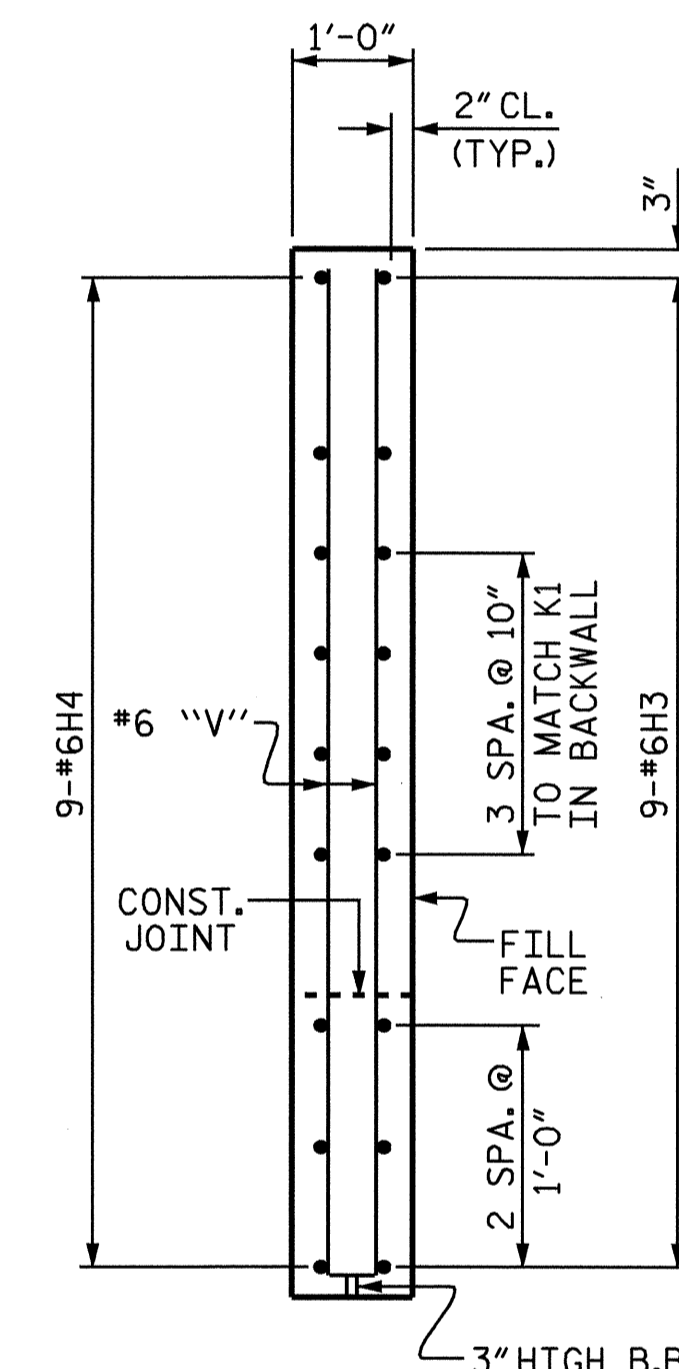
X-X



ELEVATION OF WING (W1)



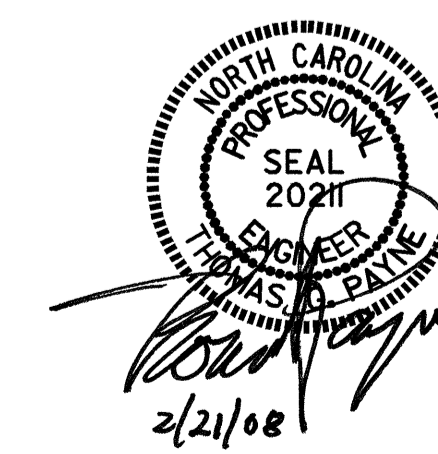
ELEVATION OF WING (W2)



Y-Y

PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

SHEET 2 OF 3



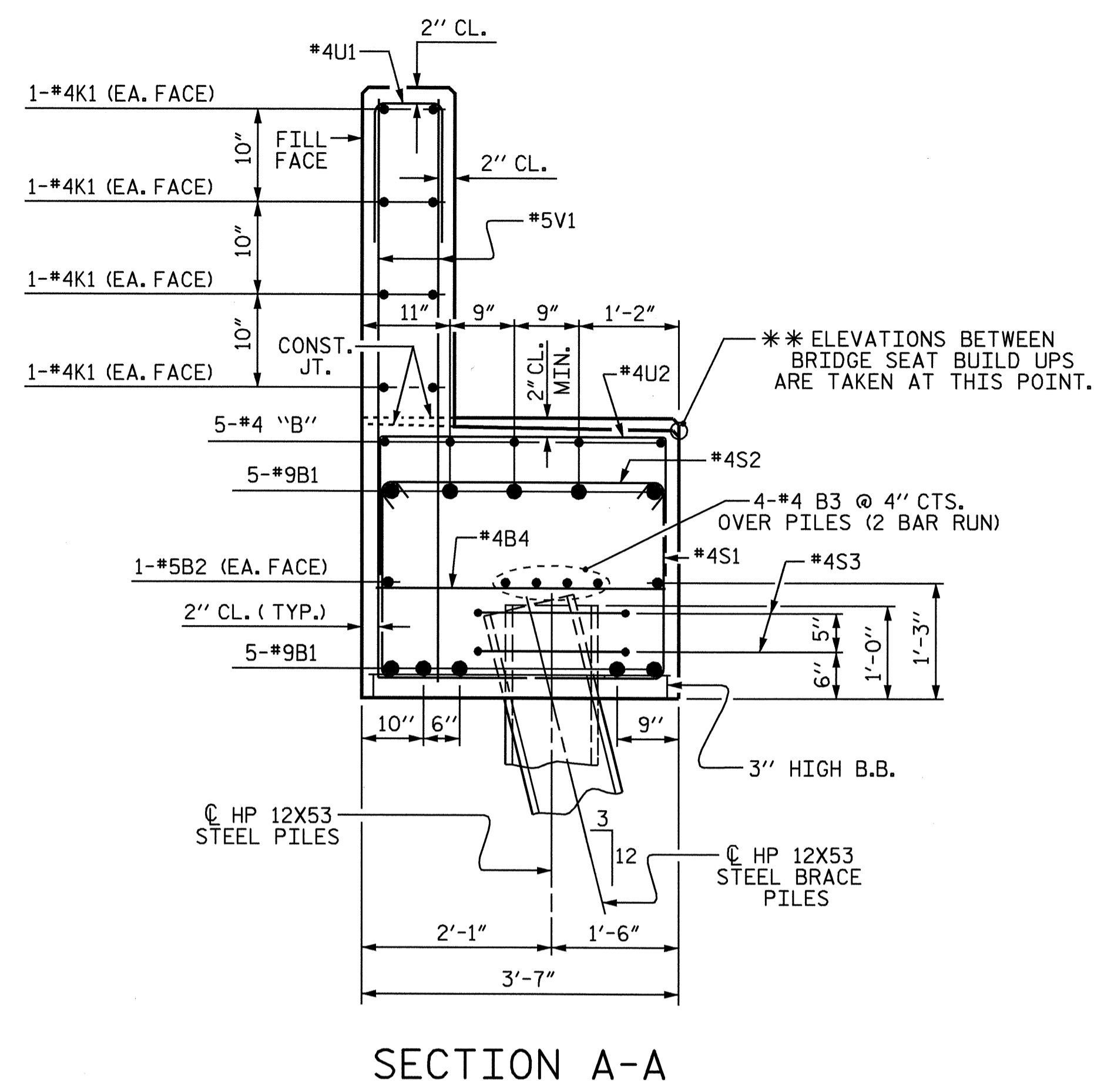
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2

DRAWN BY: M.K. BEARD DATE: 08/08/07
 CHECKED BY: K.D. LAYNE DATE: 10/07

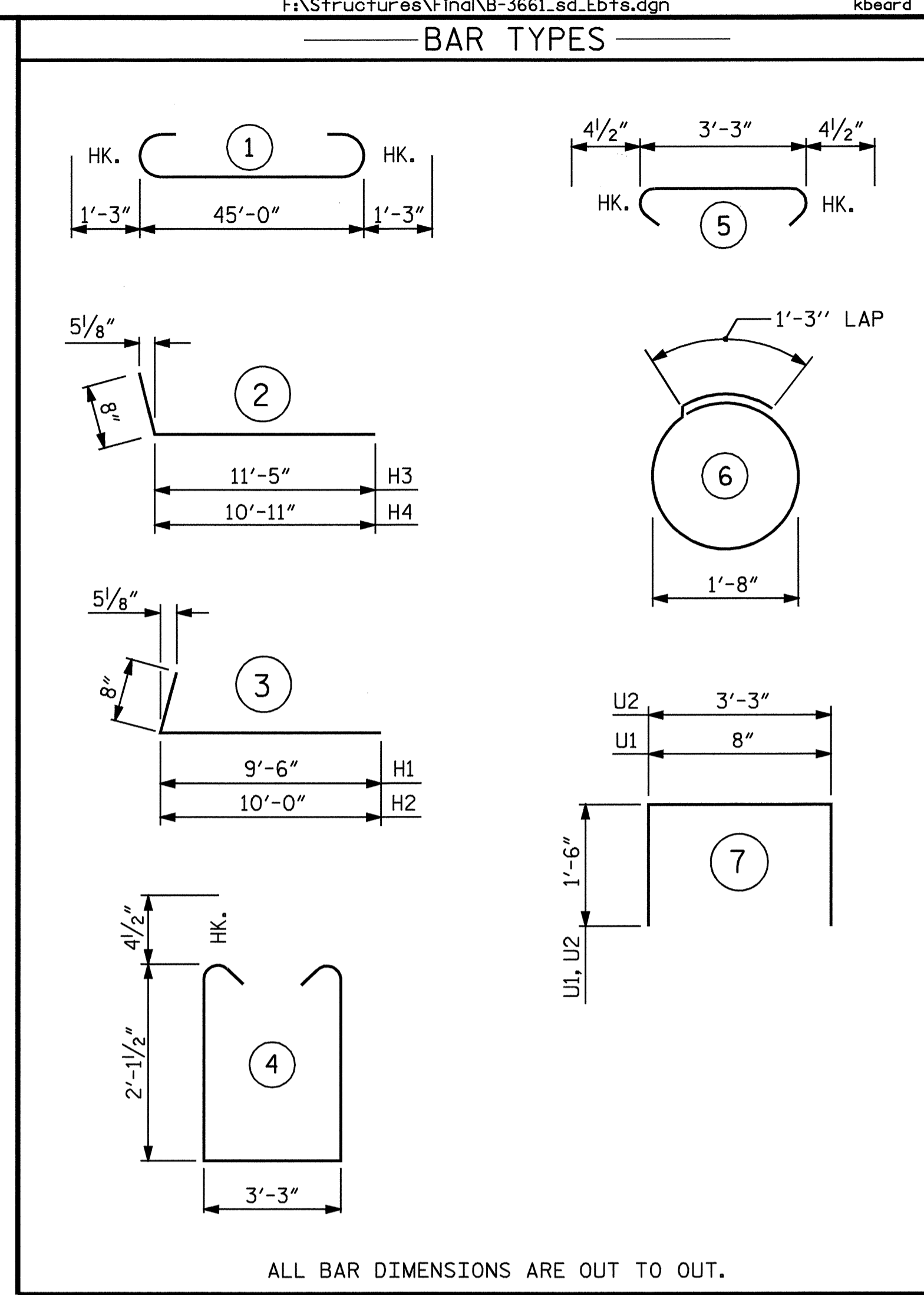
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			22



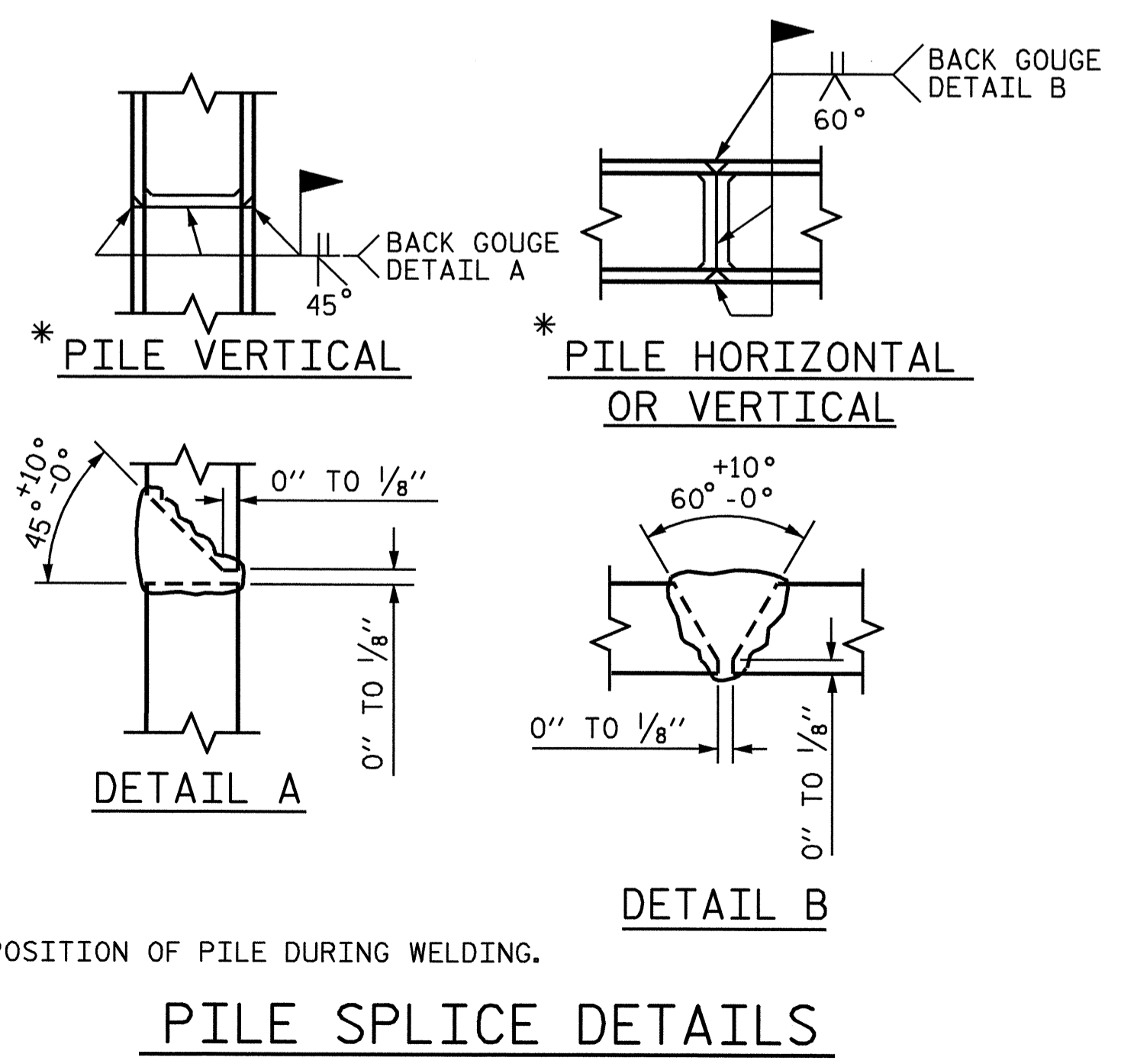
SECTION A-A

** ELEVATIONS BETWEEN BRIDGE SEAT BUILD UPS ARE TAKEN AT THIS POINT.



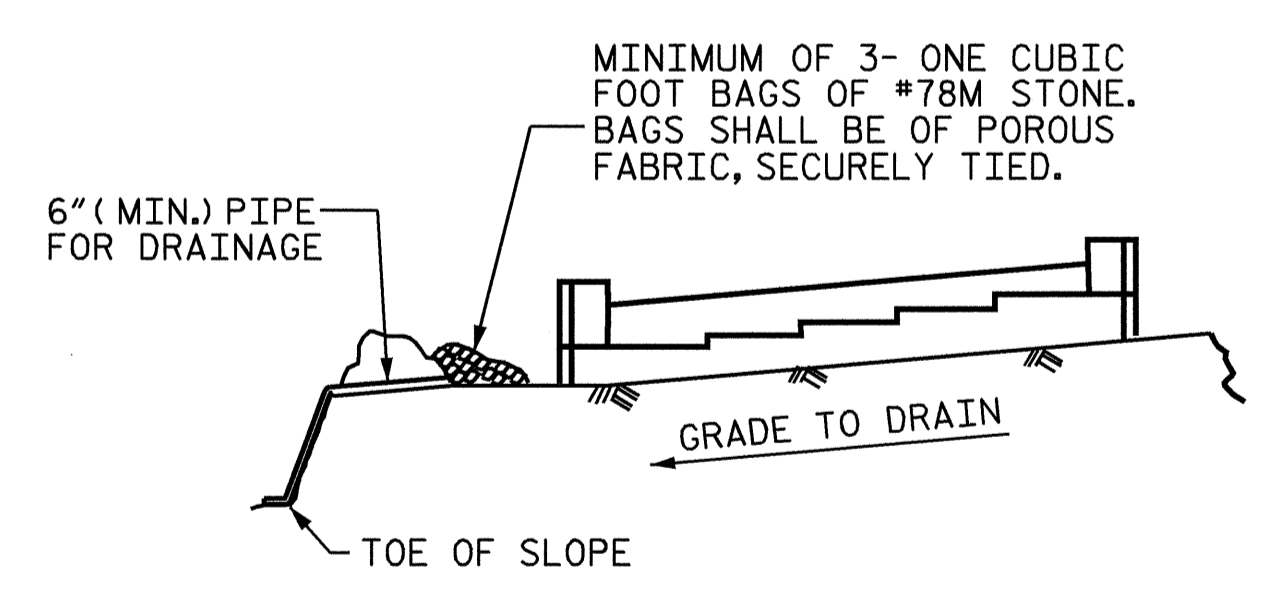
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT #2					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	9	1	47'-6"	1615
B2	2	5	STR	45'-2"	94
B3	8	4	STR	23'-10"	127
B4	12	4	STR	3'-3"	26
B5	5	4	STR	15'-4"	51
B6	5	4	STR	6'-2"	21
B7	5	4	STR	3'-6"	12
B8	5	4	STR	3'-2"	11
H1	10	6	3	10'-2"	153
H2	10	6	3	10'-8"	160
H3	9	6	2	12'-1"	163
H4	9	6	2	11'-7"	157
K1	16	4	STR	23'-10"	255
K2	8	4	STR	4'-3"	23
S1	56	4	4	8'-3"	309
S2	56	4	5	4'-0"	150
S3	14	4	6	6'-6"	61
U1	36	4	7	3'-8"	88
U2	22	4	7	6'-3"	92
V1	72	5	STR	6'-5"	482
V2	4	6	STR	8'-10"	53
V3	4	6	STR	8'-9"	53
V4	4	6	STR	8'-8"	52
V5	4	6	STR	8'-7"	52
V6	12	6	STR	8'-6"	153
V7	2	6	STR	8'-3"	25
V8	6	6	STR	8'-0"	72
V9	4	6	STR	7'-11"	48
V10	4	6	STR	7'-9"	47
V11	4	6	STR	7'-8"	46
V12	12	6	STR	7'-6"	135
REINFORCING STEEL					4786 LBS
CLASS "A" CONCRETE BREAKDOWN					
POUR #1 CAP & LOWER PART OF WINGS					CU. YDS. 20.2
POUR #2 UPPER WINGS & BACKWALL					CU. YDS. 10.1
CLASS "A" CONCRETE TOTAL					CU. YDS. 30.3
HP 12X53 STEEL PILES					No. 7 125 LIN. FT.
STEEL PILE POINTS					EACH 7



* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

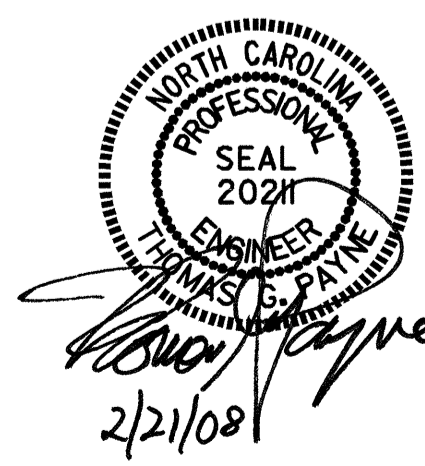
PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2

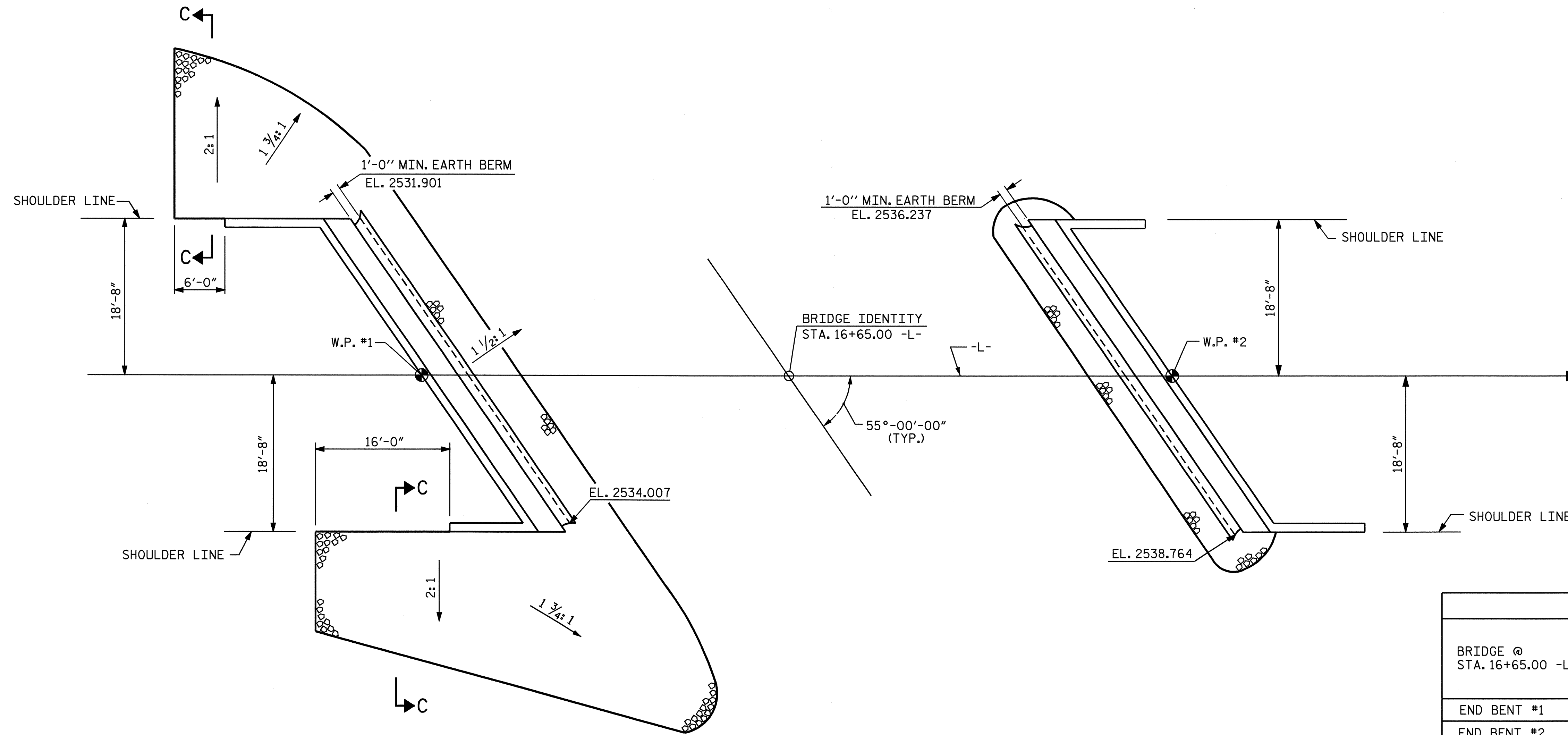
2/21/08



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			22

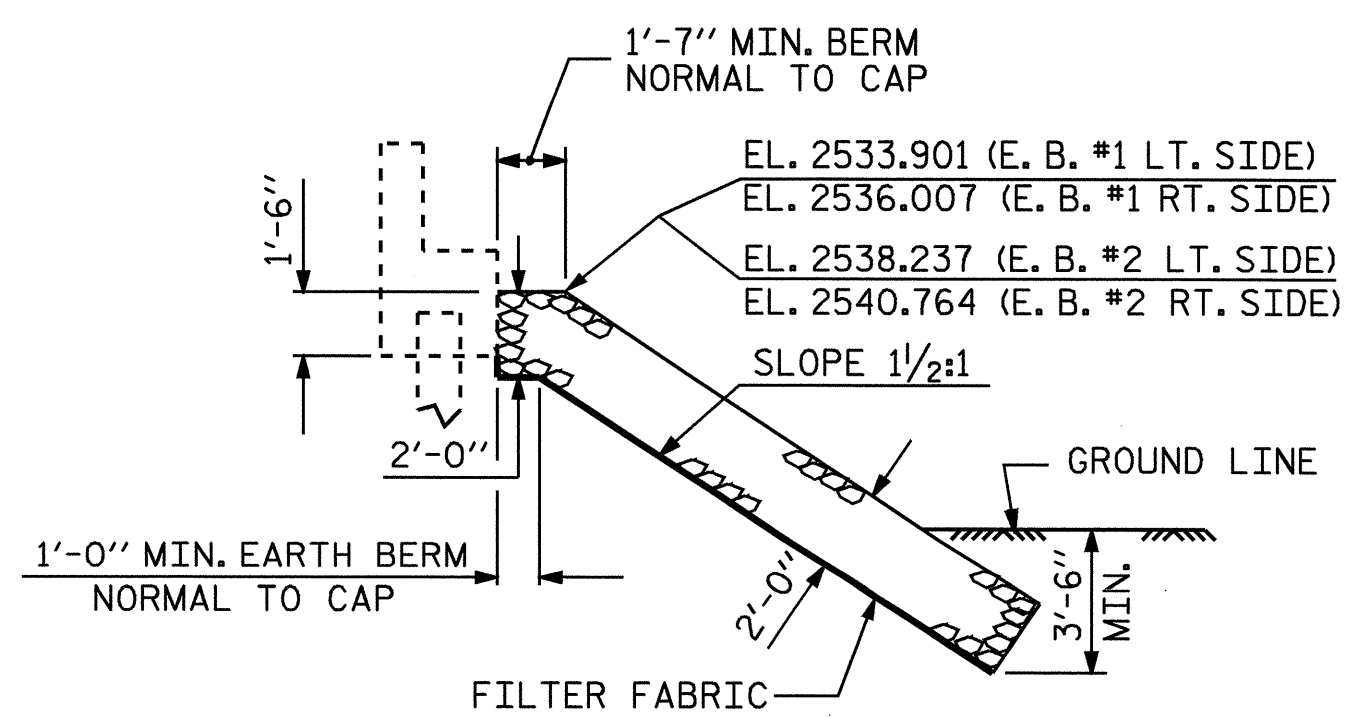
NOTE:

CONTRACTOR SHALL MINIMIZE DISTURBANCE OF THE EXISTING SLOPE AT END BENT #2. THE DISTURBED AREA SHALL BE RIP RAPPED AS DIRECTED BY THE ENGINEER.



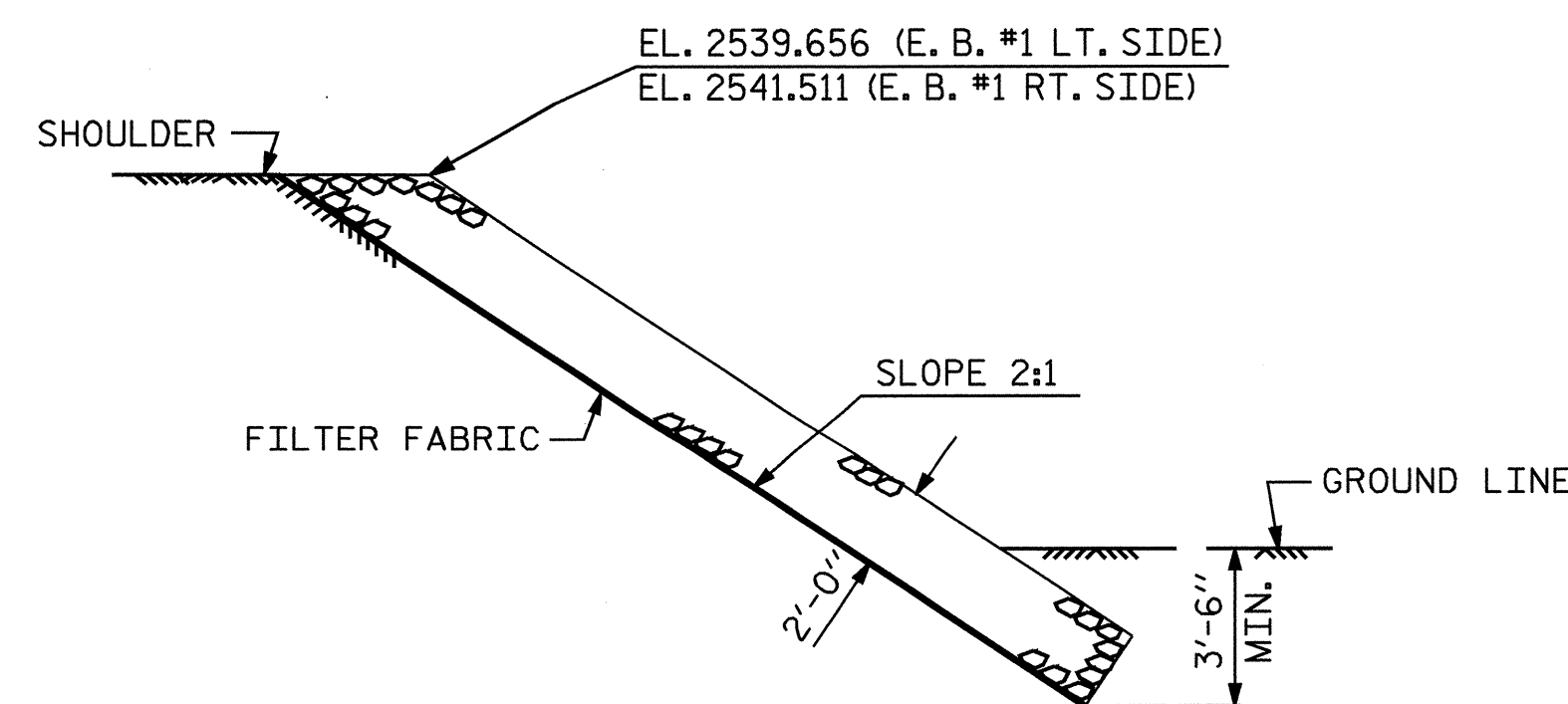
PLAN OF RIP RAP

ESTIMATED QUANTITIES		
BRIDGE @ STA. 16+65.00 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT #1	182	202
END BENT #2	20	22



SECTION C-C
BERM RIP RAPPED

(AT END BENT #2, RIP RAP SHALL NOT BE BURIED, SEE NOTE.)



SECTION C-C

PROJECT NO. B-3661
HAYWOOD COUNTY
STATION: 16+65.00-L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

— RIP RAP DETAILS —

REVISIONS						SHEET NO. S-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			



ASSEMBLED BY : R. G. EMERSON DATE : 04/07
CHECKED BY : T. G. PAYNE DATE : 09/07

BILL OF MATERIAL					
FOR ONE APPROACH SLAB (2 REQUIRED)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	30	#4	STR	18'-9"	376
A2	32	#4	STR	18'-7"	397
* B1	58	#5	STR	13'-6"	817
B2	58	#6	STR	14'-8"	1278
REINFORCING STEEL				LBS.	1675
* EPOXY COATED REINFORCING STEEL				LBS.	1193
CLASS AA CONCRETE				C. Y.	16.9

SPLICE LENGTHS	
BAR	LENGTH
#4 A1	2'-0"
#4 A2	1'-9"

NOTES

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

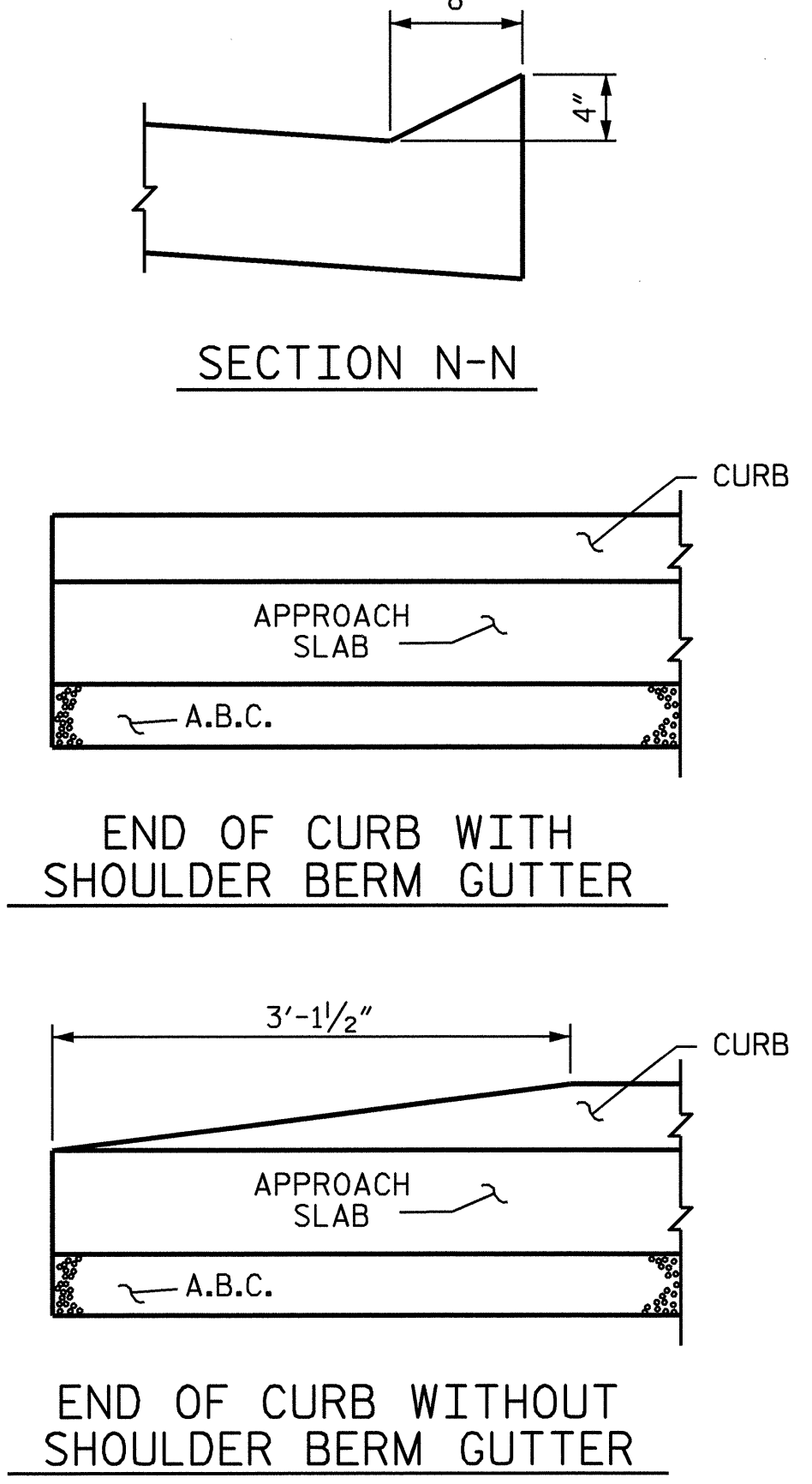
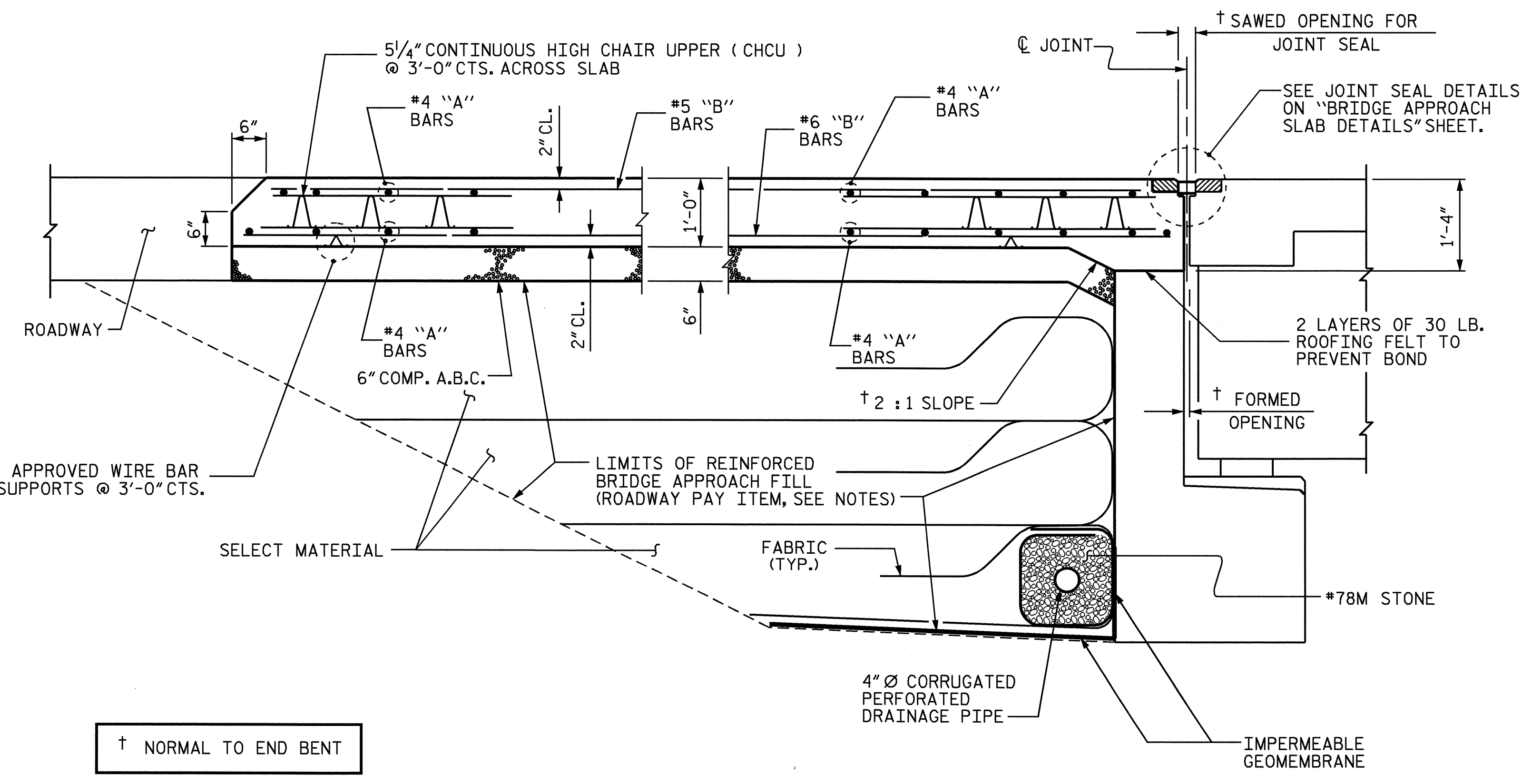
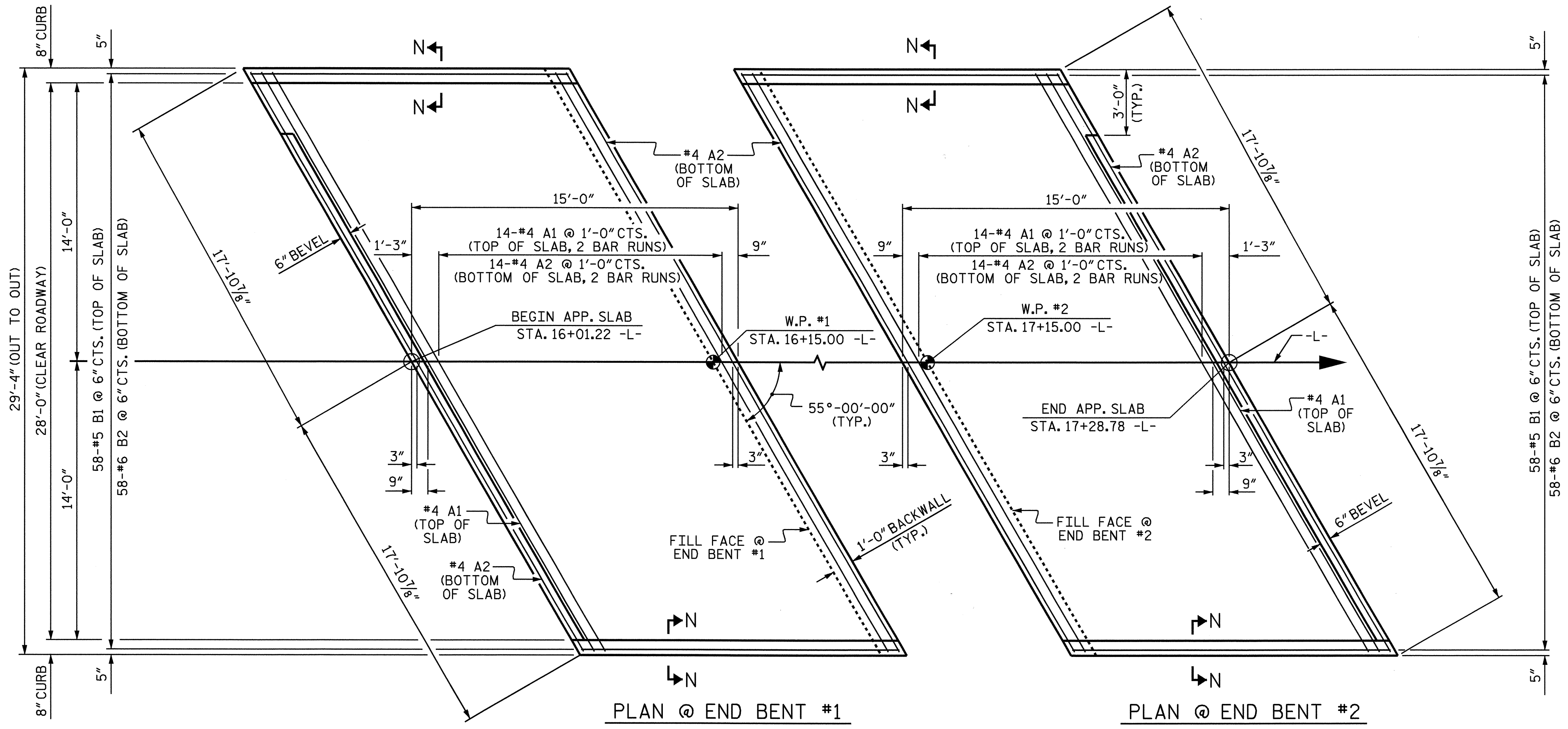
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE EACH EDGE OF THE APPROACH SLAB.

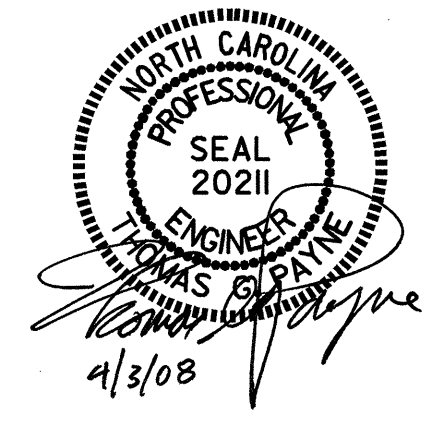
THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

THE JOINT SHALL BE SAWS PRIOR TO THE CASTING OF THE BARRIER RAIL.



ASSEMBLED BY :	R. G. EMERSON	DATE :	04/07
CHECKED BY :	K. D. LAYNE	DATE :	07/07
DRAWN BY :	EEM	3/95	REV. 7/10/01 LES/RDR
CHECKED BY :	VAP	3/95	REV. 5/1/03R RWW/JTE
			REV. 5/1/06R KMM/GM



PROJECT NO. B-3661
HAYWOOD COUNTY
 STATION: 16+65.00 -L-

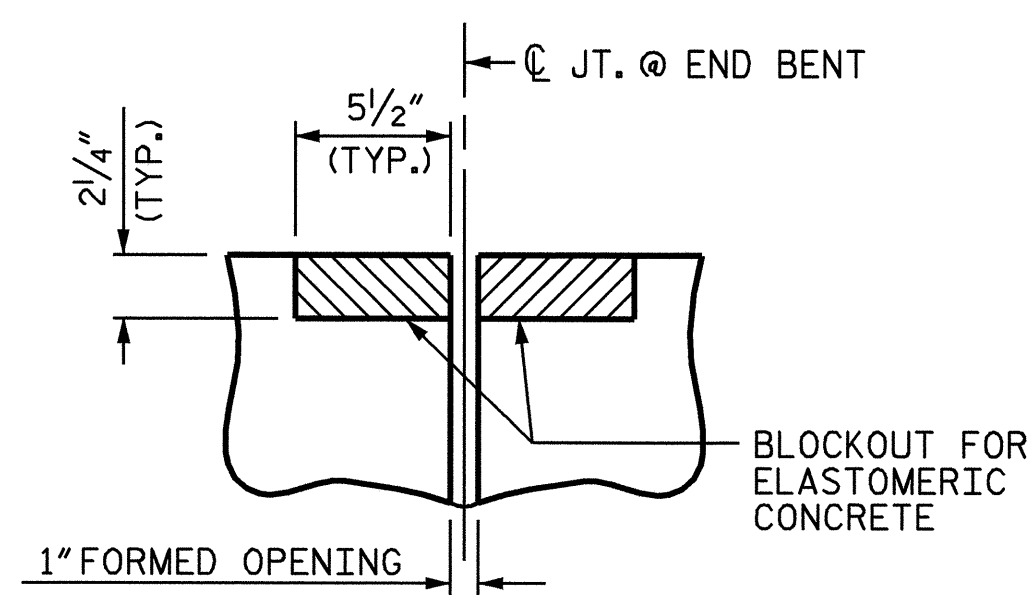
SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT

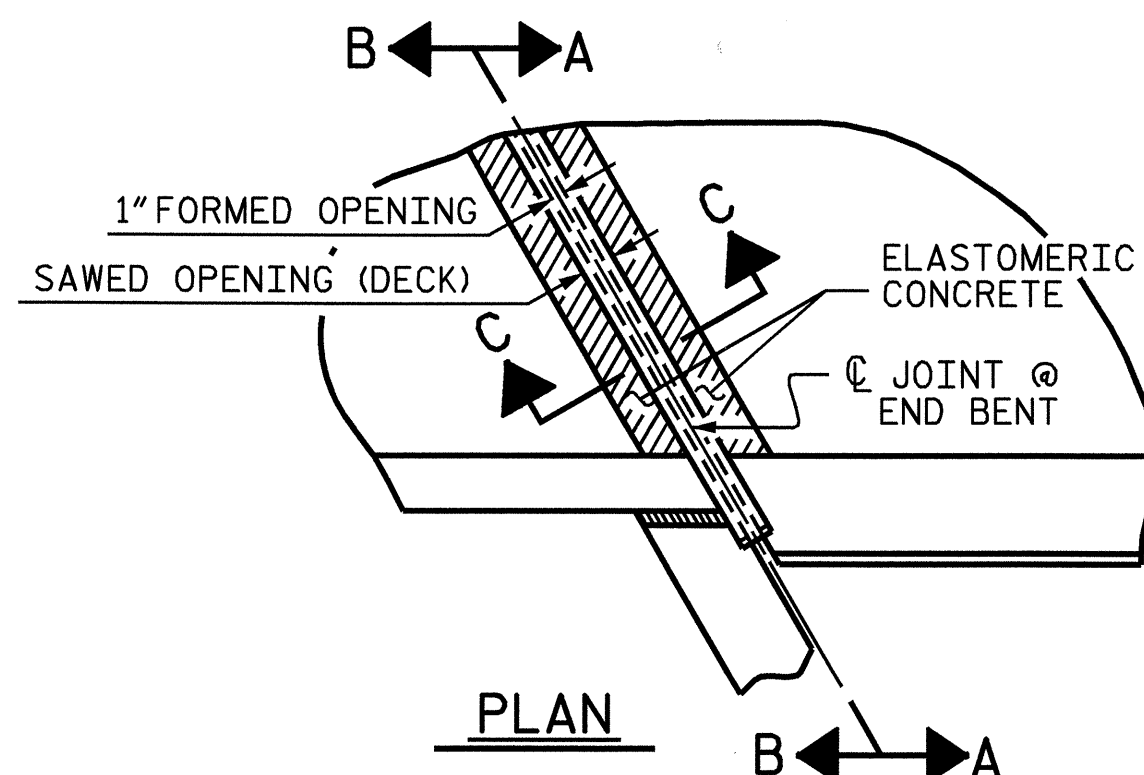
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 22

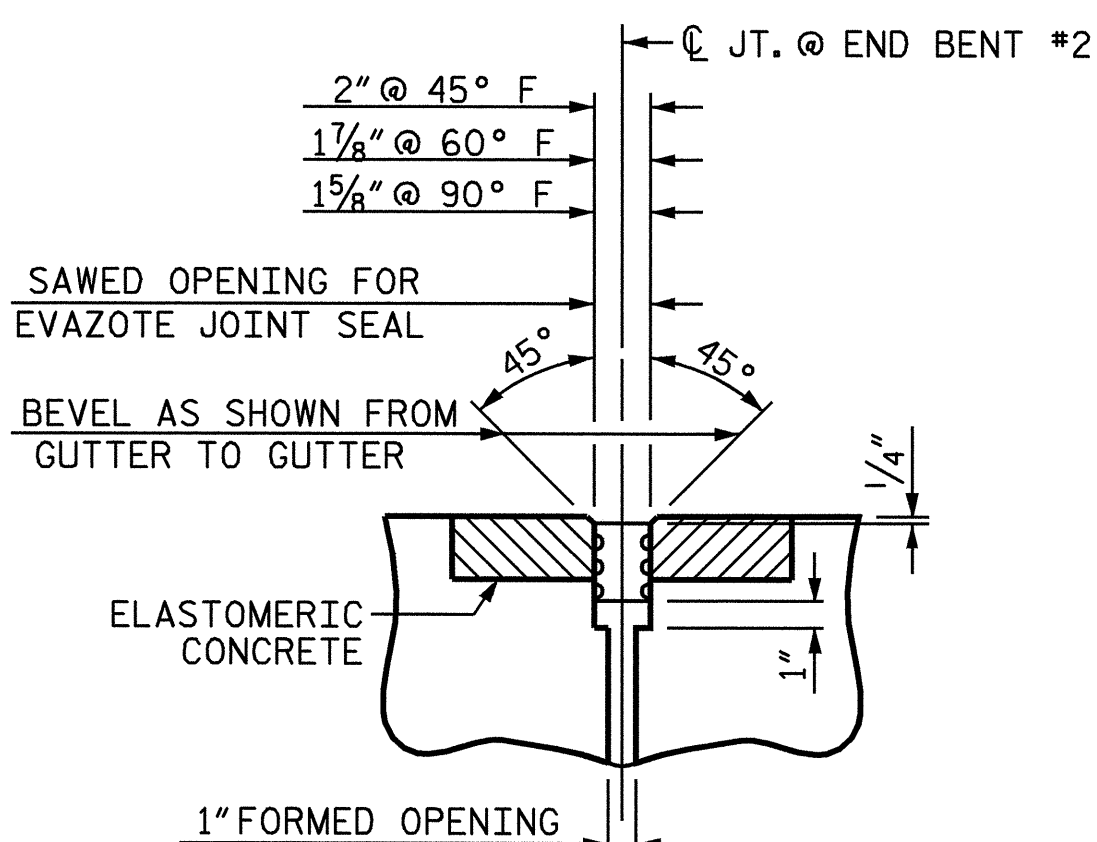
S-21



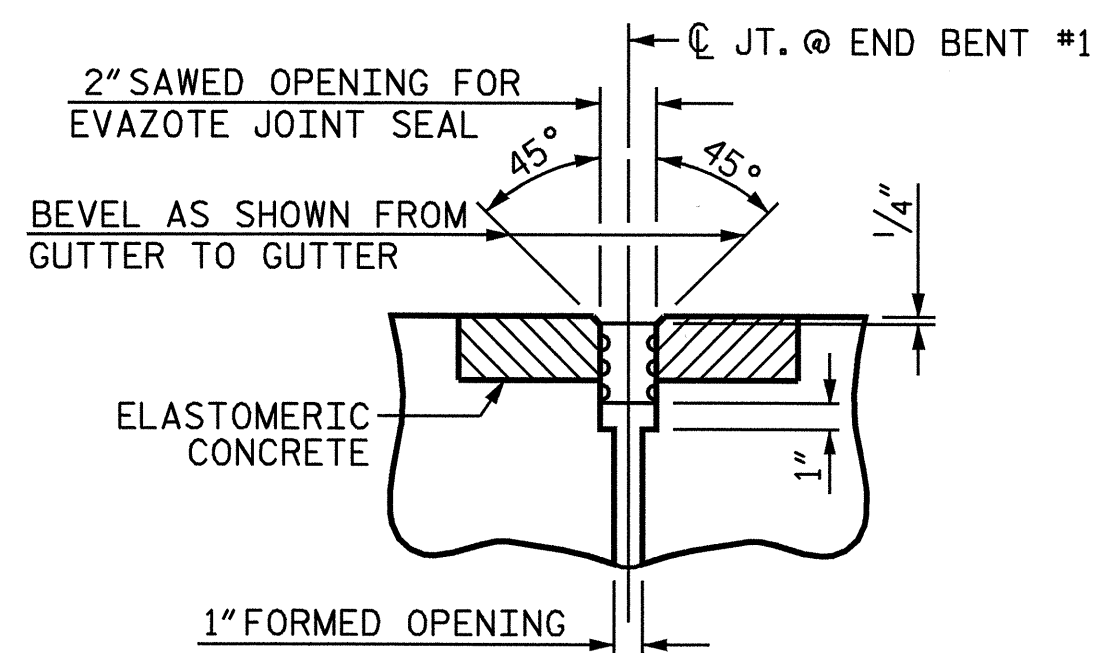
SECTION C-C
EVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)



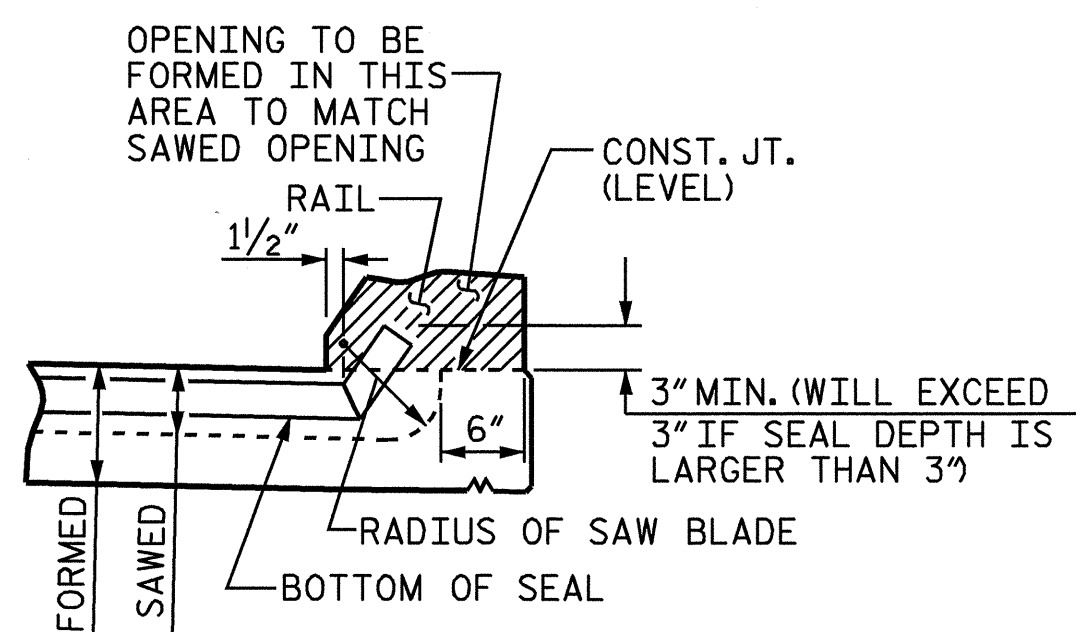
PLAN



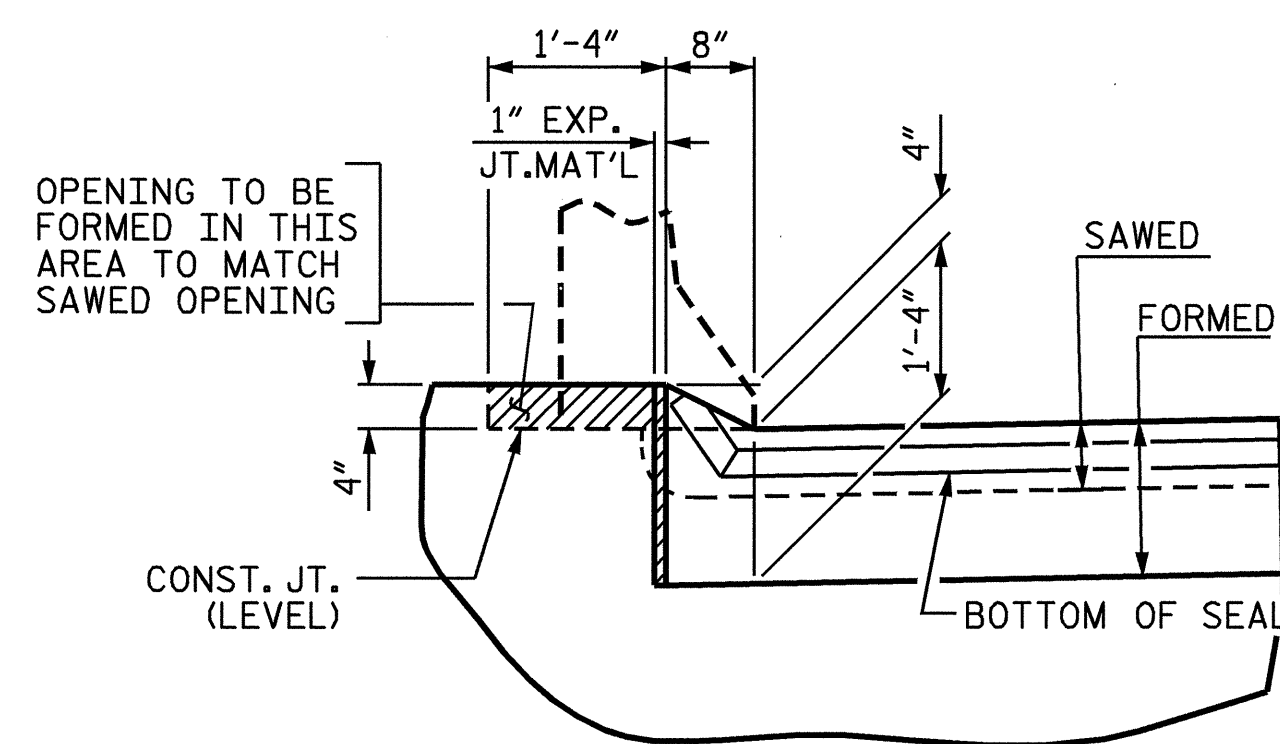
SECTION C-C
AT END BENT #2
(EXPANSION)



SECTION C-C
AT END BENT #1
(FIXED)



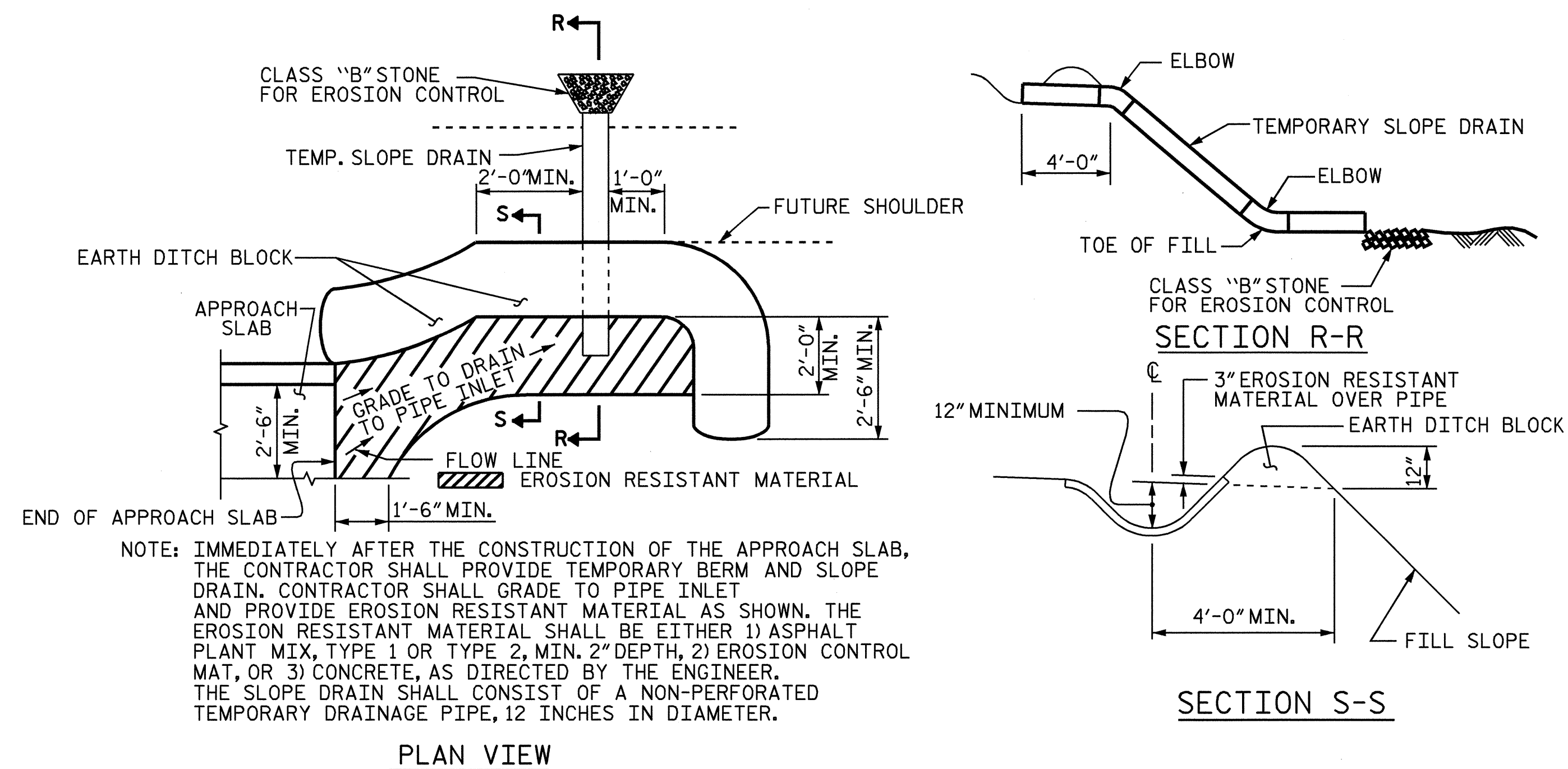
SECTION A-A



SECTION B-B

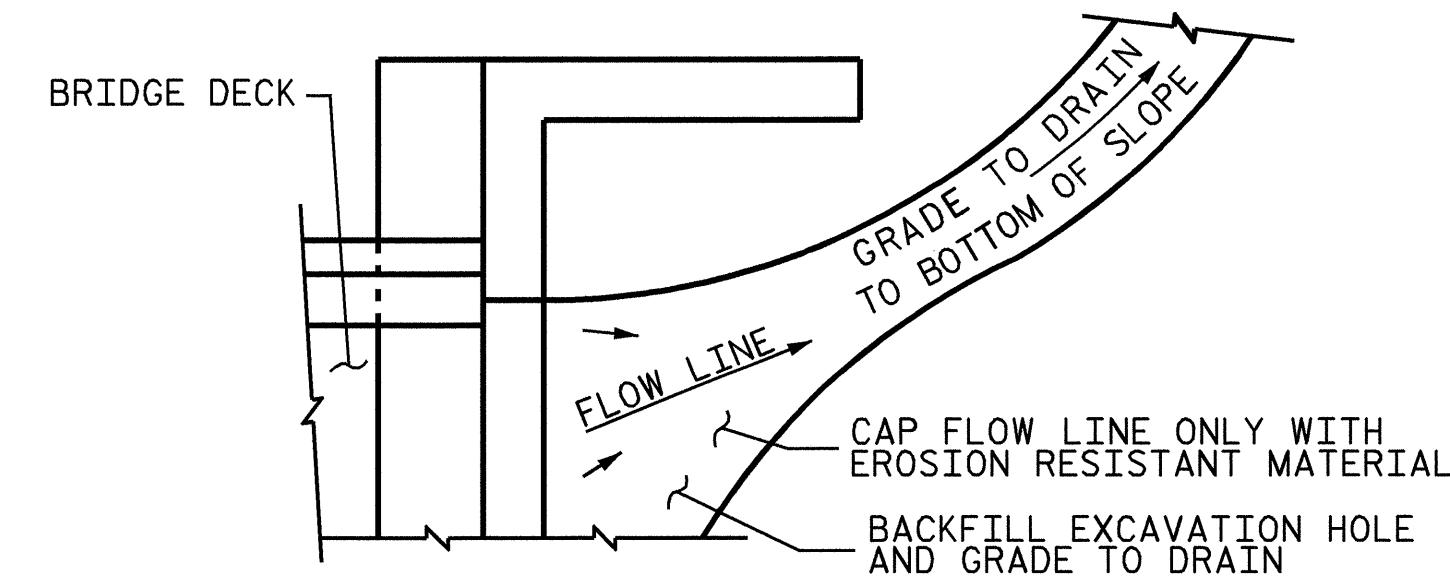
JOINT SEAL DETAILS @ END BENT

EVAZOTE JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



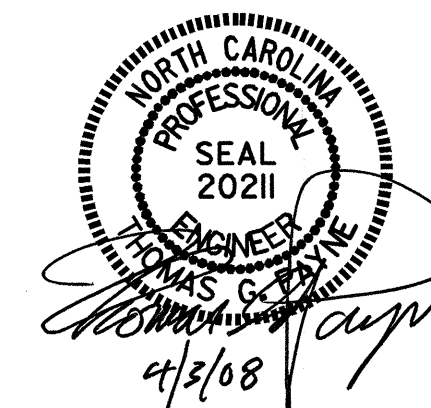
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	5.9
2	5.9
TOTAL	11.8

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

ASSEMBLED BY : R. G. EMERSON	DATE : 04/07
CHECKED BY : K. D. LAYNE	DATE : 07/07
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM



PROJECT NO. B-3661
HAYWOOD COUNTY
STATION: 16+65.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
BRIDGE APPROACH SLAB DETAILS					
1988					
SHEET NO. S-22					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 22

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2002 STANDARD SPECIFICATIONS "FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP; AND CLASS S SHALL BE USED FOR UNDERWATER FOOTING SEALS.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINISHES AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN