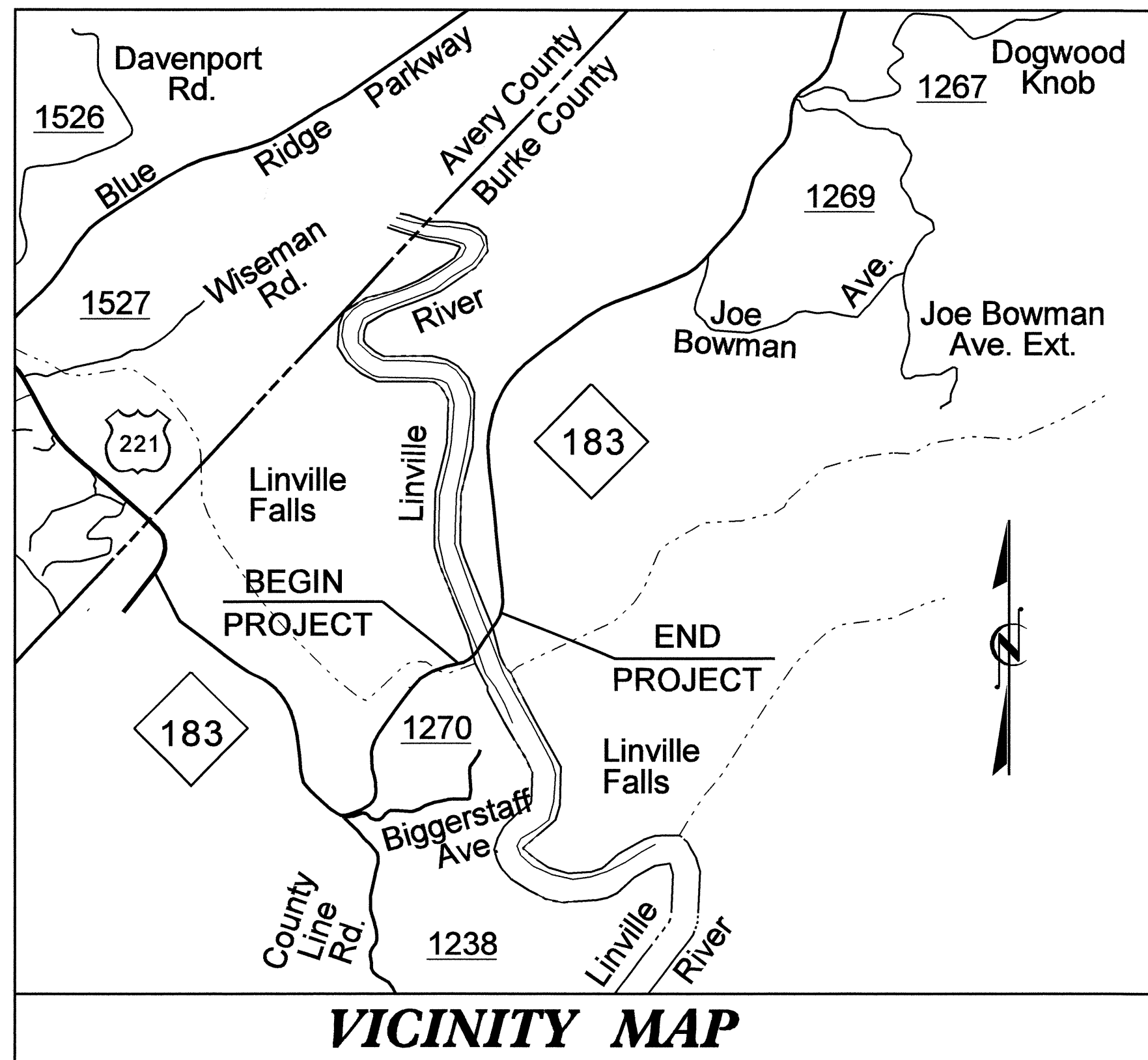


CONTRACT: C201812 TIP PROJECT: B-4038

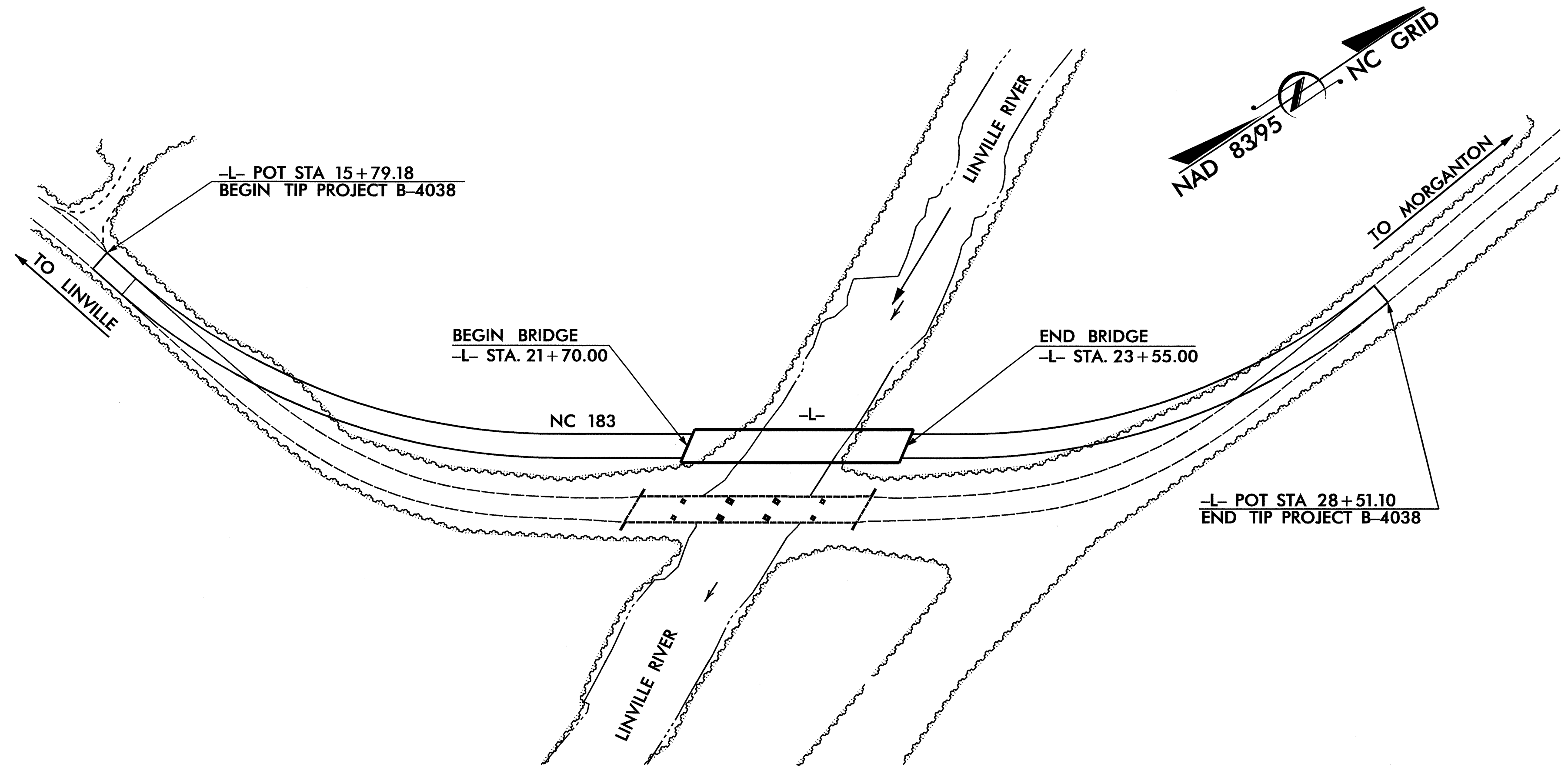
STRUCTURE



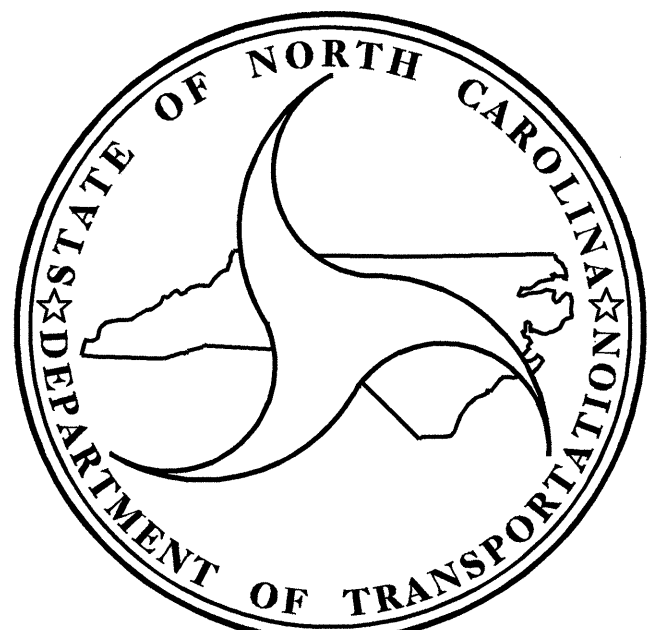
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BURKE COUNTY

LOCATION: BRIDGE NO. 26 OVER LINVILLE RIVER ON NC 183
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4038		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33404.1.1	BRSTP-0183(1)	P.E.	
33404.2.1	BRSTP-0183(1)	UTIL. & RW	
33404.3.1	BRSTP-0183(1)	CONST.	



**** DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT REQUIRED.**



DESIGN DATA

ADT 2008	=	831
ADT 2028	=	1265
DHV	=	12 %
D	=	55 %
T	=	4 % *
** V	=	60 MPH
* TTST	1%	DUAL 3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4157	=	0.206 MI
LENGTH STRUCTURE TIP PROJECT B-4157	=	0.035 MI
TOTAL LENGTH TIP PROJECT B-4157	=	0.241 MI

Prepared In the Office of:
DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

LETTING DATE : JUNE 17, 2008	J. C. FRYE, P.E. <small>PROJECT ENGINEER</small>
	T. H. FANG, P.E. <small>PROJECT DESIGN ENGINEER</small>

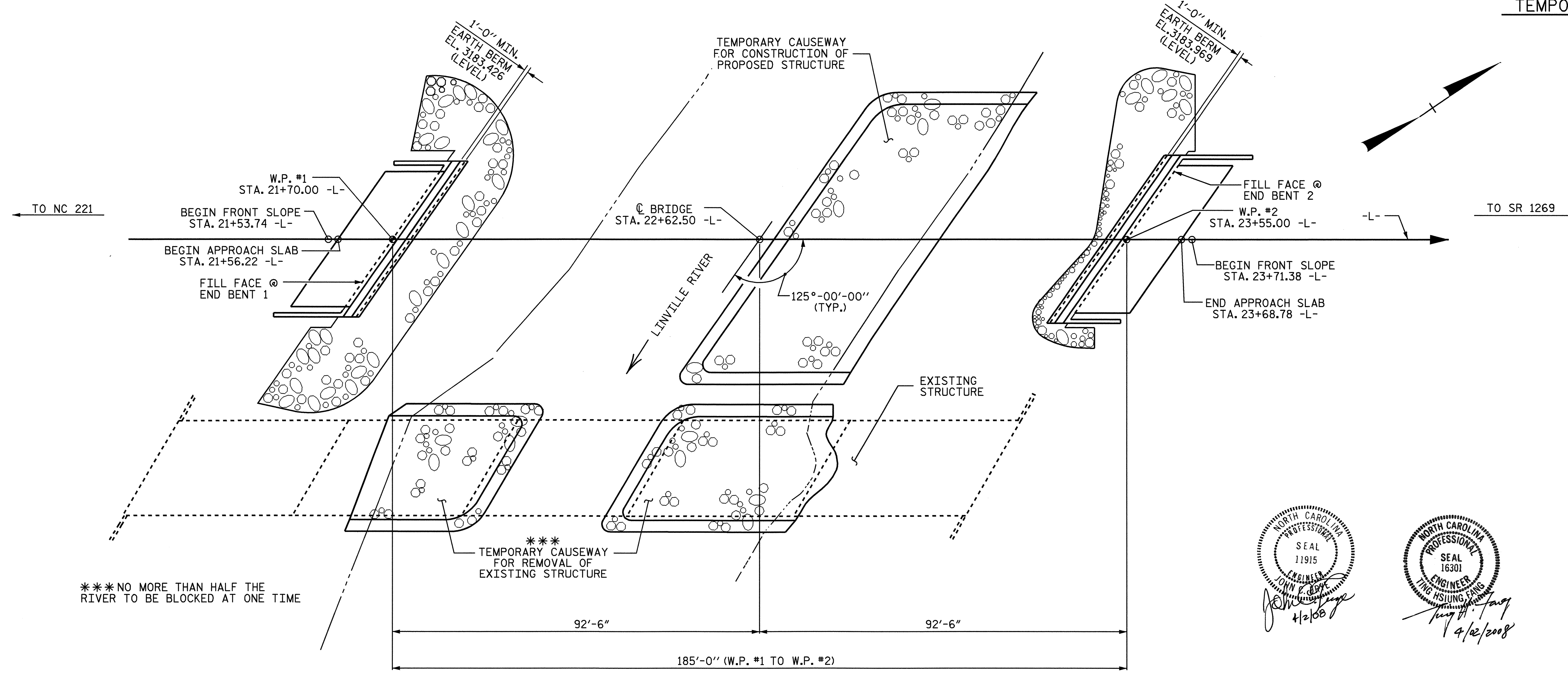
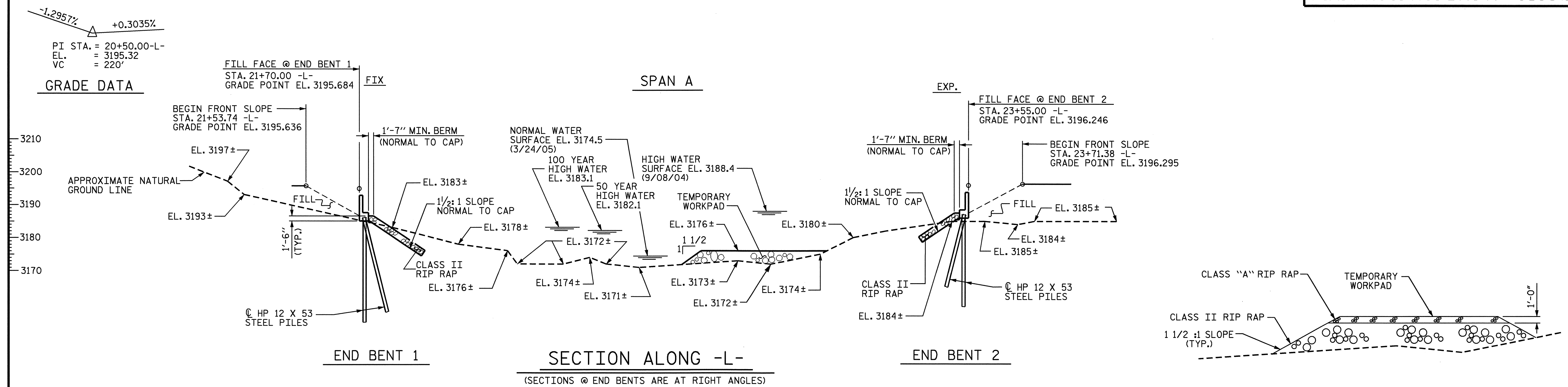
STRUCTURE DESIGN UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

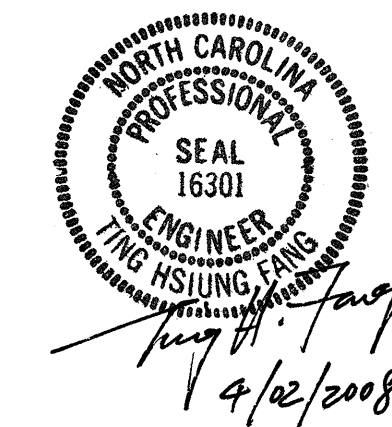
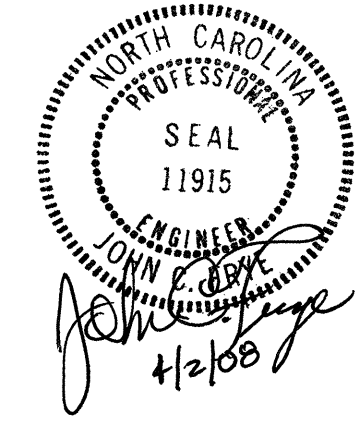
APPROVED _____ DATE _____
DIVISION ADMINISTRATOR



PROJECT NO. B-4038
 BURKE COUNTY
 STATION: 22+62.50 -L-

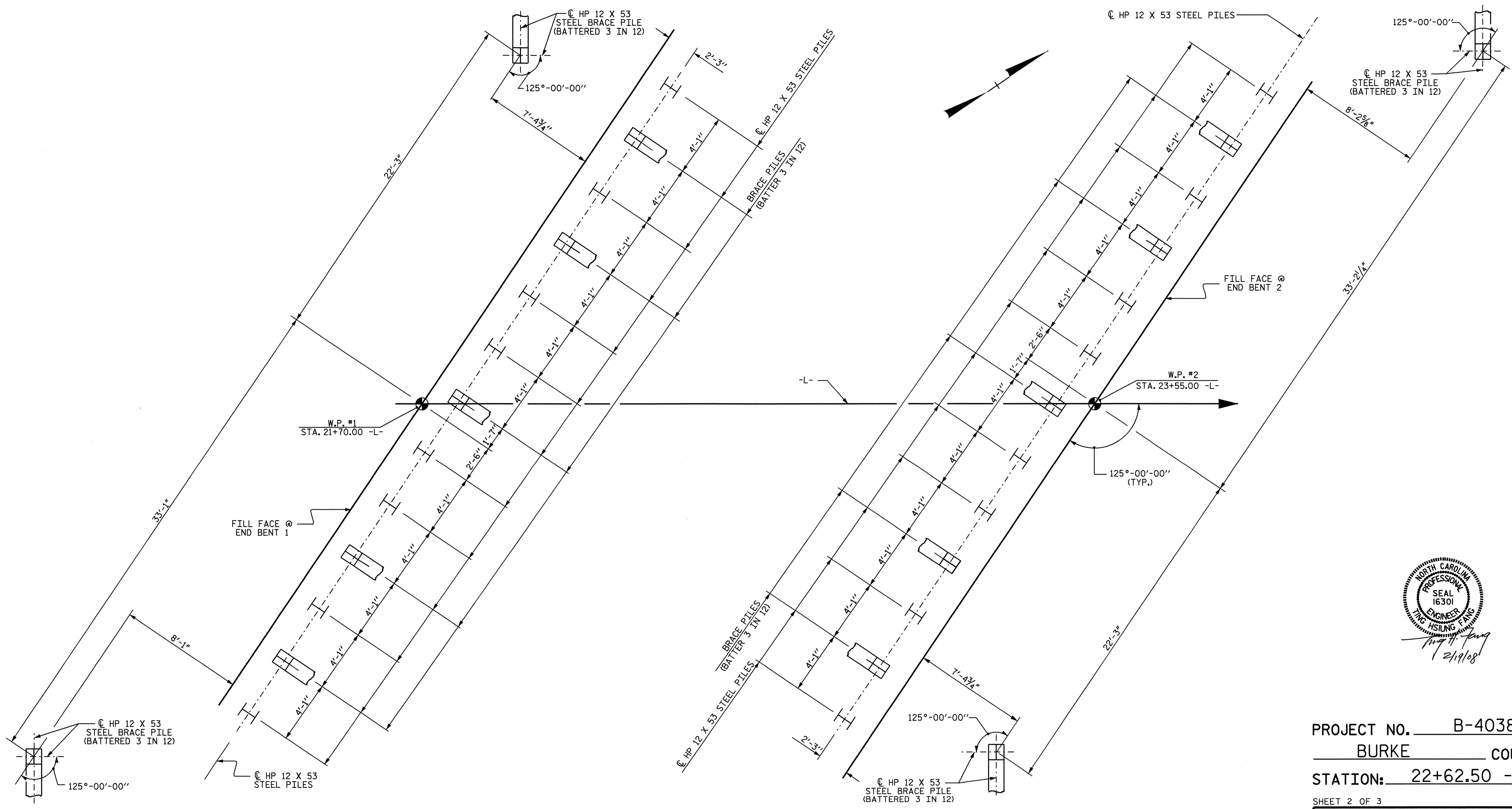
SHEET 1 OF 3 REPLACES BRIDGE NO. 26

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGE OVER LINVILLE RIVER ON NC 183
 BETWEEN SR 1270 & SR 1269



DRAWN BY : QT NGUYEN DATE : 6-07
 CHECKED BY : D.G. ELY DATE : 10/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS 23
2			4			



END BENT 1

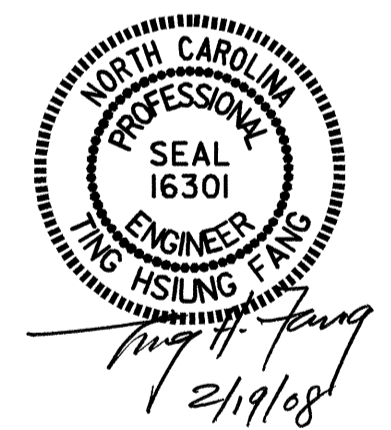
END BENT 2

FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE)

NOTES

DRIVE PILES AT END BENTS 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 BENTS 1 AND 2 IS 60 TONS PER PILE.
 DRIVE PILES AT END BENTS 1 AND 2 TO A TIP ELEVATION NO HIGHER THAN 3177 FT.
 STEEL PILES POINTS ARE REQUIRED FOR STEEL PILES AT END BENT 1 AND END BENT 2. SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 PILE EXCAVATION MAY BE REQUIRED TO ATTAIN THE REQUIRED PILE PENETRATION OR TIP ELEVATION NO HIGHER THAN AT END BENT 1 AND END BENT 2. IF REQUIRED, EXCAVATE HOLES TO ELEVATION 3177 FT. SEE PILE EXCAVATION SPECIAL PROVISION.
 NO WAITING PERIOD IS REQUIRED BEFORE END BENT CONSTRUCTION.



PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-
 SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
BRIDGE OVER LINVILLE
RIVER ON NC 183
BETWEEN SR 1270 AND
SR 1269

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			23

DRAWN BY : H.B. SHAH DATE : 06/07
 CHECKED BY : D.G. ELY DATE : 10/07

19-FEB-2008 12:02
 Z:\Structures\B4038\FINAL_PLANS\b4038_sd.gd.dgn
 rww:lahf

TOTAL BILL OF MATERIAL

	CONST., MAINT. & REMOVAL OF TEMP. ACCESS	REMOVAL OF EXISTING STRUCTURE	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	STRUCTURAL STEEL	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	LIN. FT.	LIN. FT.	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	APPROX. LBS.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE					6,795	6,460		LUMP SUM		333,200			364.56				LUMP SUM	LUMP SUM
END BENT 1			46	46			52.3		6,638		15	150	15		180	200		
END BENT 2			46	46			52.5		6,632		15	225	15		100	110		
TOTAL	LUMP SUM	LUMP SUM	92	92	6,795	6,460	104.8	LUMP SUM	13,270	333,200	30	375	30	364.56	280	310	LUMP SUM	LUMP SUM

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.

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.

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

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING STRUCTURE CONSISTING OF 5 SPANS @ 42'-6" 24'-2" CLEAR ROADWAY WIDTH AND RC DECK ON REINFORCED CONCRETE GIRDERS; END BENTS: RC CAP ON H-PILES; INTERIOR BENTS: RC POST & BEAM AND LOCATED 30 FEET DOWNSTREAM FROM 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 SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAYS MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 22+62.50 -L-.

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 EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

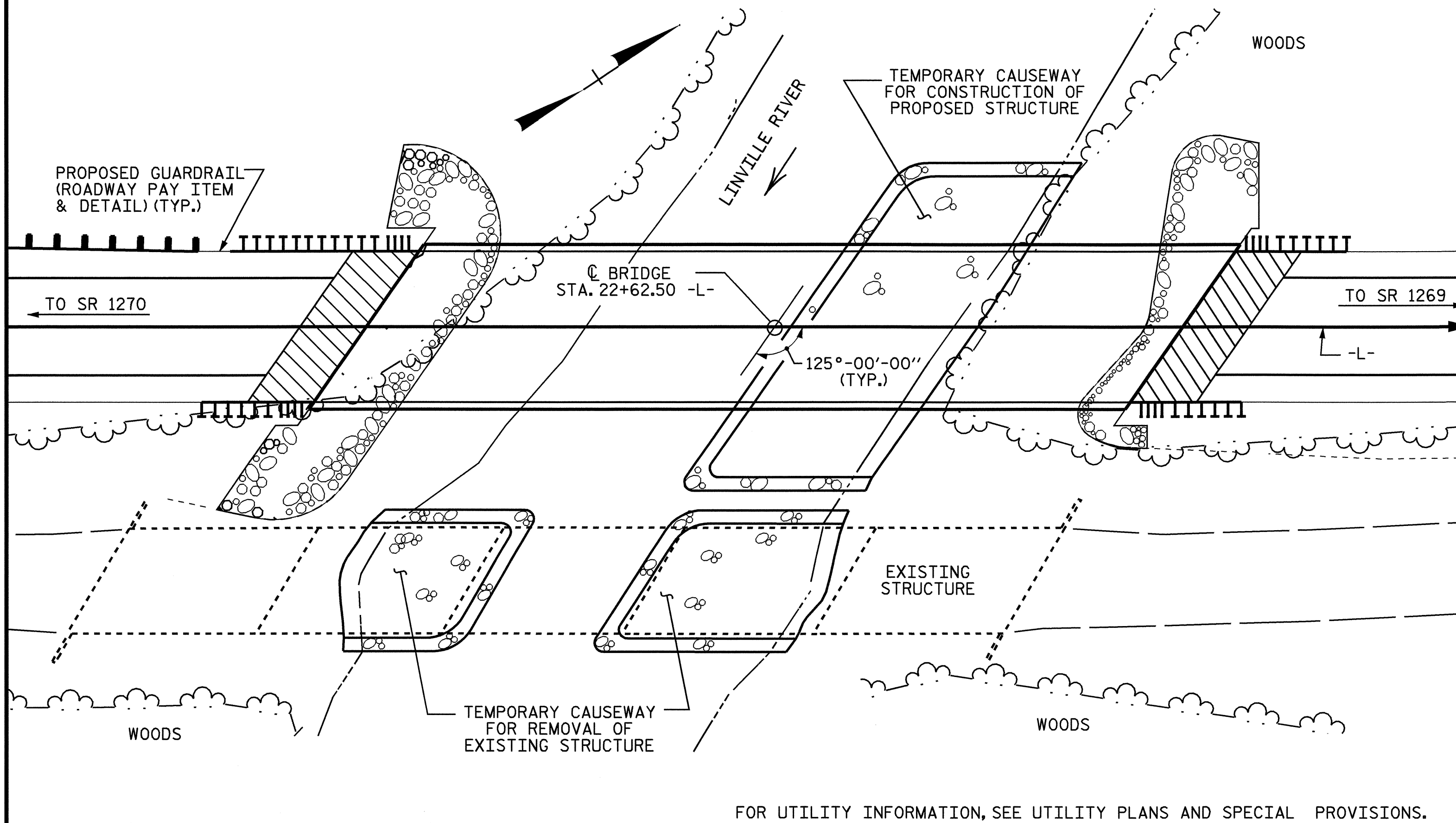
FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR SHIPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL PROVISIONS.

DIRECTION OF CASTING DECK CONCRETE SHALL BE FROM THE FIXED BEARING END TOWARD THE EXPANSION BEARING END OF THE SPAN.

BM #2: 8" NAIL IN BASE OF 12" BIRCH, 79.57' RT. OF -L- STA. 18+48.42, EL. 3199.16



LOCATION SKETCH

HYDRAULIC DATA

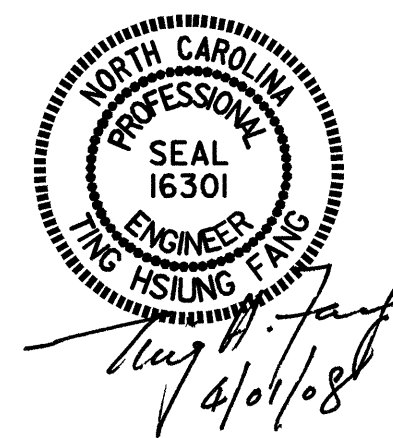
DESIGN DISCHARGE	=	6450 C.F.S.
FREQUENCY OF DESIGN FLOOD	=	50 YR.
DESIGN HIGH WATER ELEVATION	=	3182.1
DRAINAGE AREA	=	41.9 SQ. MI.
BASIC DISCHARGE (Q100)	=	7700 C.F.S.
BASIC HIGH WATER ELEVATION	=	3183.1

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	11115+ C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	=	500+ YR.
OVERTOPPING FLOOD ELEVATION	=	3192.0

DRAWN BY : QT NGUYEN DATE : 5-06
 CHECKED BY : D.G. ELY DATE : 10/07

14-MAR-2008 07:47
 z:\structures\4038\final.plans\4038_sd.gd.dgn



PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGE OVER LINVILLE
 RIVER ON NC 183
 BETWEEN SR 1270 &
 SR 1269

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

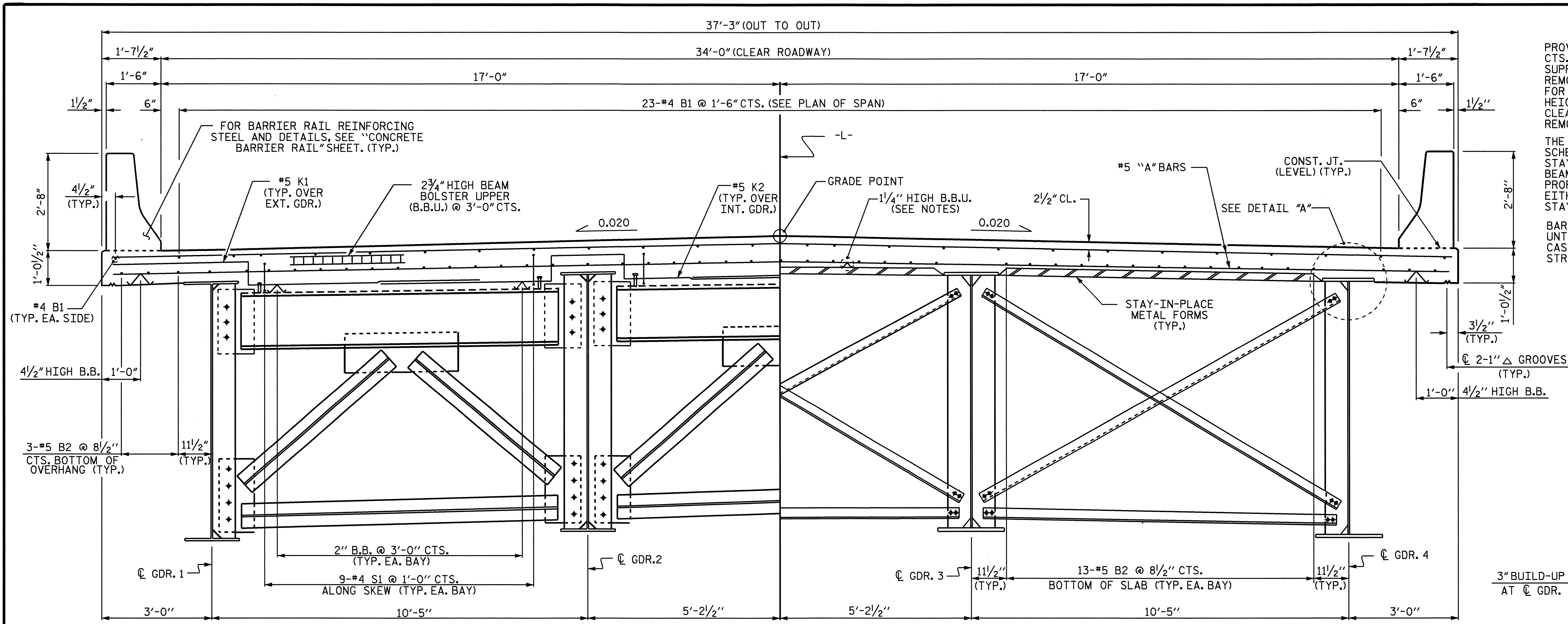
S-3
TOTAL SHEETS 23

NOTES

PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE STAY-IN-PLACE METAL 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.

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

BARRIER RAIL IN THE SPAN 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.

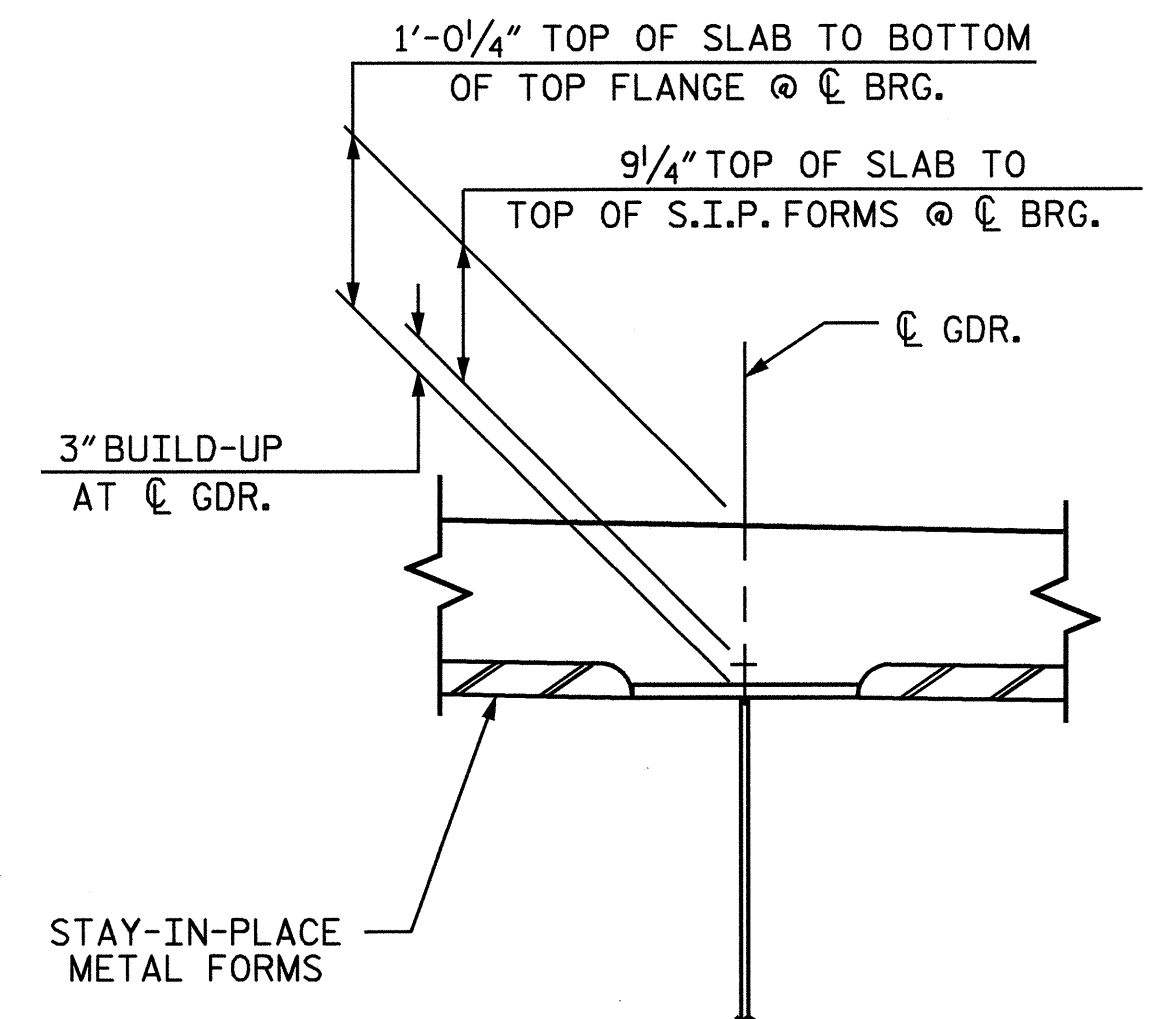


PART TYPICAL SECTION

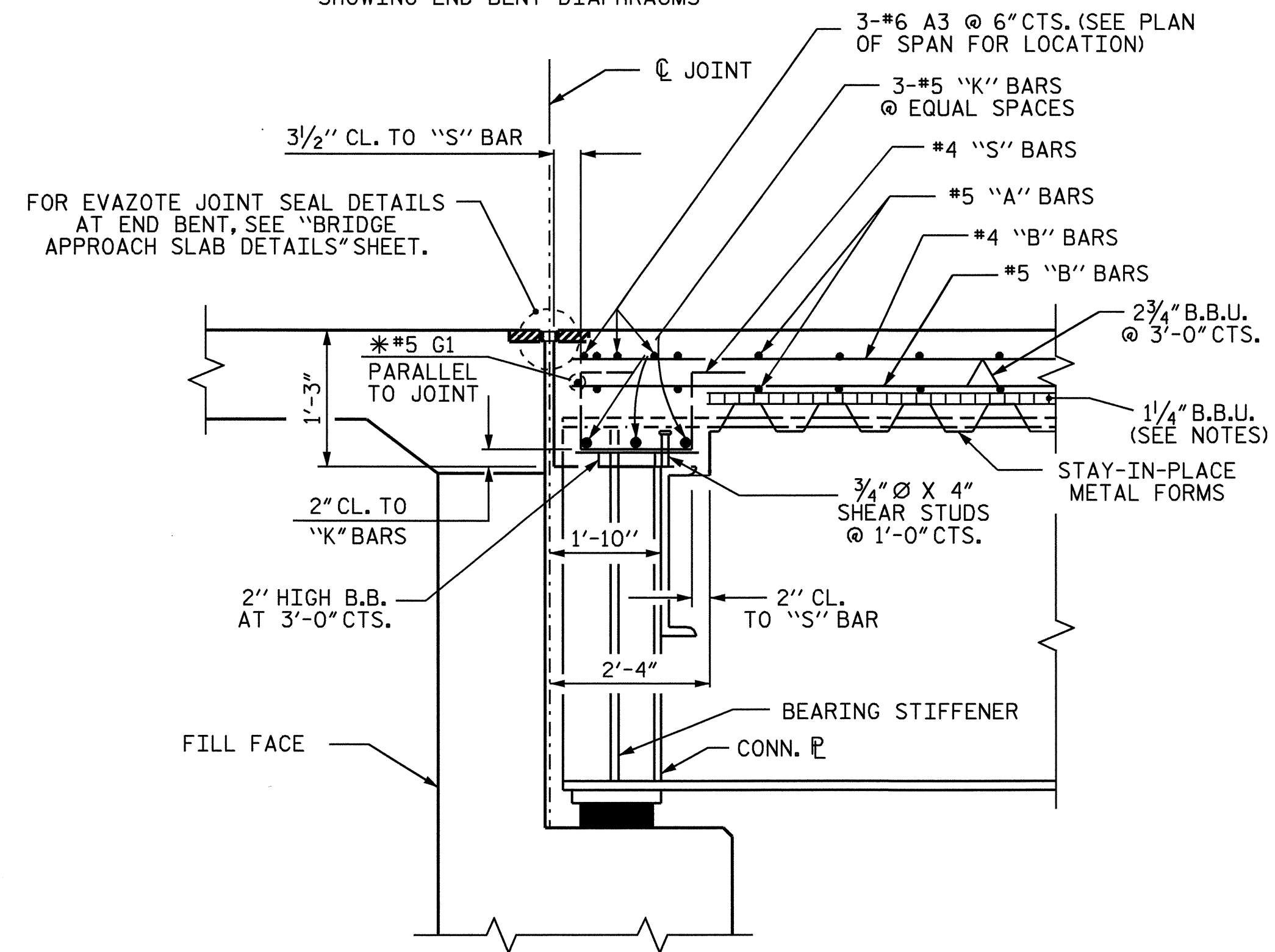
SHOWING END BENT DIAPHRAGMS

PART TYPICAL SECTION

SHOWING INTERMEDIATE DIAPHRAGMS

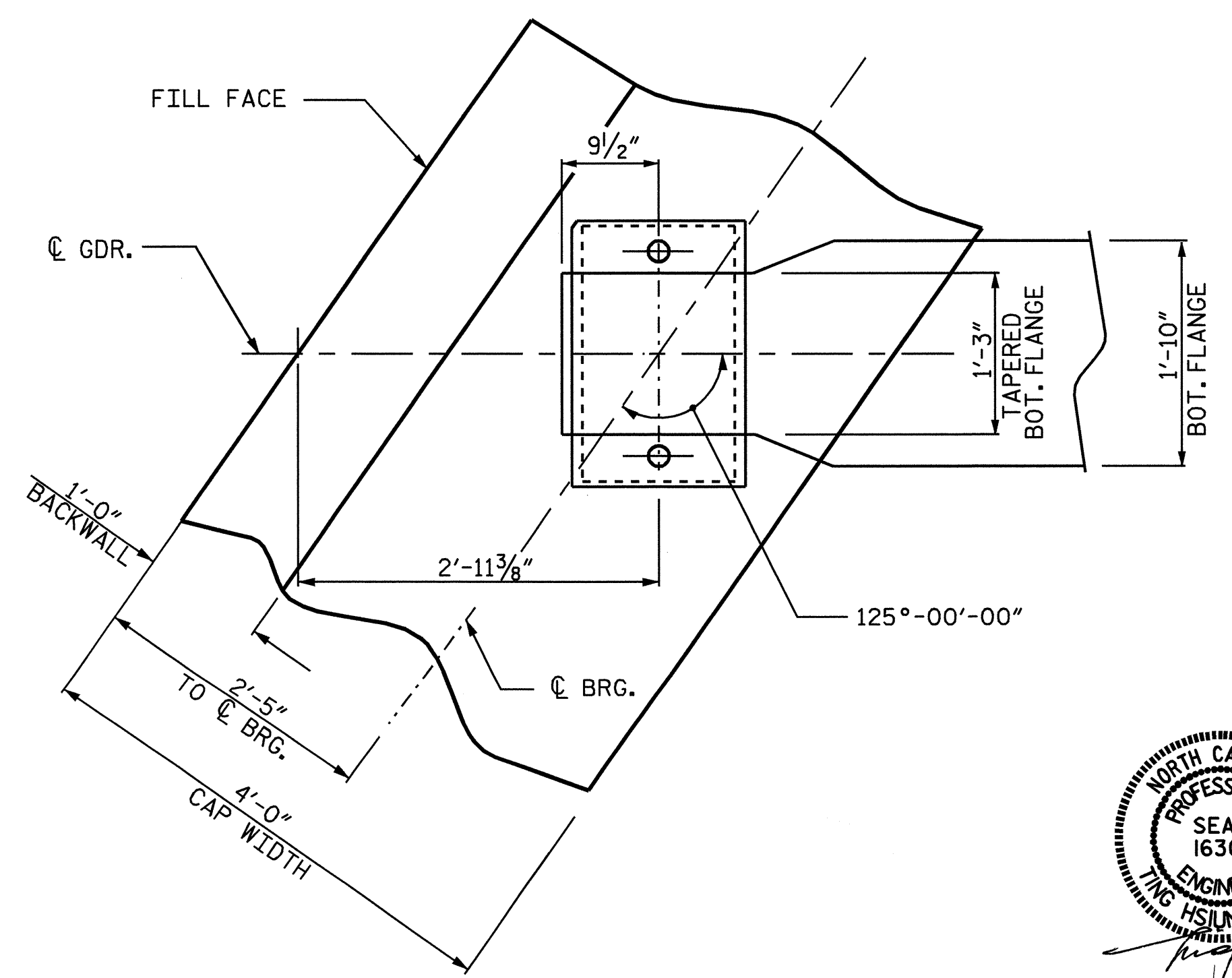


DETAIL "A"



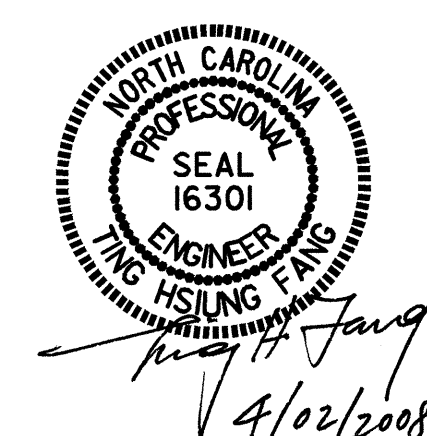
SECTION @ END BENT

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



PLAN OF GIRDER @ END BENT

END BENT 1 SHOWN, END BENT 2 SIMILAR

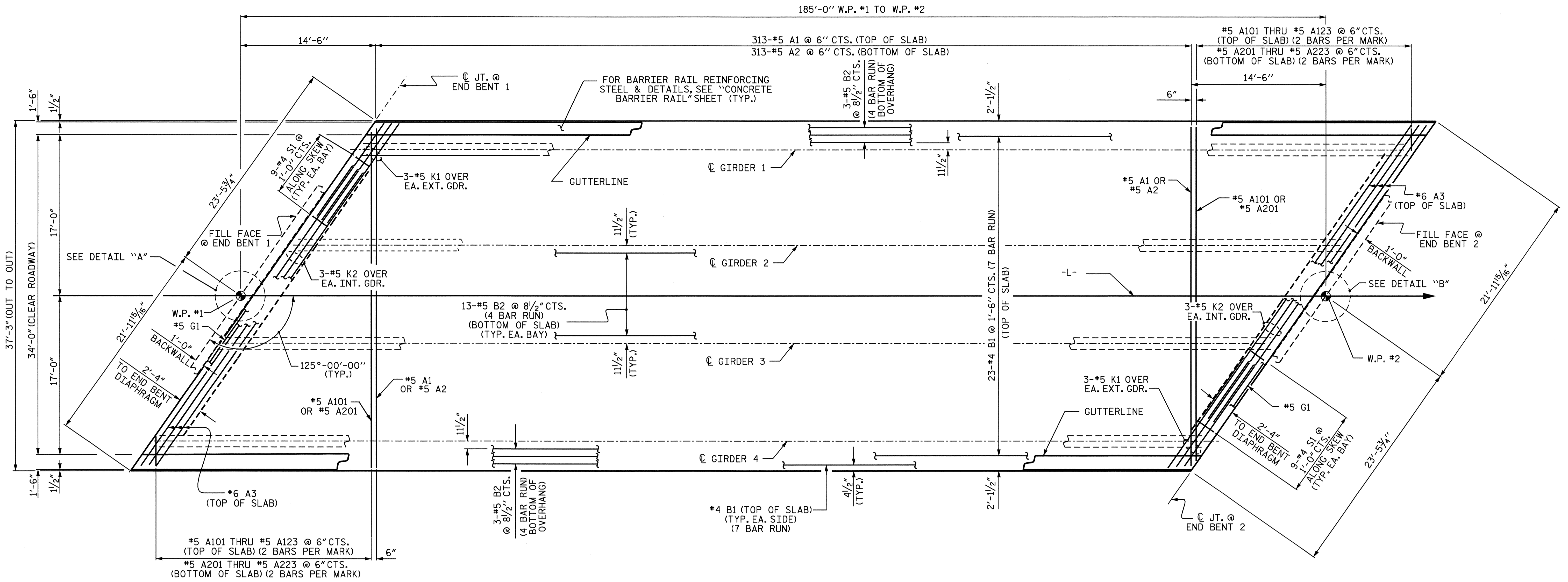


PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

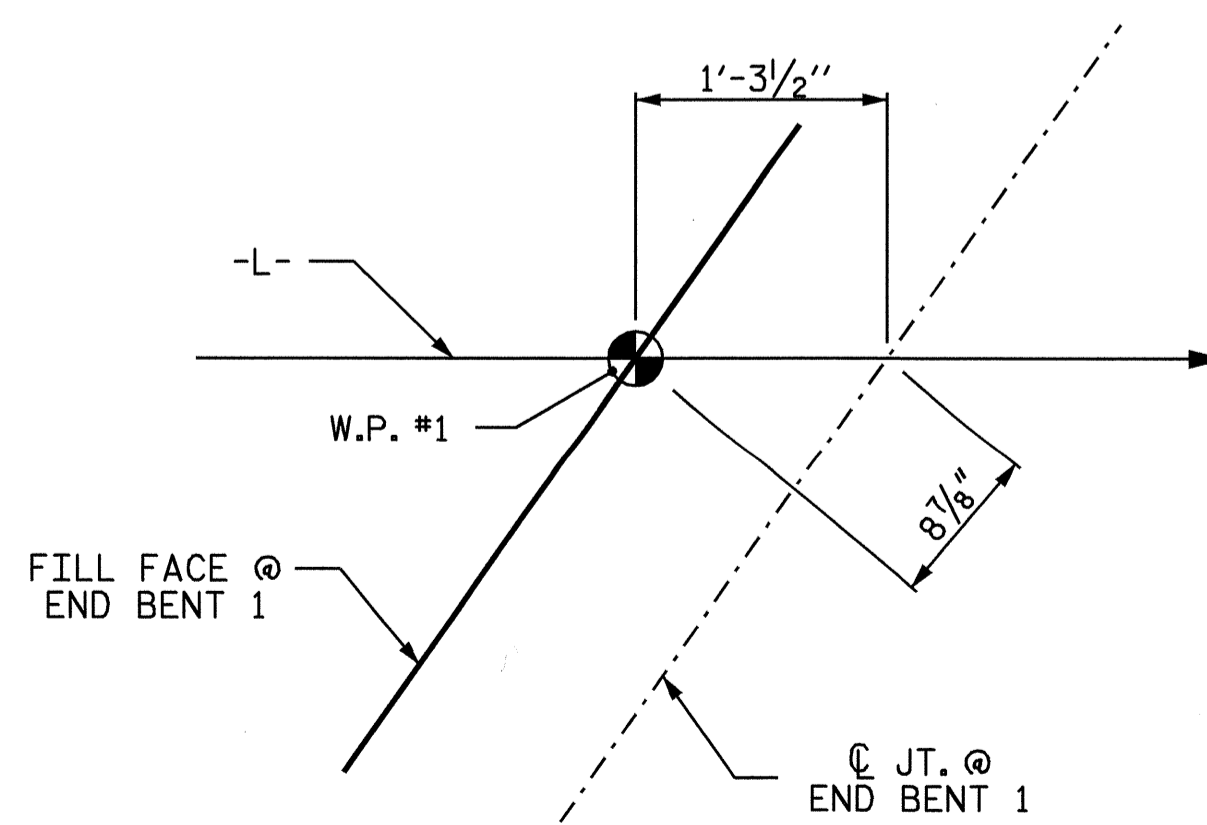
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 AND DETAILS

REVISIONS						SHEET NO. S-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

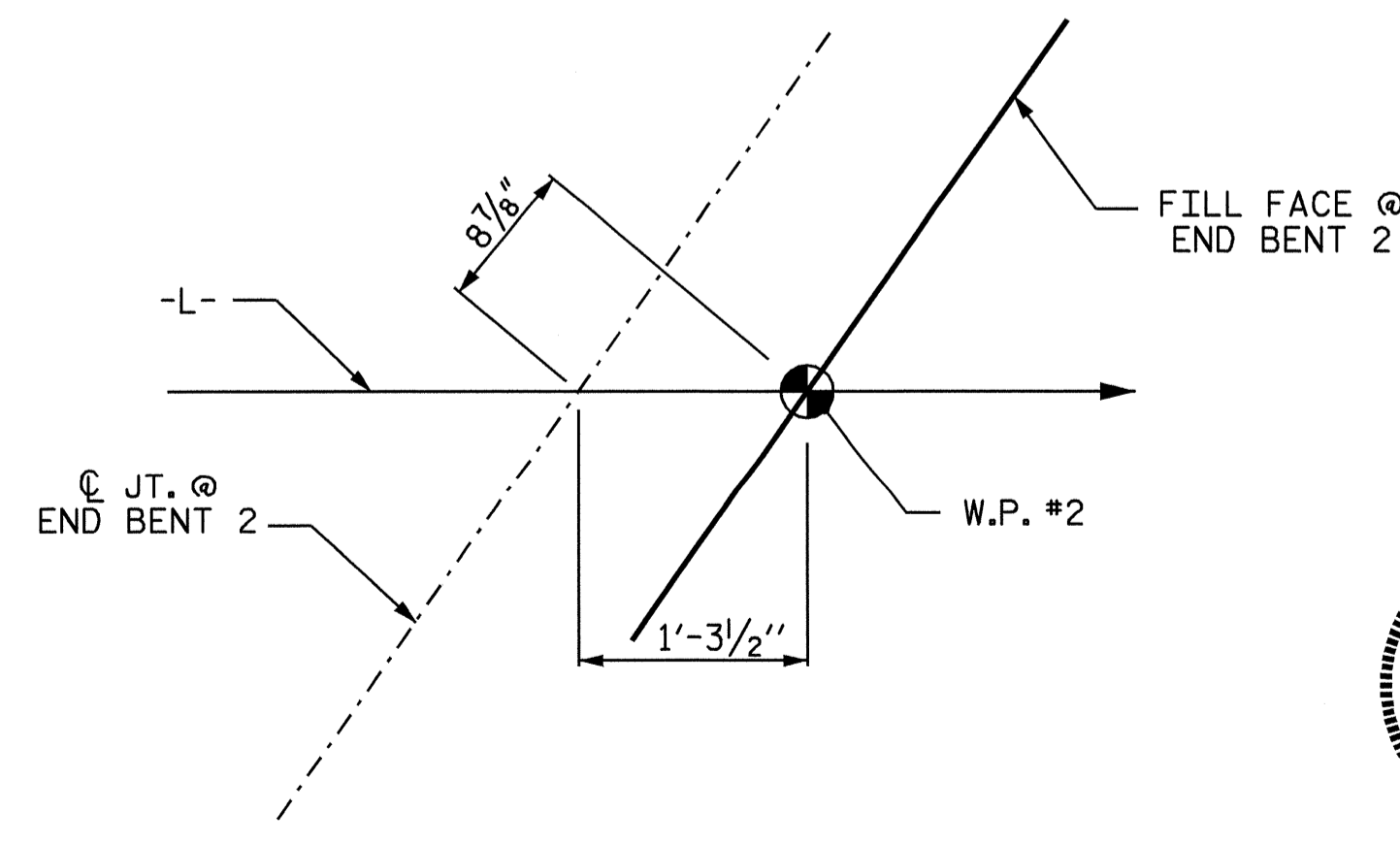
DRAWN BY: H. B. SHAH DATE: 05/14/07
 CHECKED BY: D. G. ELY DATE: 10/07



PLAN OF SPAN A

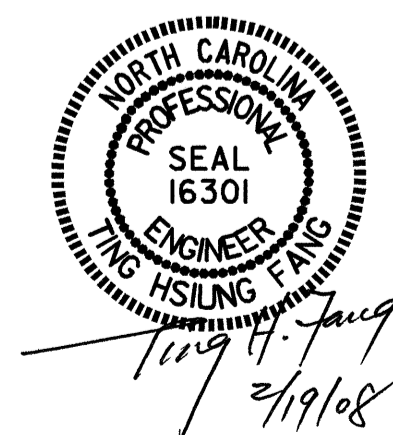


DETAIL "A"



DETAIL "B"

PROJECT NO. B-4038
 BURKE COUNTY
 STATION: 22+62.50 -L-

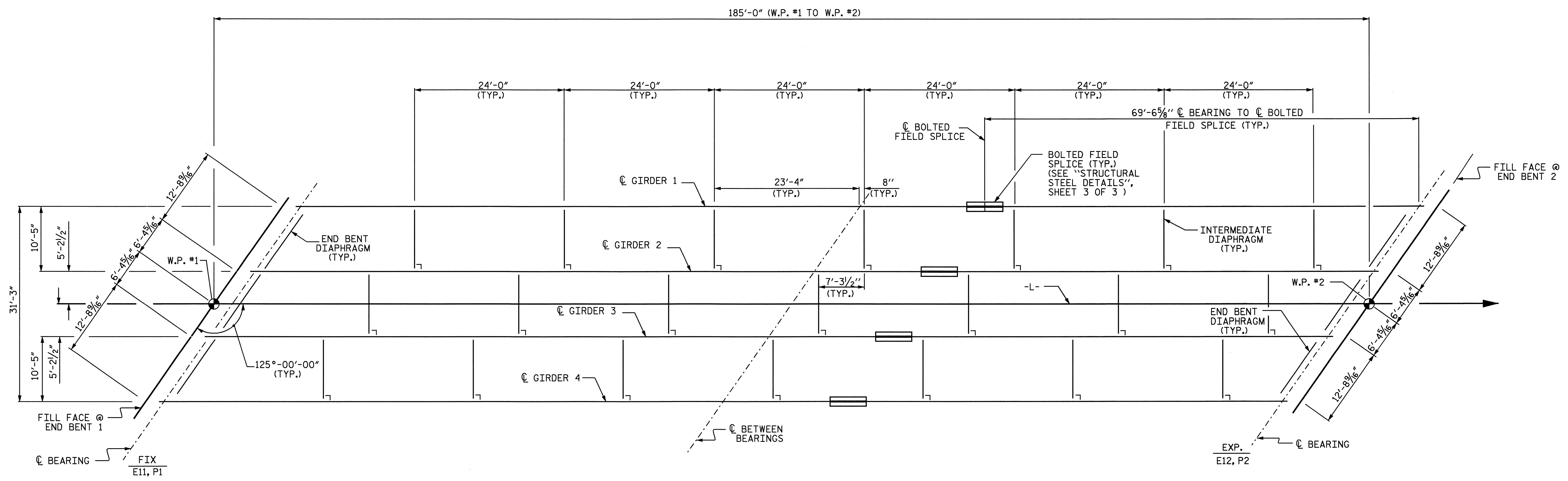


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN

DRAWN BY: H.B. SHAH DATE: 05/25/07
 CHECKED BY: D.G. ELY DATE: 10/07

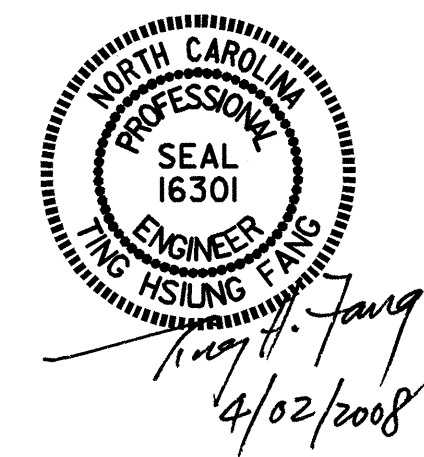
19-FEB-2008 12:02
 Z:\Structures\B4038\FINAL_PLANS\b4038_sd.ps.dgn

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5	
1			3			TOTAL SHEETS 23	
2			4				



FRAMING PLAN

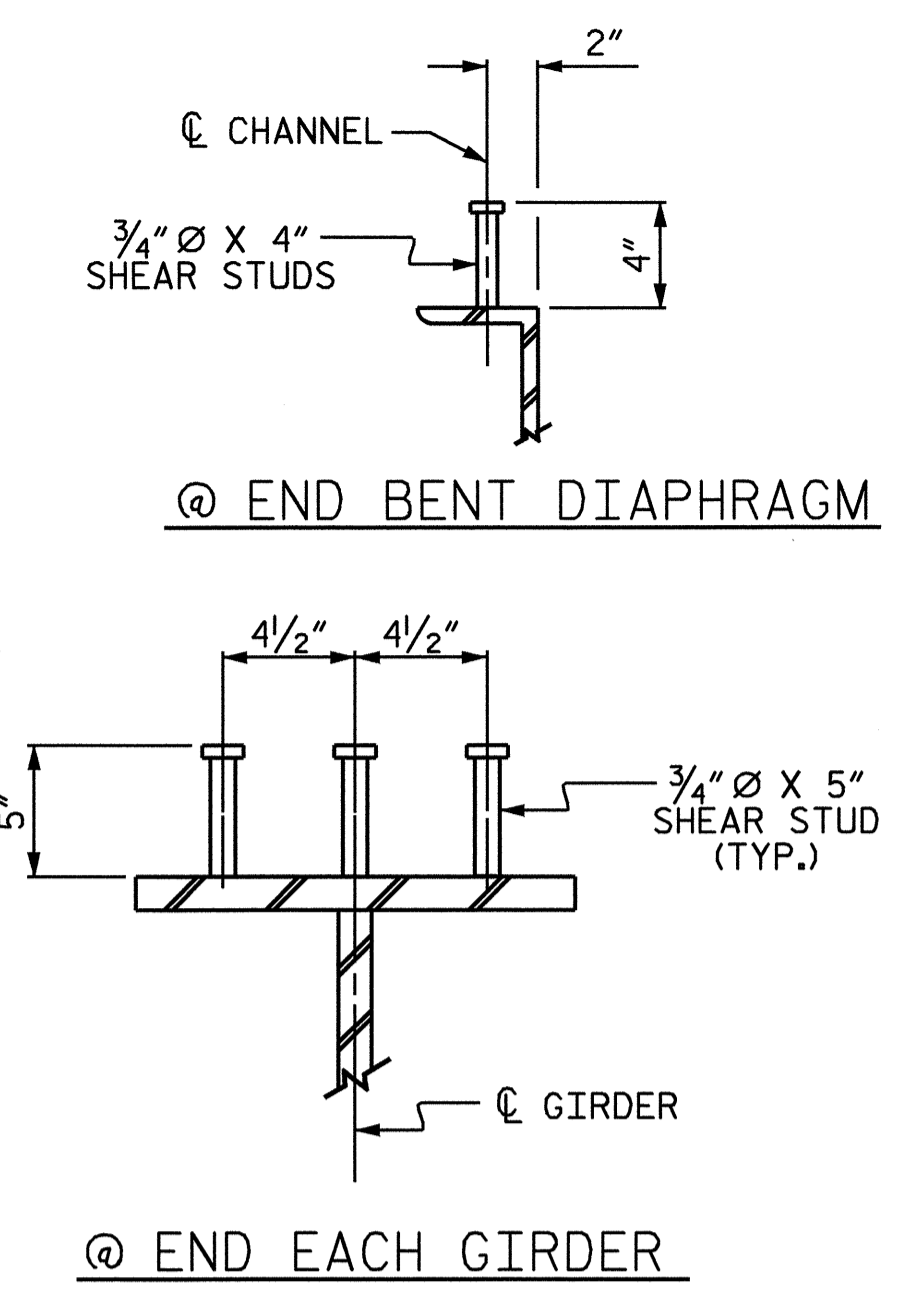
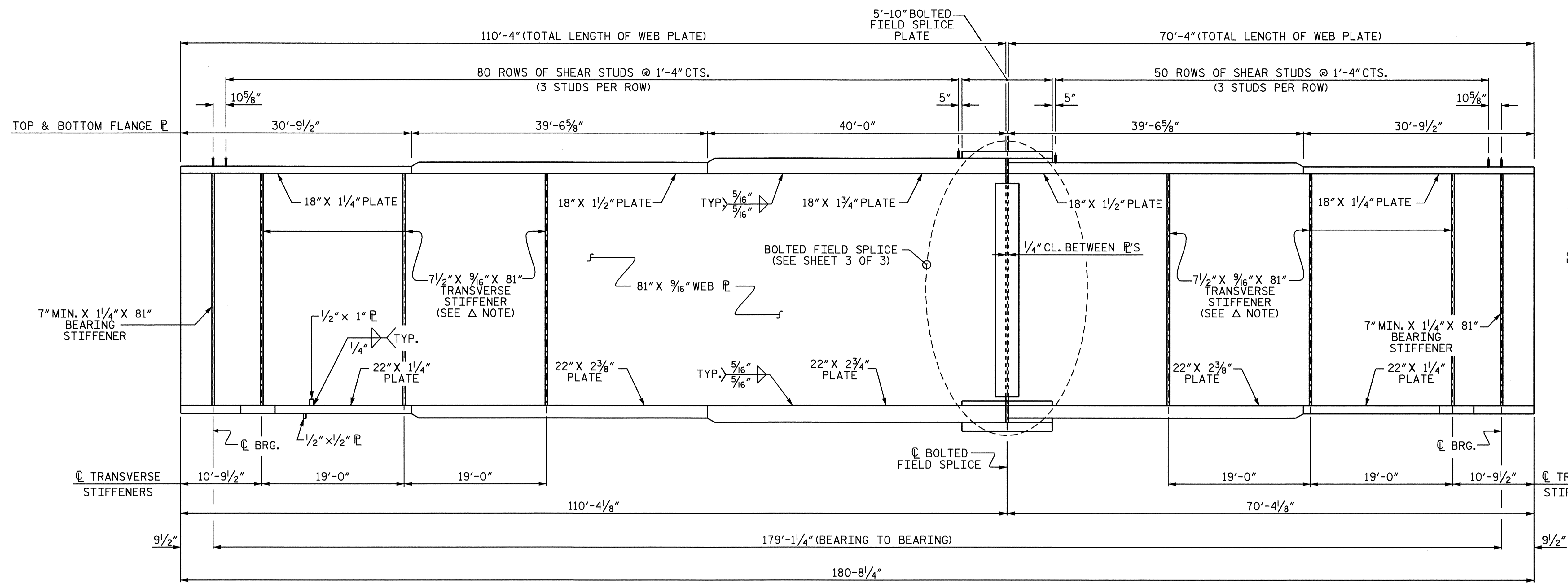
PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 FRAMING PLAN

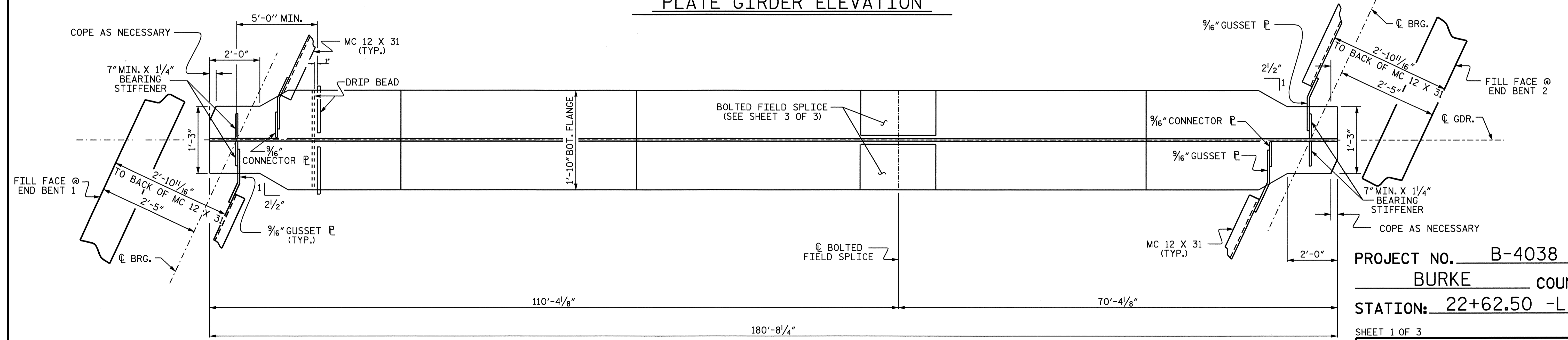
DRAWN BY : H.B.SHAH DATE : 6/8/07
 CHECKED BY : D.G. ELY DATE : 10/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			23



SHEAR STUD DETAILS

PLATE GIRDER ELEVATION



PROJECT NO. **B-4038**
BURKE COUNTY
 STATION: **22+62.50 -L-**
 SHEET 1 OF 3

Δ NOTE:
 TRANSVERSE STIFFENERS ARE TO BE PLACED ON ONE SIDE OF GIRDERS ONLY. TRANSVERSE STIFFENERS ARE NOT TO BE PLACED ON THE OUTSIDE OF EXTERIOR GIRDERS.

BOTTOM FLANGE DETAIL



DRAWN BY: D. G. ELY DATE: 10/07
 CHECKED BY: T.H. FANG DATE: 01-08

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 23

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" DIAMETER 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 FOR ALL GIRDERS AND IN ACCORDANCE WITH ARTICLE 1072-9 OF THE STANDARD SPECIFICATIONS.

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. 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.

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

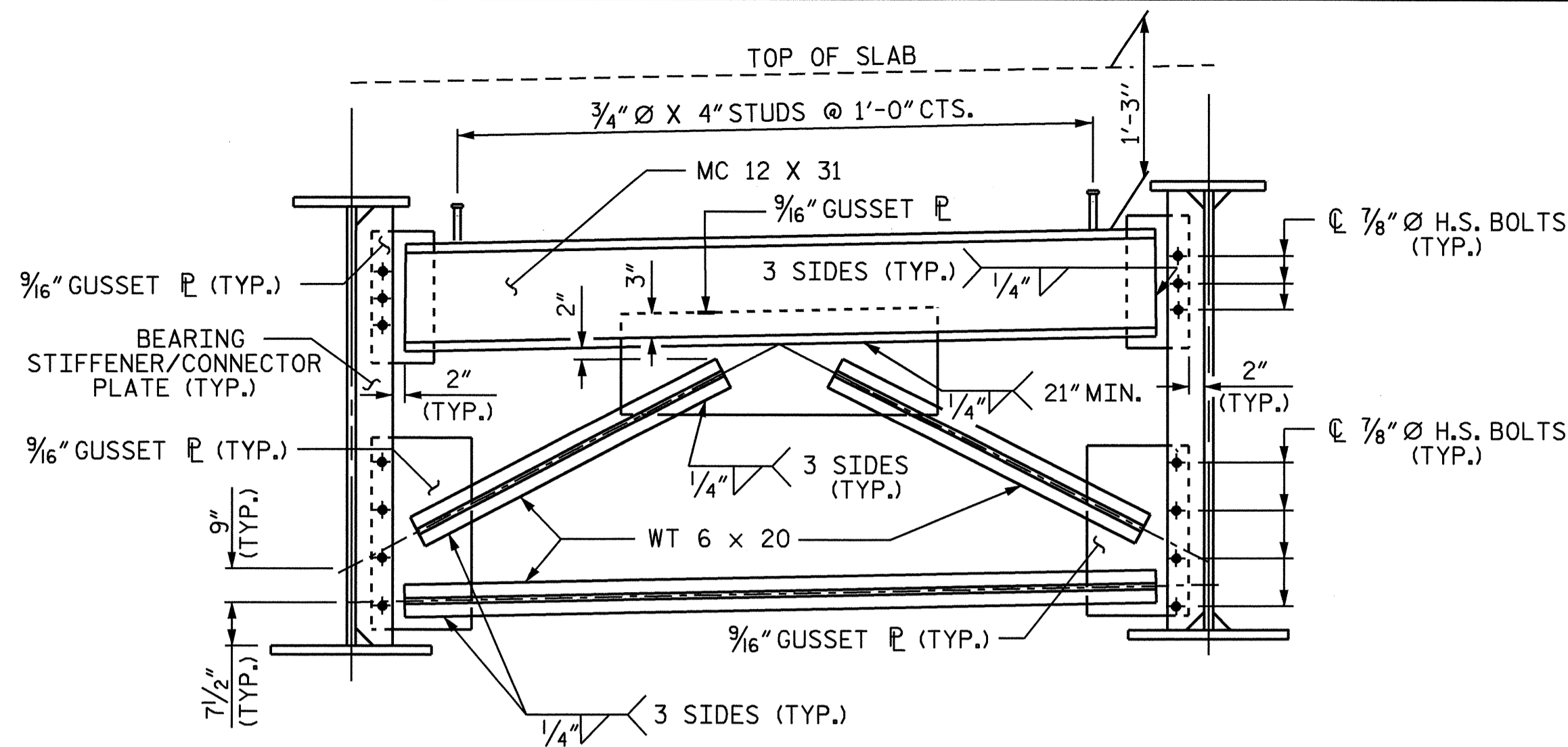
TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

END OF GIRDERS SHALL BE PLUMB.

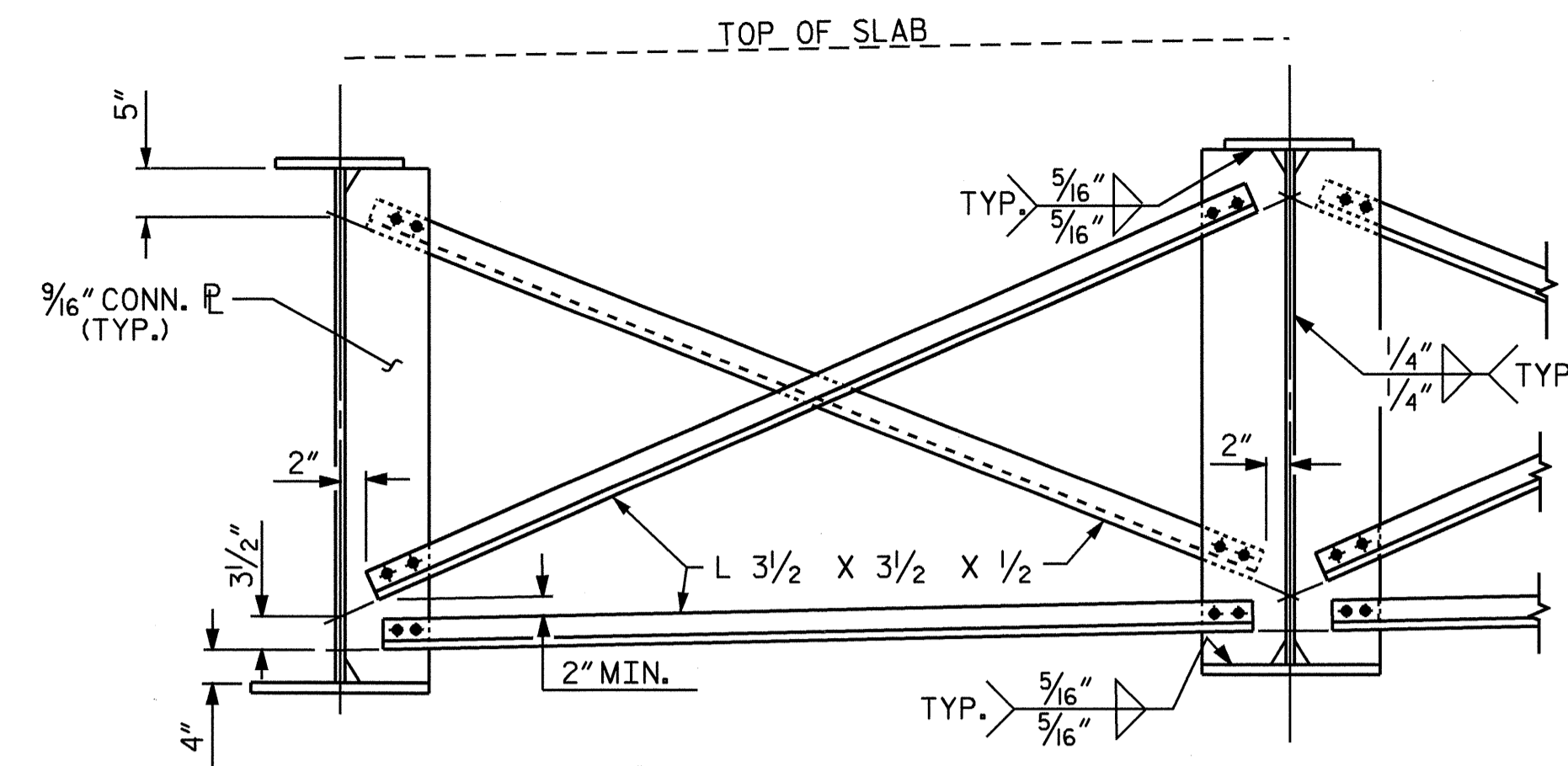
BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE TO AVOID INTERFERENCE WITH THE ANCHOR BOLT.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

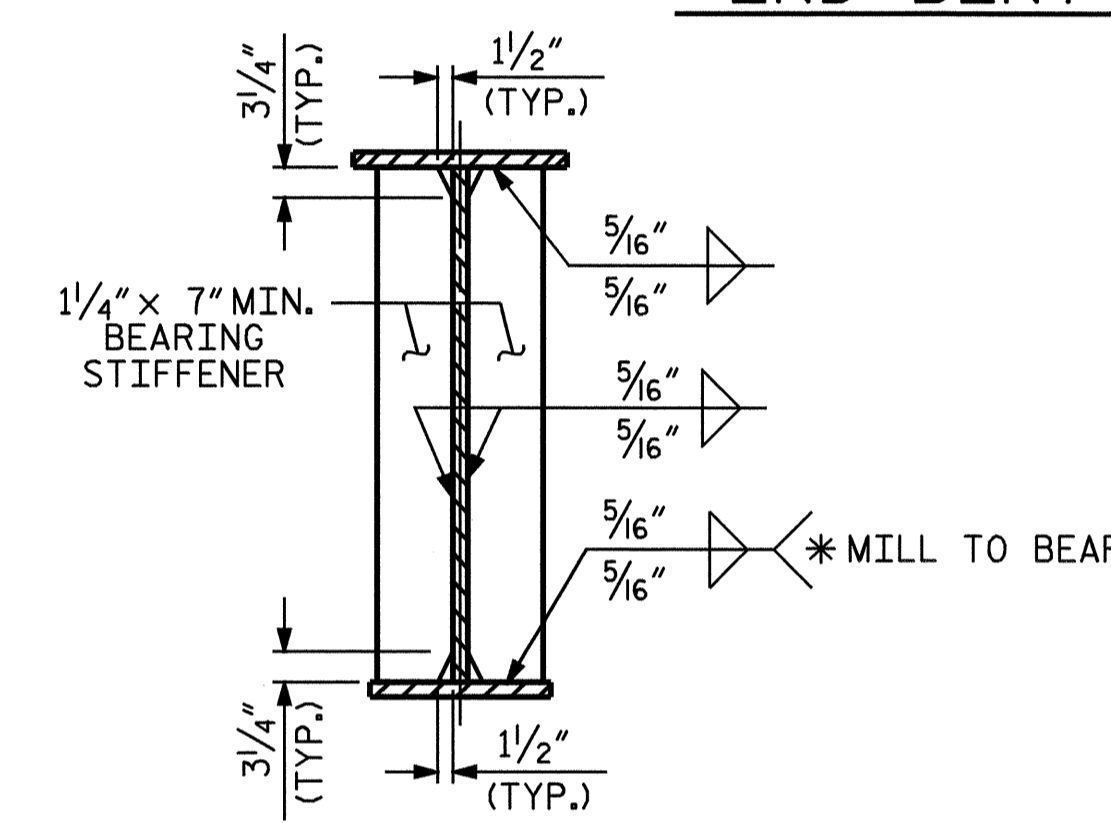
FOR SHIPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL PROVISIONS.



END BENT DIAPHRAGM

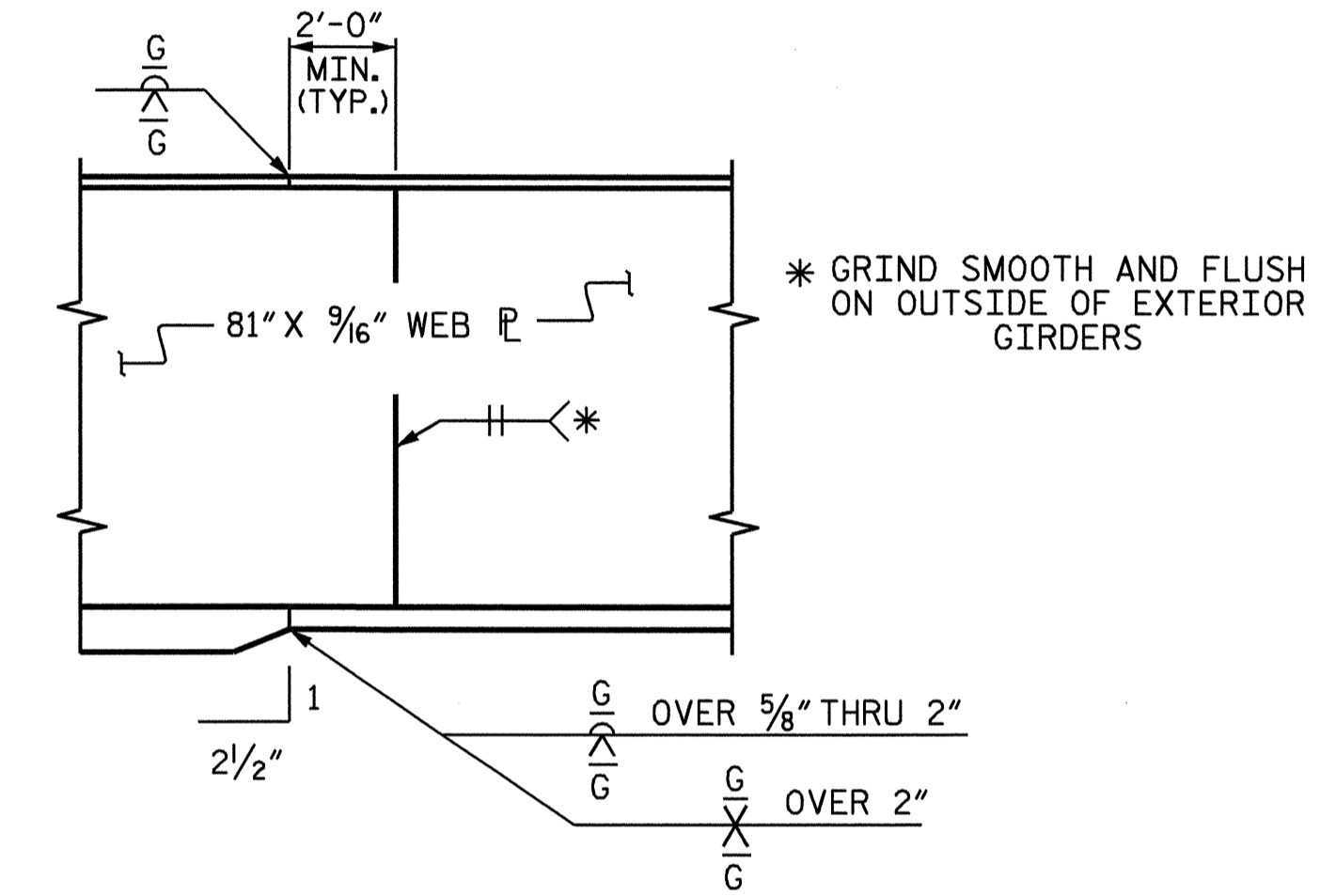


TYPICAL INTERMEDIATE DIAPHRAGM

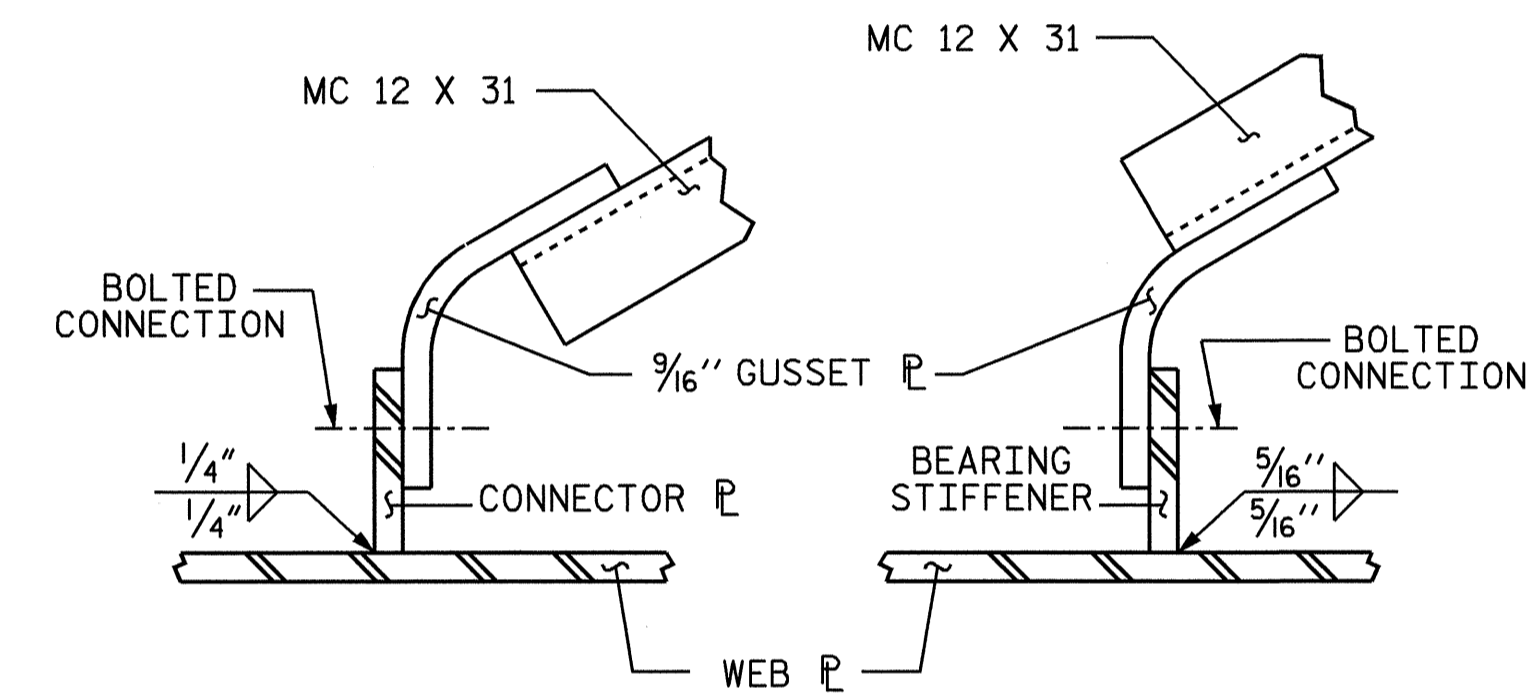


BEARING STIFFENER

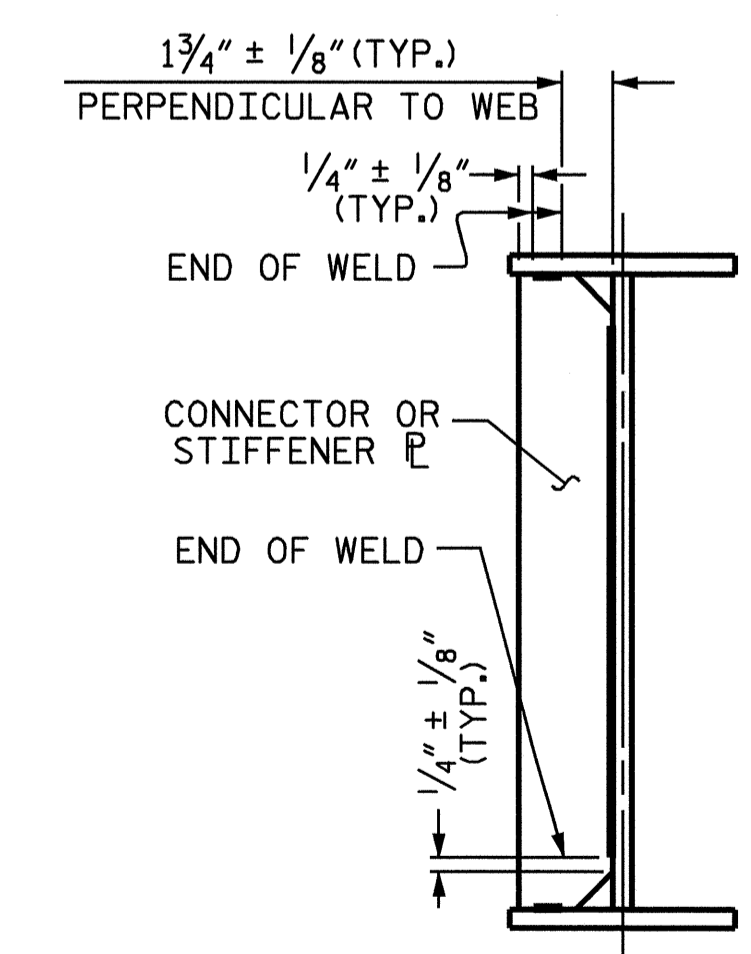
* WELD TO BOTTOM FLANGE IS ONLY REQUIRED WHEN BEARING STIFFENER IS ALSO CONNECTOR PLATE



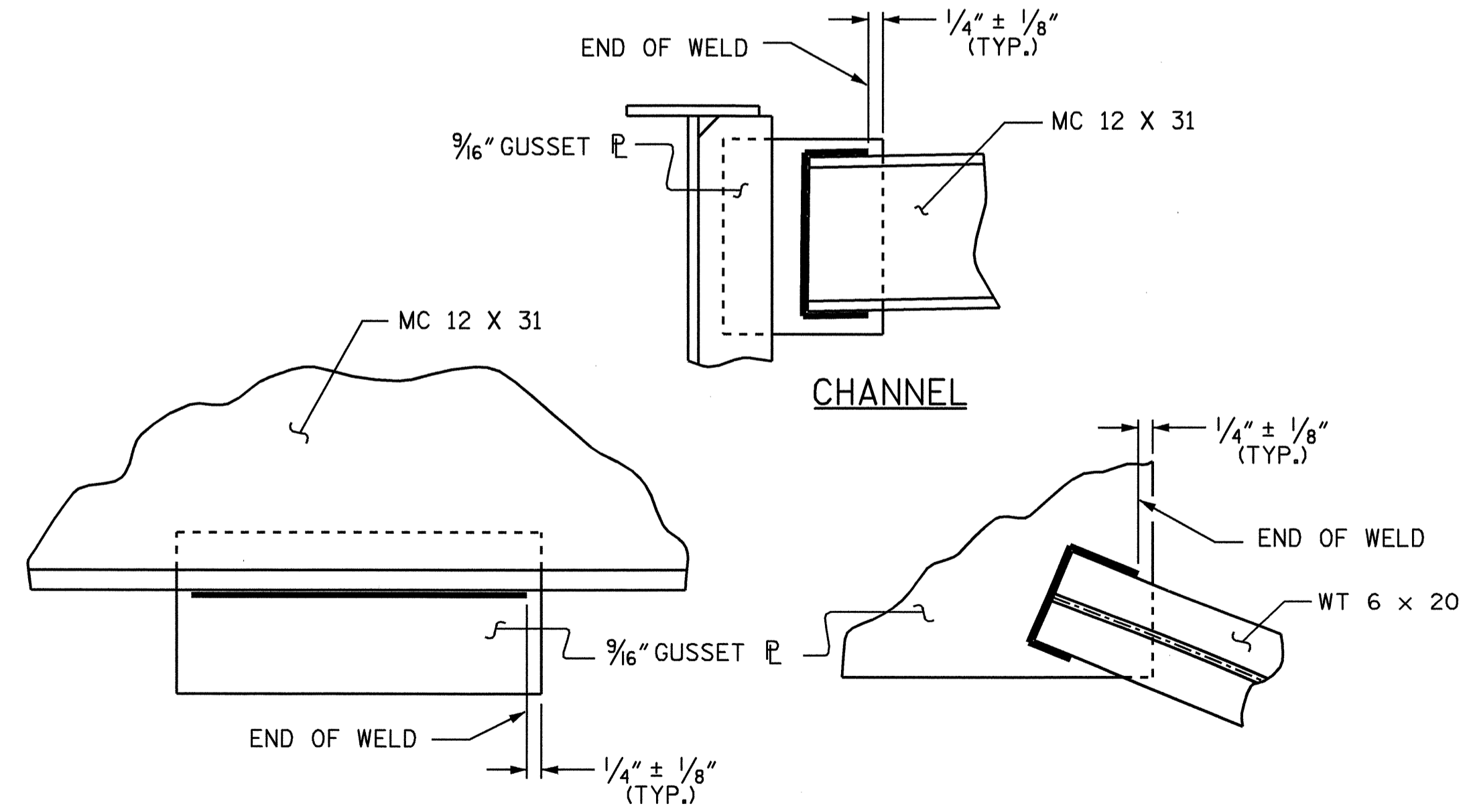
PERMISSIBLE SHOP FLANGE & WEB SPLICE



GUSSET PLATE DETAIL

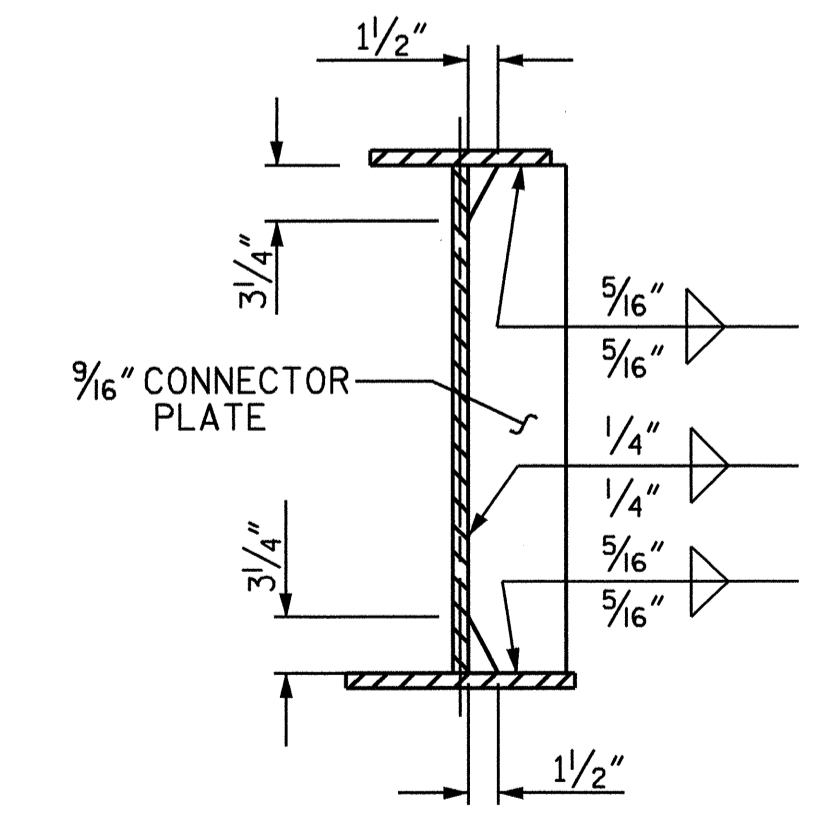


TYPICAL STIFFENER OR CONNECTOR PLATE CONNECTIONS

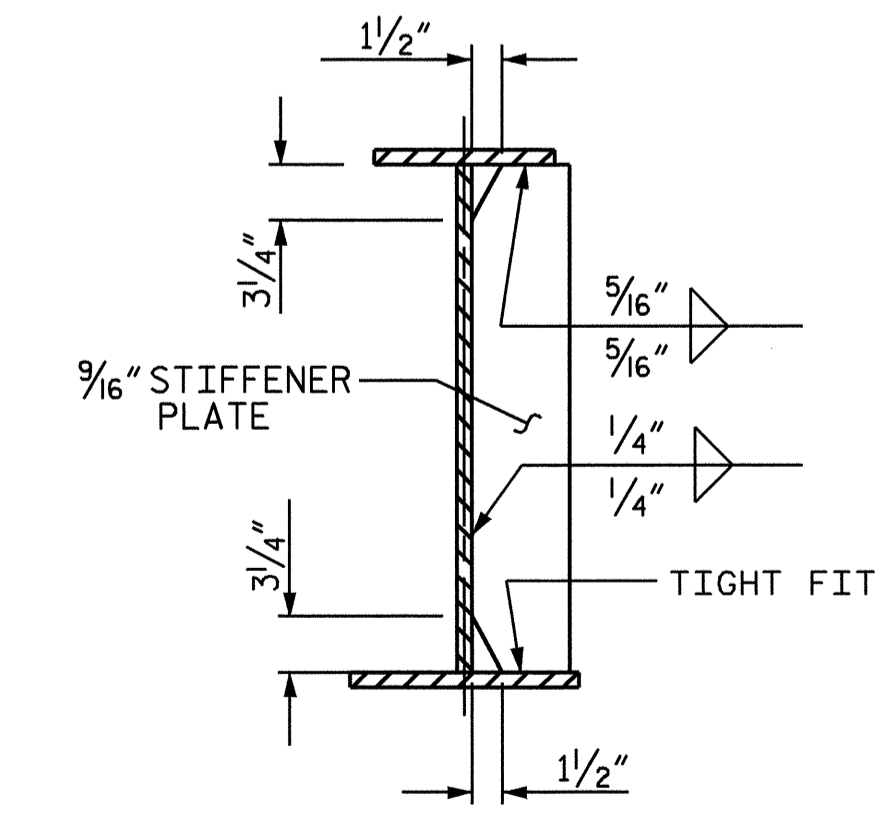


GUSSET PLATE CONNECTIONS

WELD TERMINATION DETAILS



CONNECTOR PLATE DETAILS



TRANSVERSE STIFFENER PLATE DETAILS



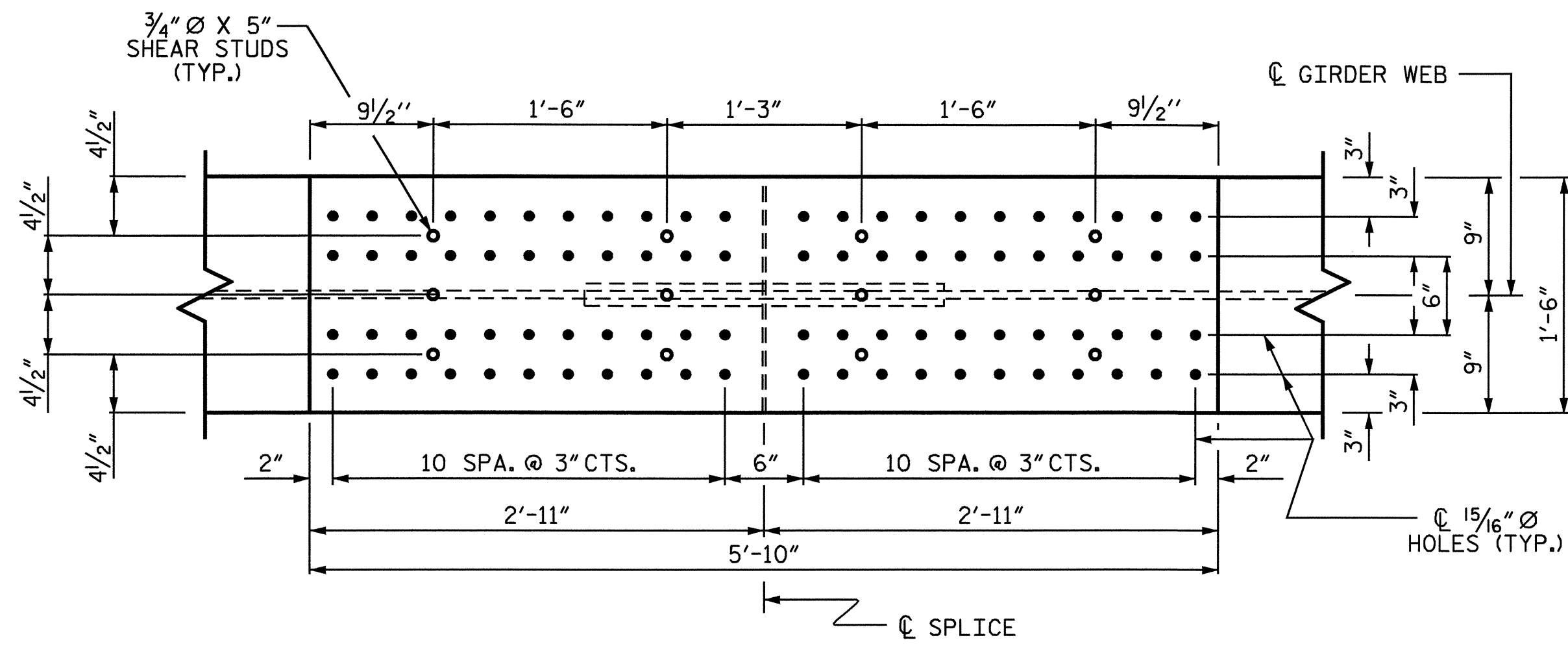
PROJECT NO. B-4038
 COUNTY BURKE
 STATION: 22+62.50 -L-

SHEET 2 OF 3

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

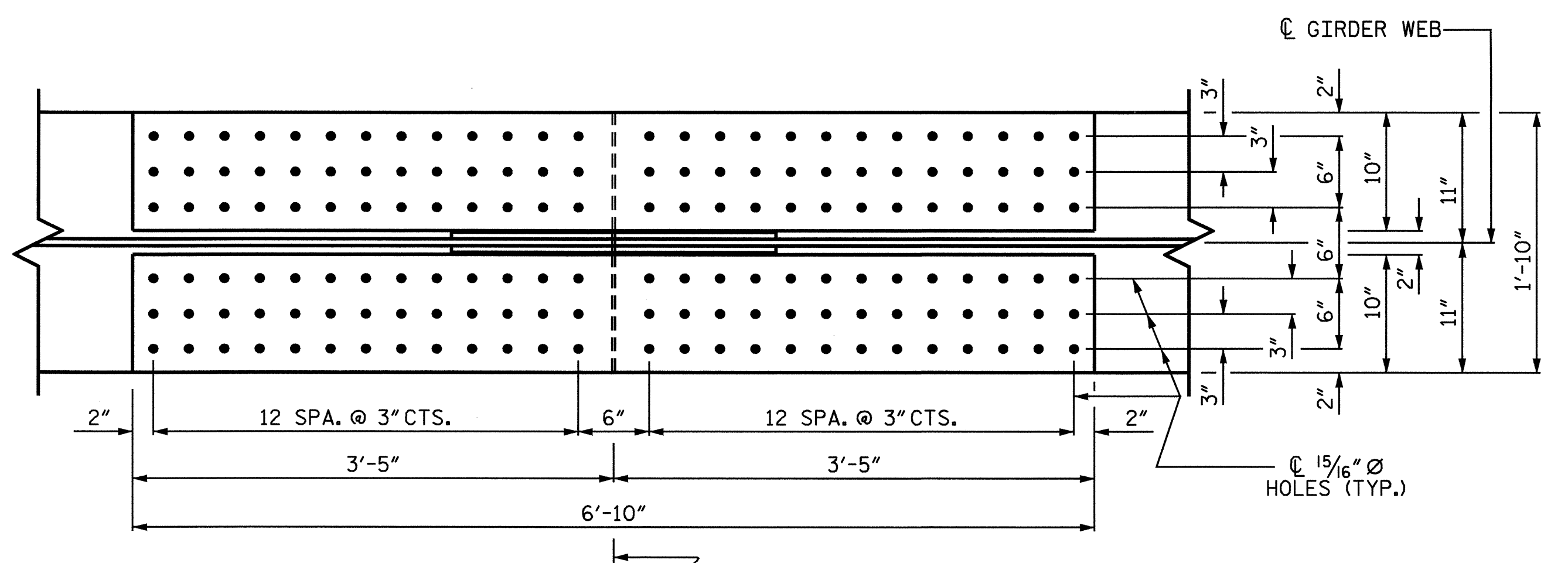
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8	
1			3			TOTAL SHEETS	23
2			4				

DRAWN BY : D. G. ELY DATE : 10/07
 CHECKED BY : T. H. FANG DATE : 1/23/08

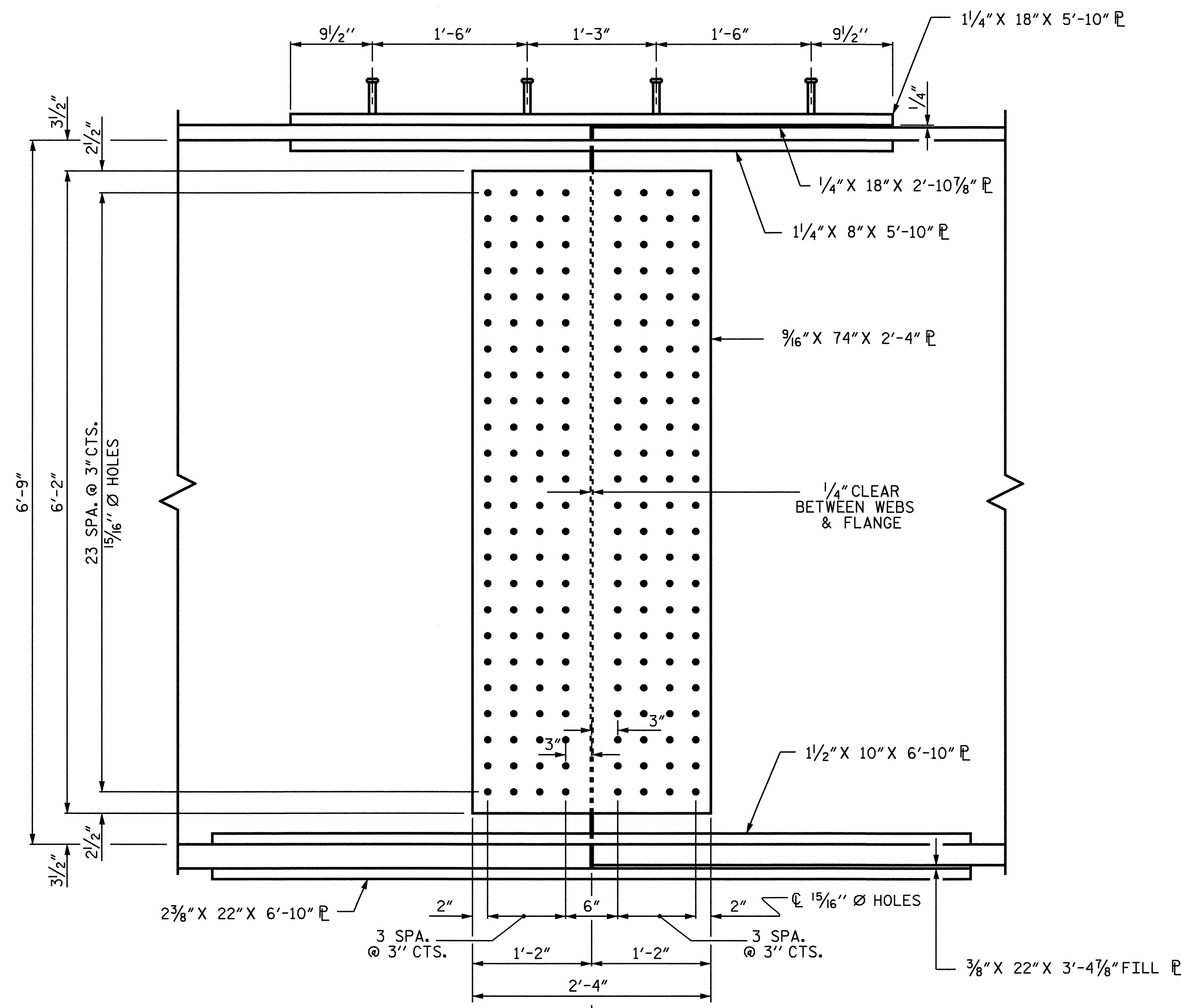


PLAN (TOP OF TOP FLANGE)

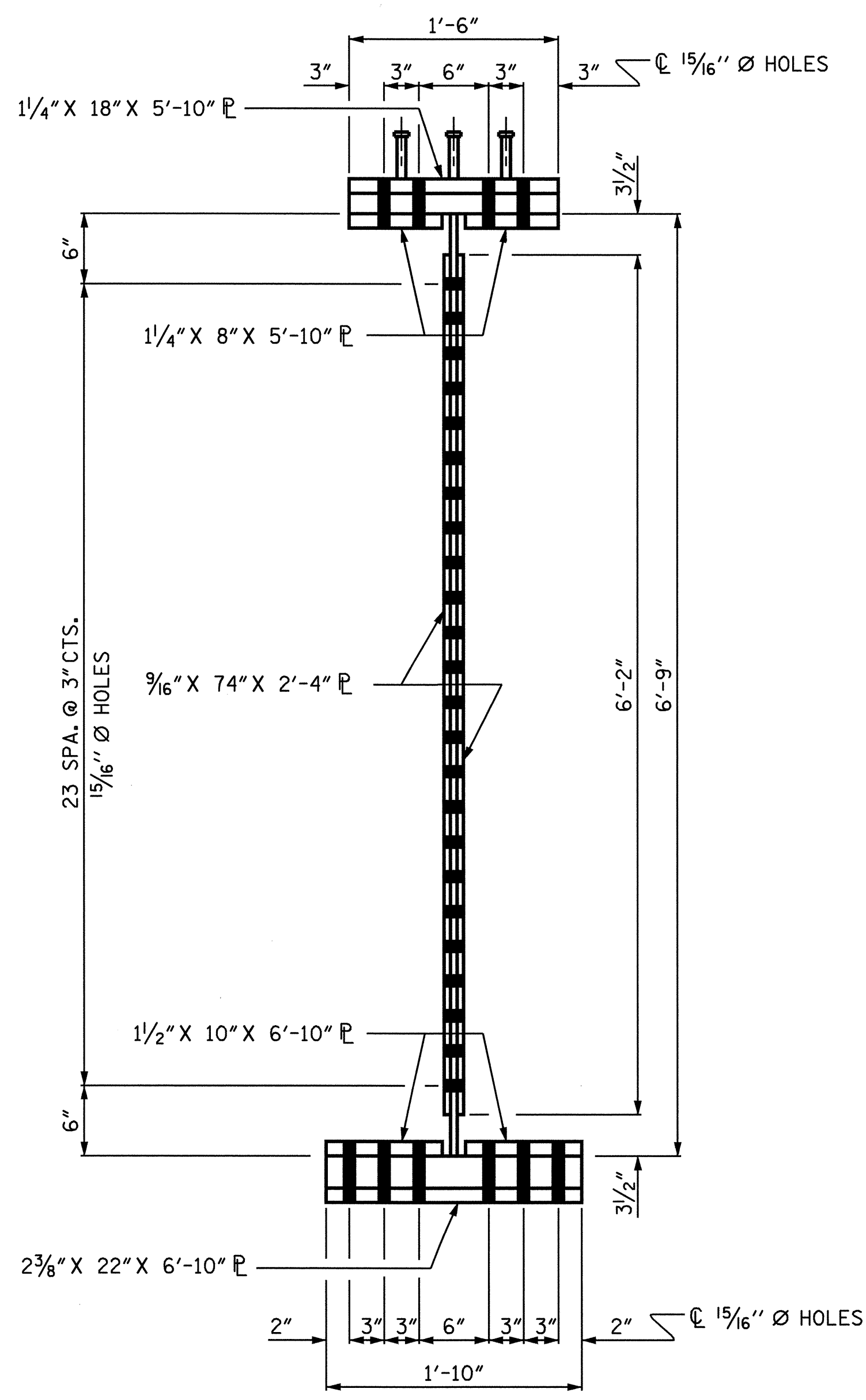
A ←



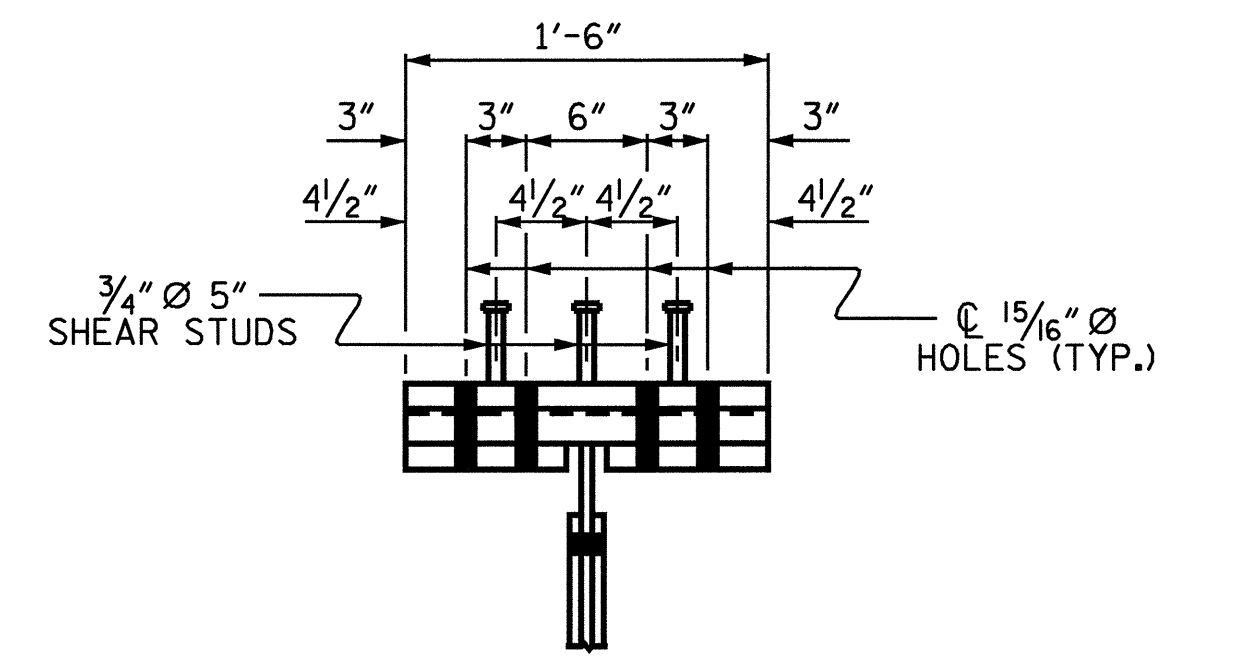
PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

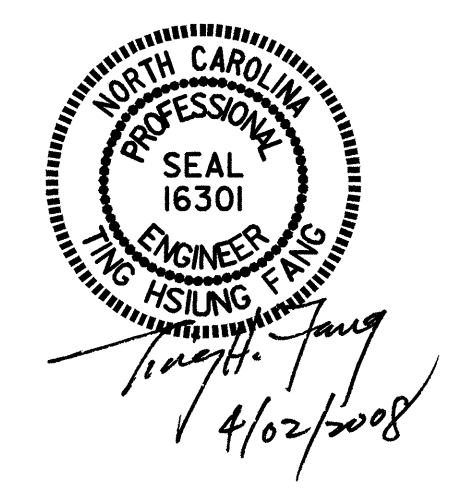
SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY.

BOLTED FIELD SPLICE DETAILS

(TYPICAL EACH FIELD SPLICE)

DRAWN BY : D. G. ELY DATE : 10/07
 CHECKED BY : T. H. FANG DATE : 01/08

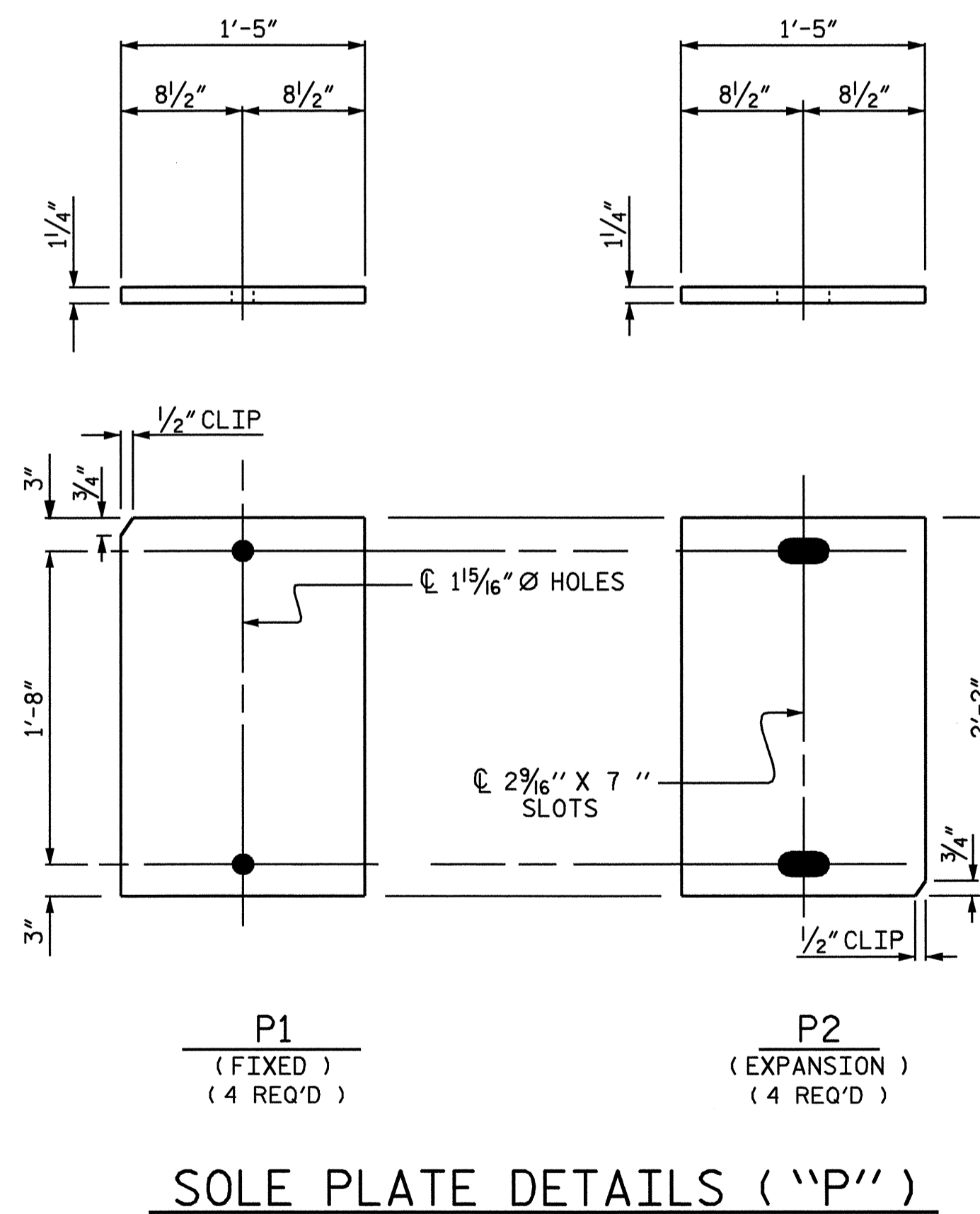
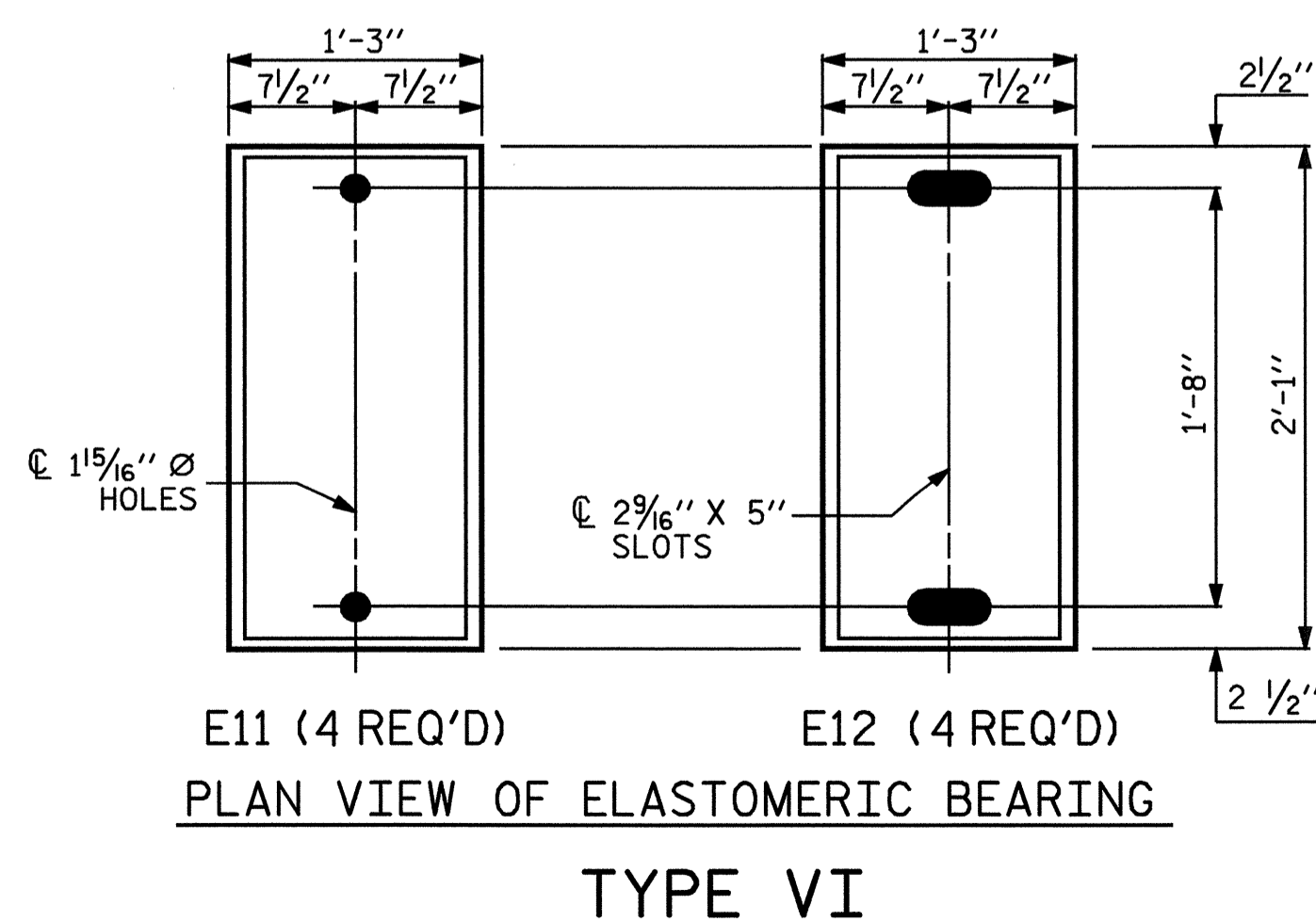
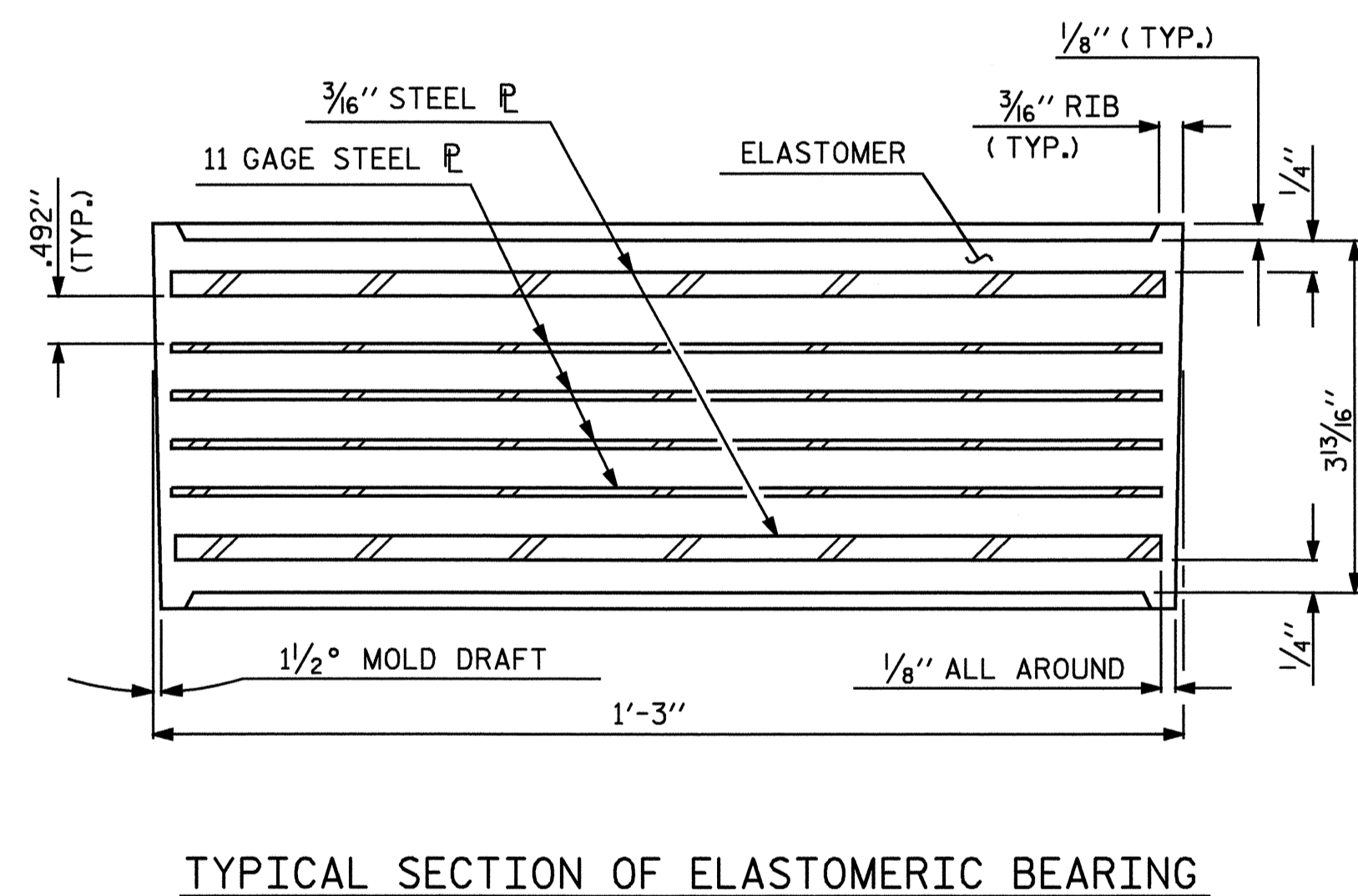
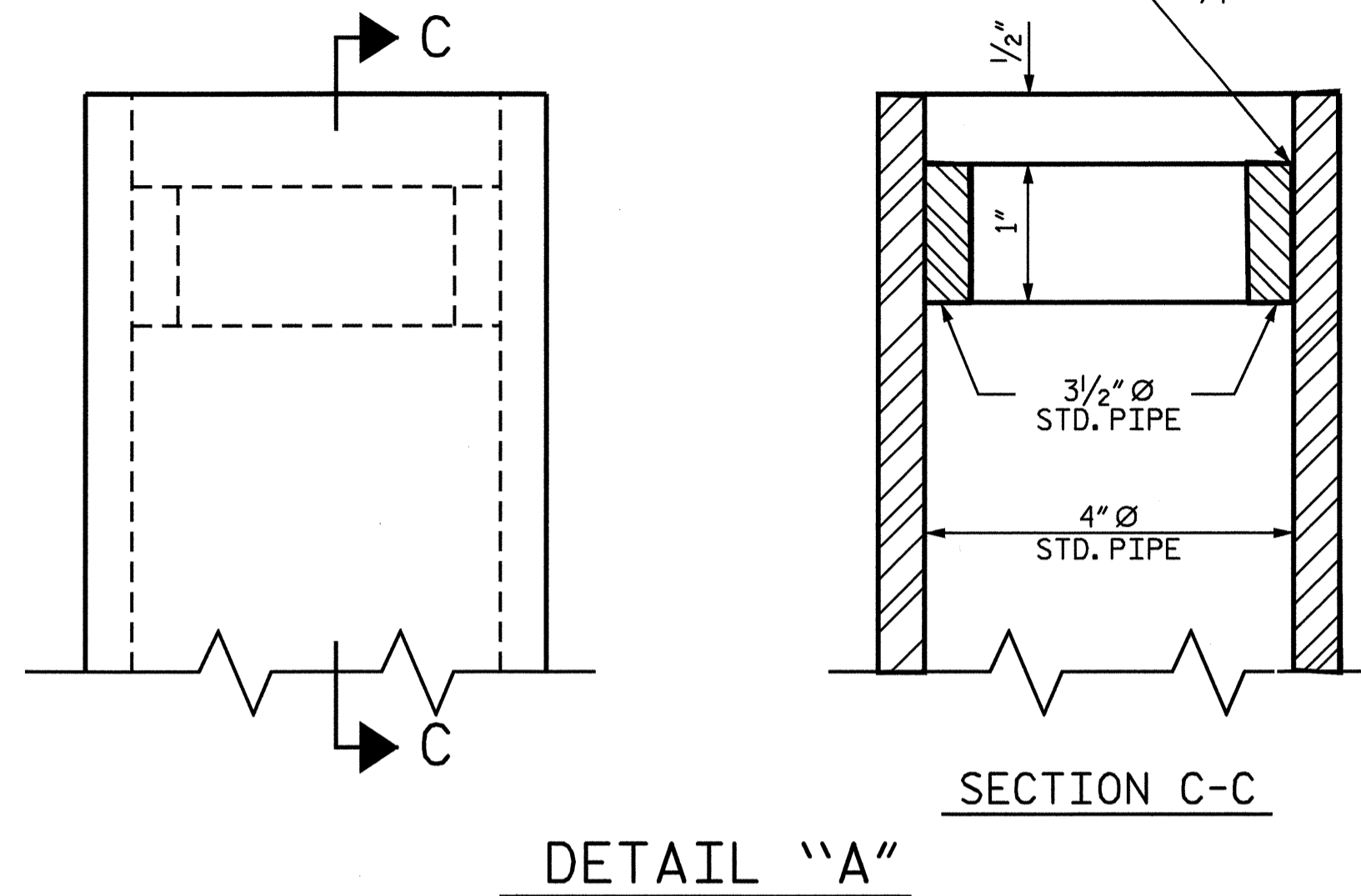
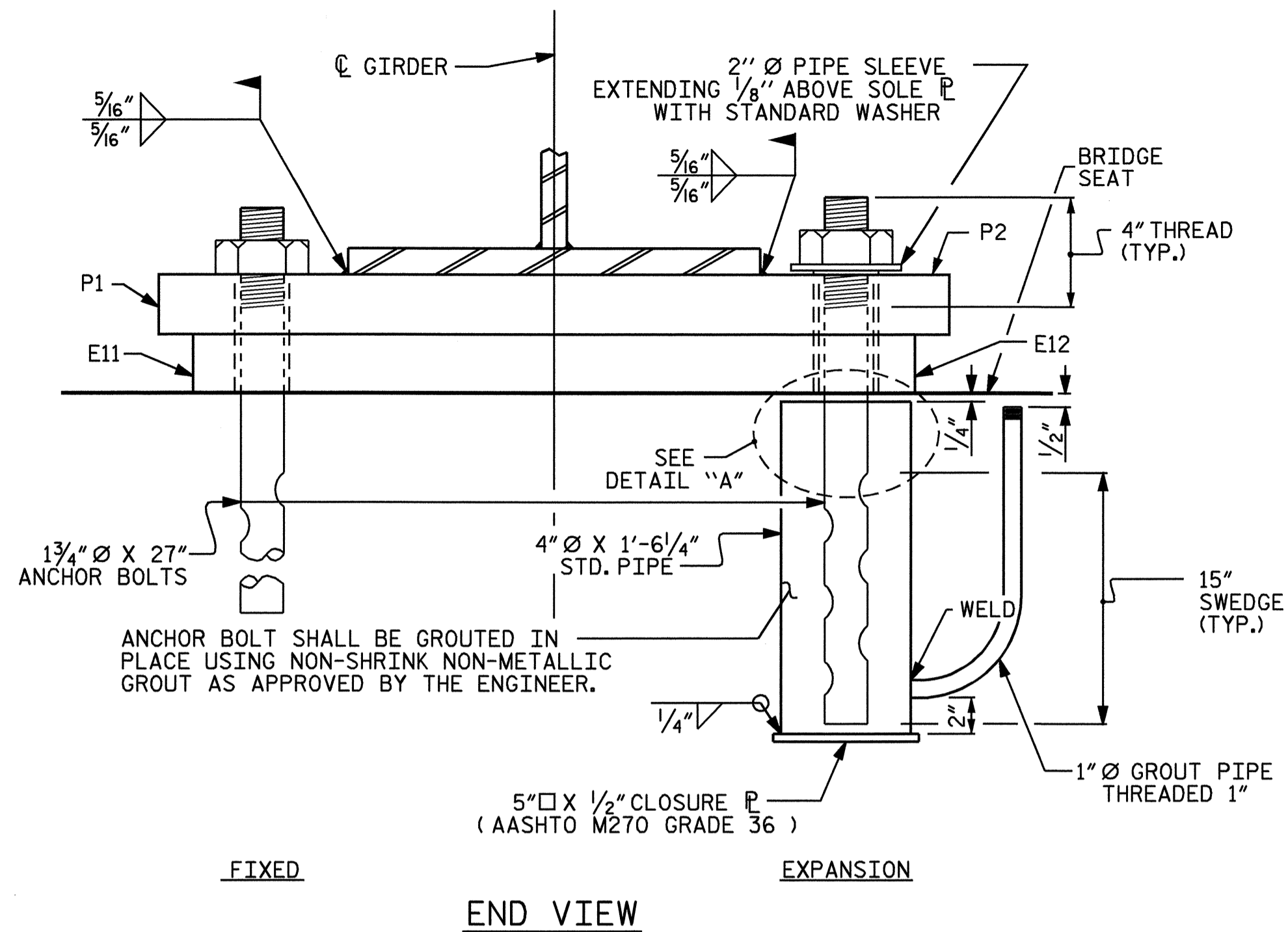
14-MAR-2008 07:51
 z:\structures\b4038\final_plans\b-4038_sd_ss_01.dgn
 RWWRIGHT



PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
SUPERSTRUCTURE						S-9
STRUCTURAL STEEL DETAILS						TOTAL SHEETS
REVISIONS						23
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



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\"/>

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.

THE CLOSURE PLATE, GROUT PIPE AND STANDARD PIPE FOR THE EXPANSION ASSEMBLY NEED NOT BE GALVANIZED.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURES TO ACCOMMODATE GIRDER TRANSLATION AND END ROTATION:

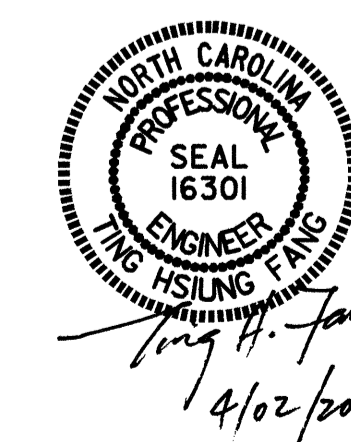
- ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ANCHOR BOLTS, SOLE PLATE, AND ELASTOMERIC BEARING SLOTS SHALL BE CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F.
- AFTER CENTERING THE SLOTS AND ANCHOR BOLTS, THE SOLE PLATES SHALL BE FIELD WELDED TO THE GIRDER FLANGES AND ANCHOR BOLTS GROUTED.

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

NOTE: 60 DUROMETER ELASTOMERIC BEARINGS

-LOAD RATINGS-	
TYPE VI	MAX.D.L.+ L.L.
	262 K

PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

ELASTOMERIC BEARING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS 23
2			4			

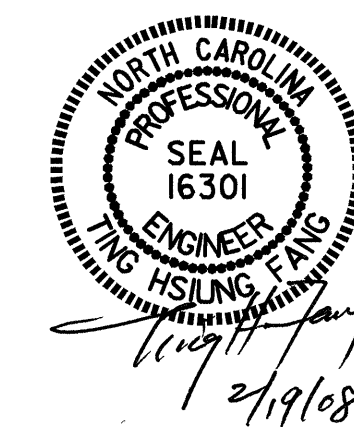
DEAD LOAD DEFLECTION TABLE FOR GIRDERS

GIRDERS 1 & 4																					
TWENTIETH POINTS	BRG.	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.034	0.067	0.097	0.124	0.147	0.167	0.182	0.193	0.200	0.202	0.200	0.193	0.182	0.167	0.147	0.124	0.097	0.067	0.034	0
* DEFLECTION DUE TO WEIGHT OF SLAB	0	0.092	0.180	0.261	0.333	0.397	0.450	0.492	0.521	0.539	0.545	0.539	0.521	0.492	0.450	0.397	0.333	0.261	0.180	0.092	0
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.009	0.018	0.026	0.033	0.039	0.045	0.049	0.052	0.054	0.054	0.054	0.052	0.049	0.045	0.039	0.033	0.026	0.018	0.009	0
TOTAL DEAD LOAD DEFLECTION	0	0.135	0.265	0.384	0.490	0.583	0.662	0.723	0.766	0.793	0.801	0.793	0.766	0.723	0.662	0.583	0.490	0.384	0.265	0.135	0
VERTICAL CURVE ORDINATE	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
REQUIRED CAMBER	0	1 5/8"	3 3/16"	4 5/8"	5 7/8"	7"	7 15/16"	8 11/16"	9 3/16"	9 1/2"	9 5/8"	9 1/2"	9 3/16"	8 11/16"	7 15/16"	7"	5 7/8"	4 5/8"	3 3/16"	1 5/8"	0

GIRDERS 2 & 3																					
TWENTIETH POINTS	BRG.	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.034	0.067	0.097	0.124	0.147	0.167	0.182	0.193	0.200	0.202	0.200	0.193	0.182	0.167	0.147	0.124	0.097	0.067	0.034	0
* DEFLECTION DUE TO WEIGHT OF SLAB	0	0.092	0.180	0.261	0.332	0.396	0.448	0.490	0.520	0.537	0.543	0.537	0.520	0.490	0.448	0.396	0.332	0.261	0.180	0.092	0
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.009	0.018	0.026	0.033	0.039	0.045	0.049	0.052	0.054	0.054	0.054	0.052	0.049	0.045	0.039	0.033	0.026	0.018	0.009	0
TOTAL DEAD LOAD DEFLECTION	0	0.135	0.265	0.384	0.489	0.582	0.660	0.721	0.765	0.791	0.799	0.791	0.765	0.721	0.660	0.582	0.489	0.384	0.265	0.135	0
VERTICAL CURVE ORDINATE	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
REQUIRED CAMBER	0	1 5/8"	3 3/16"	4 5/8"	5 7/8"	7"	7 15/16"	8 5/8"	9 3/16"	9 1/2"	9 9/16"	9 1/2"	9 3/16"	8 5/8"	7 15/16"	7"	5 7/8"	4 5/8"	3 3/16"	1 5/8"	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).

PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

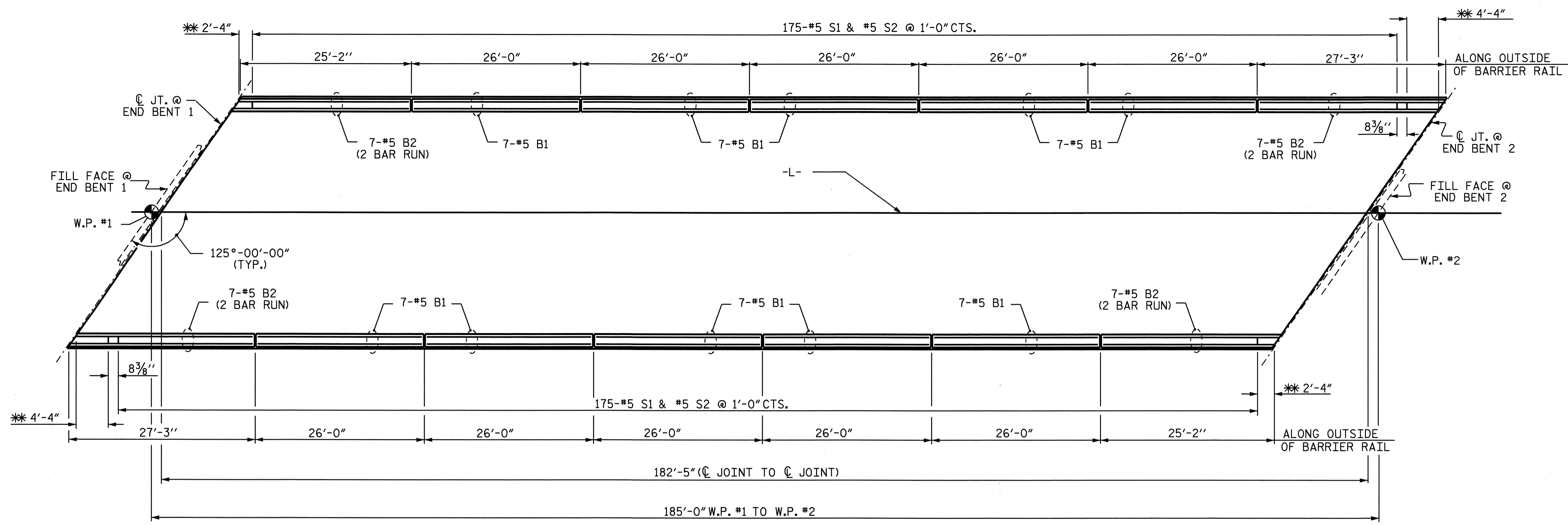


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 DEAD LOAD
 DEFLECTIONS**

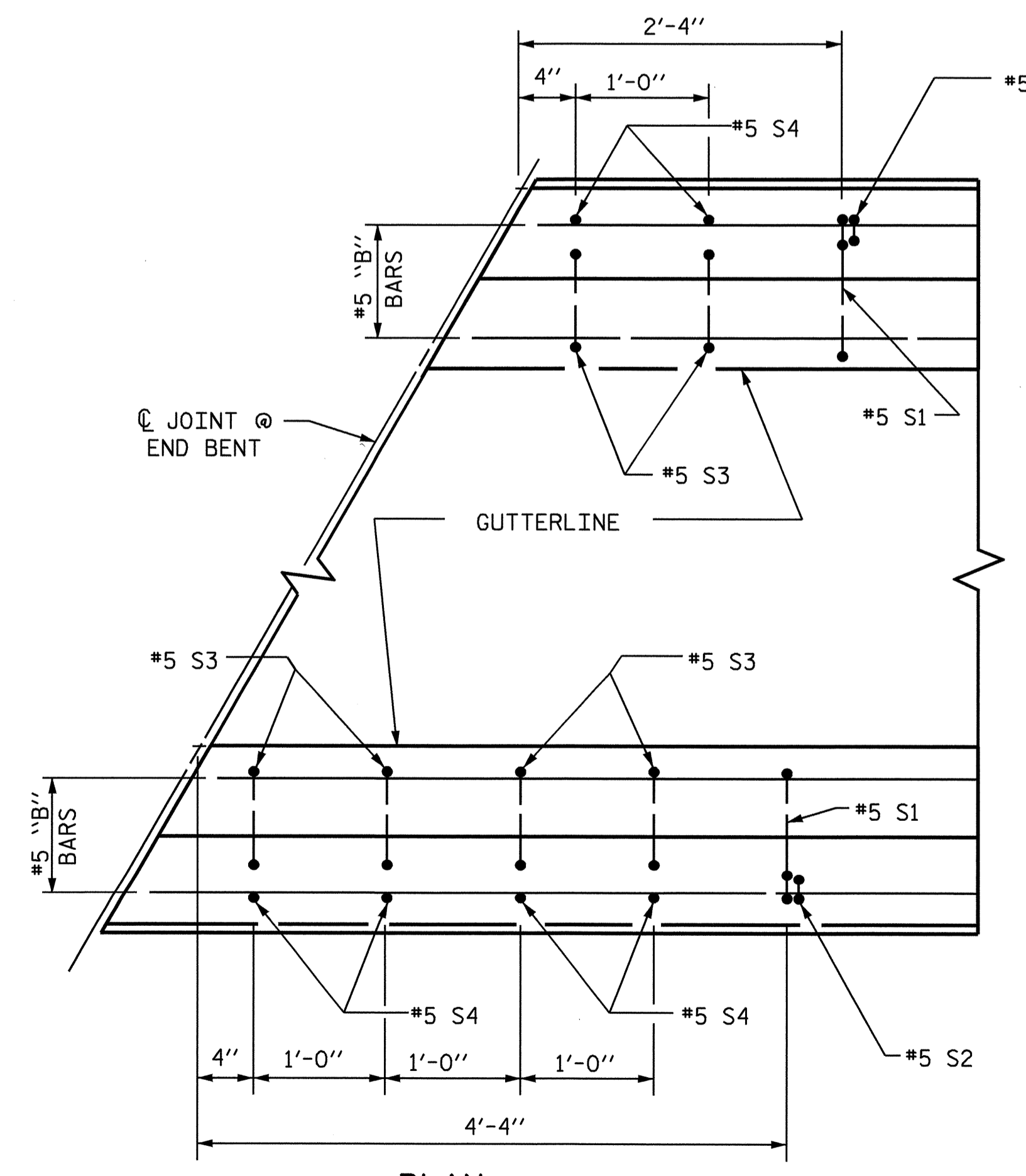
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			23

DRAWN BY : H.B. SHAH DATE : 07/07
 CHECKED BY : D.G. ELY DATE : 10/07

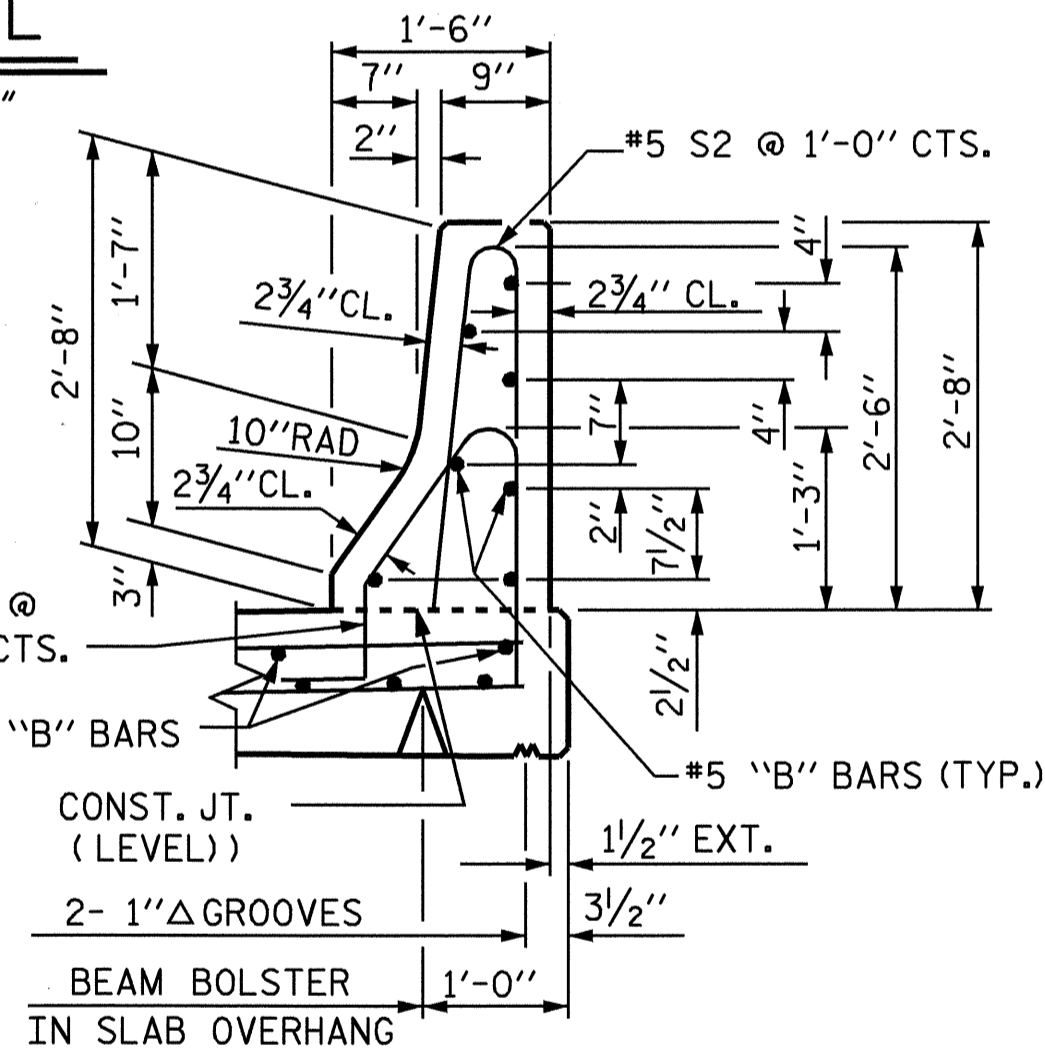


PLAN OF BARRIER RAIL

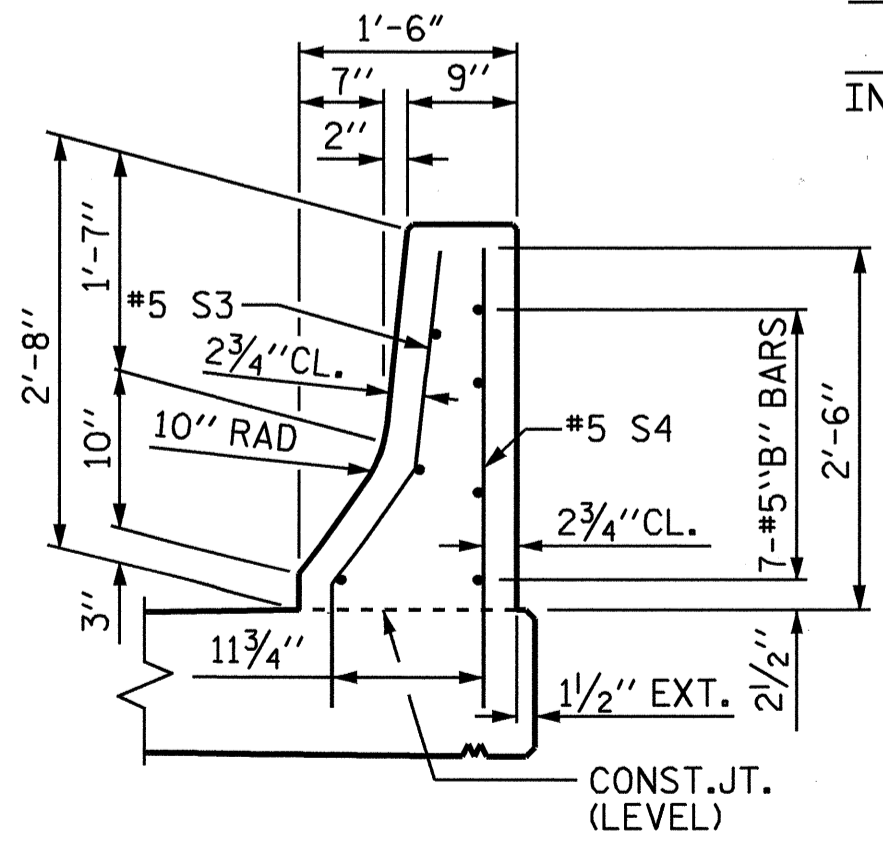
* SEE "END OF RAIL DETAILS - PLAN VIEW" FOR ADDITIONAL REINFORCING STEEL.



END OF RAIL DETAILS
FOR ADHESIVE ANCHORING AT SAWED JOINTS



SECTION THRU RAIL



END VIEW

NOTES

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

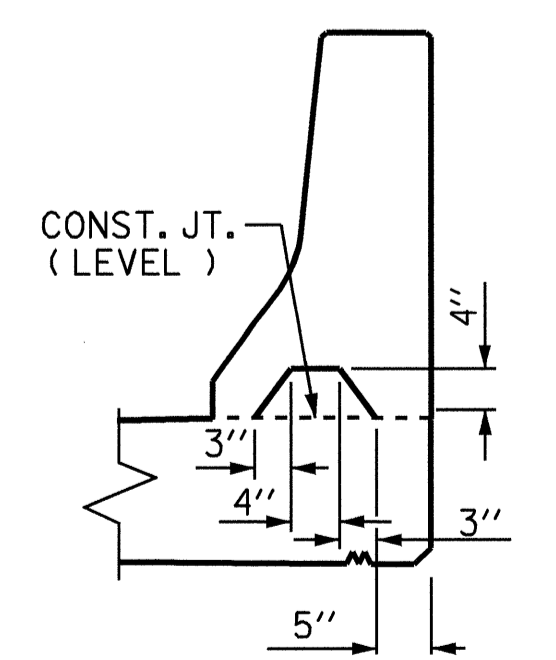
WHEN EVAZOTE JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

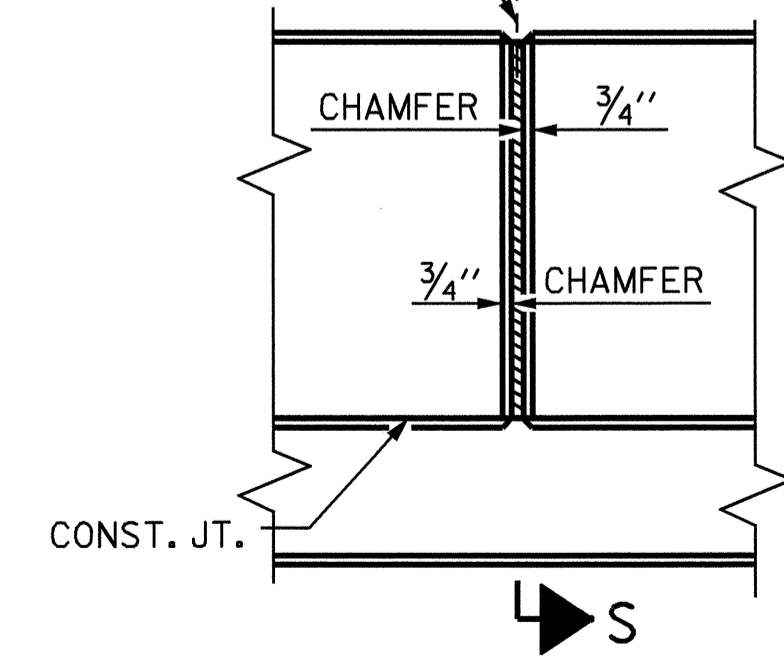
THE #5 S3 AND #5 S4 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3 AND #5 S4 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH THE 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.

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

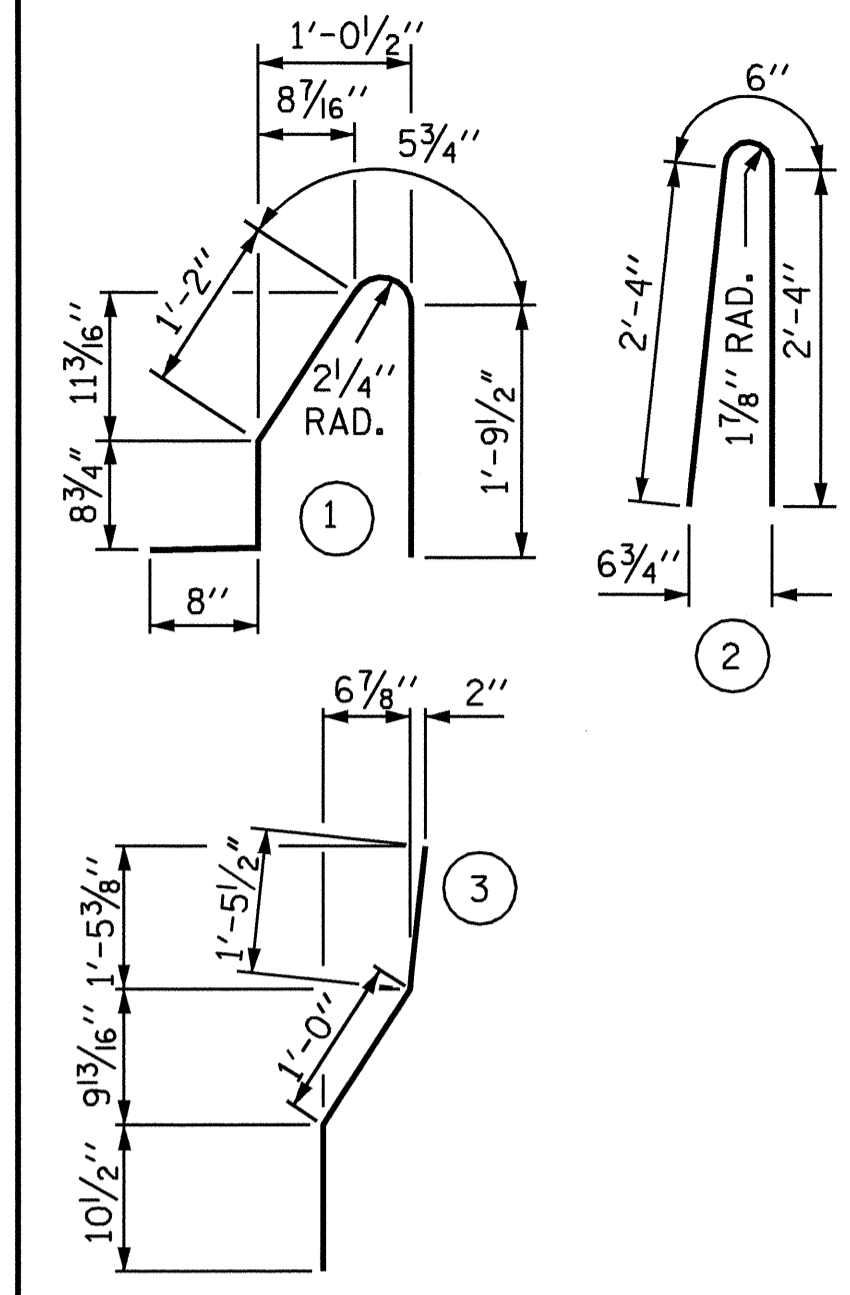


SECTION S-S
AT DAM IN OPEN JOINT (THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	70	#5	STR	25'-7"	1868
* B2	56	#5	STR	15'-2"	886
* S1	354	#5	1	4'-10"	1785
* S2	354	#5	2	5'-2"	1908
* S3	12	#5	3	3'-4"	42
* S4	12	#5	STR	3'-2"	40
* EPOXY COATED REINFORCING STEEL				6529	LBS.
CLASS AA CONCRETE				36.5	CU. YDS.
CONCRETE BARRIER RAIL				364.56	LIN. FT.



PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

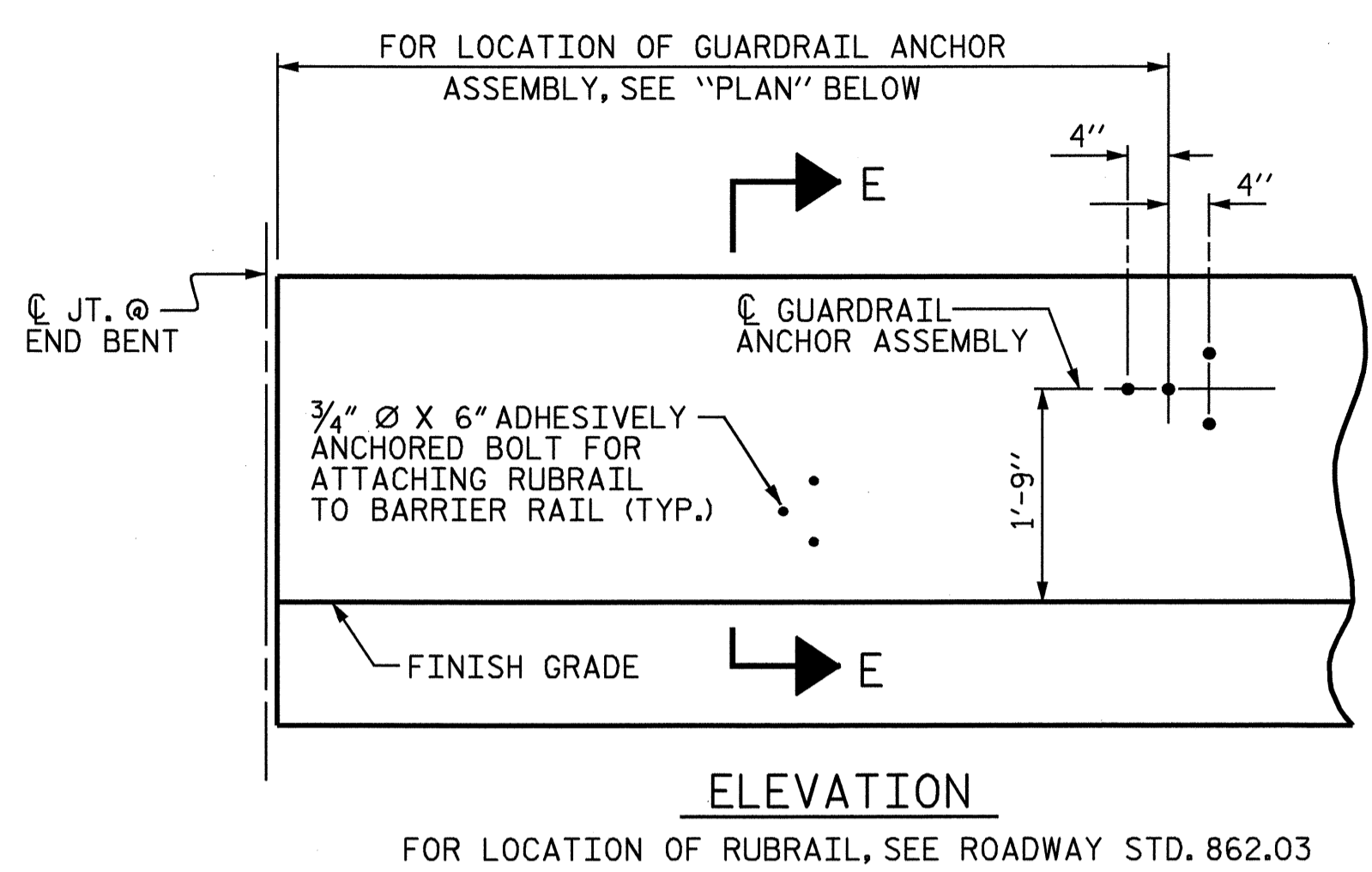
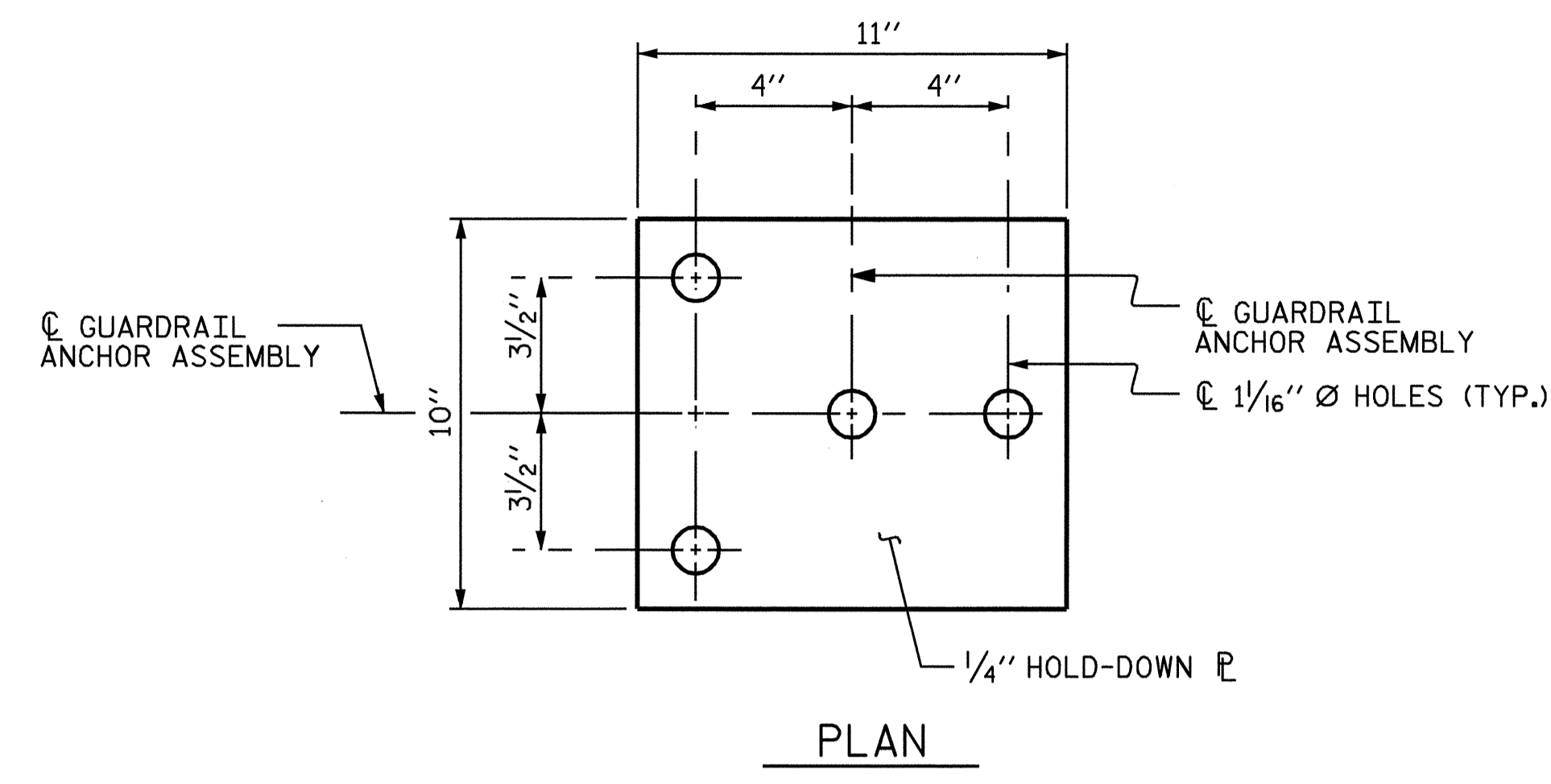
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE BARRIER RAIL

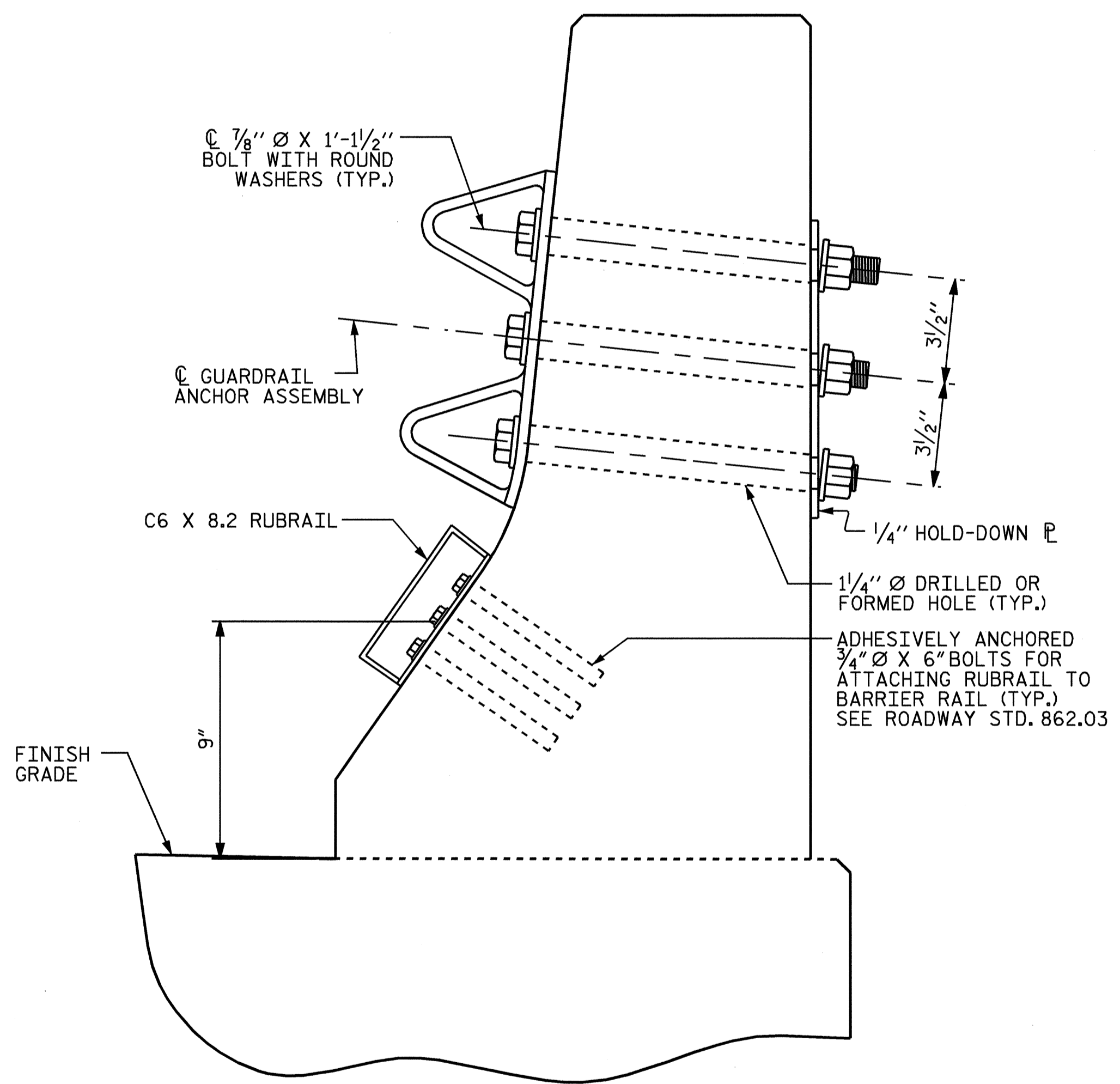
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 23

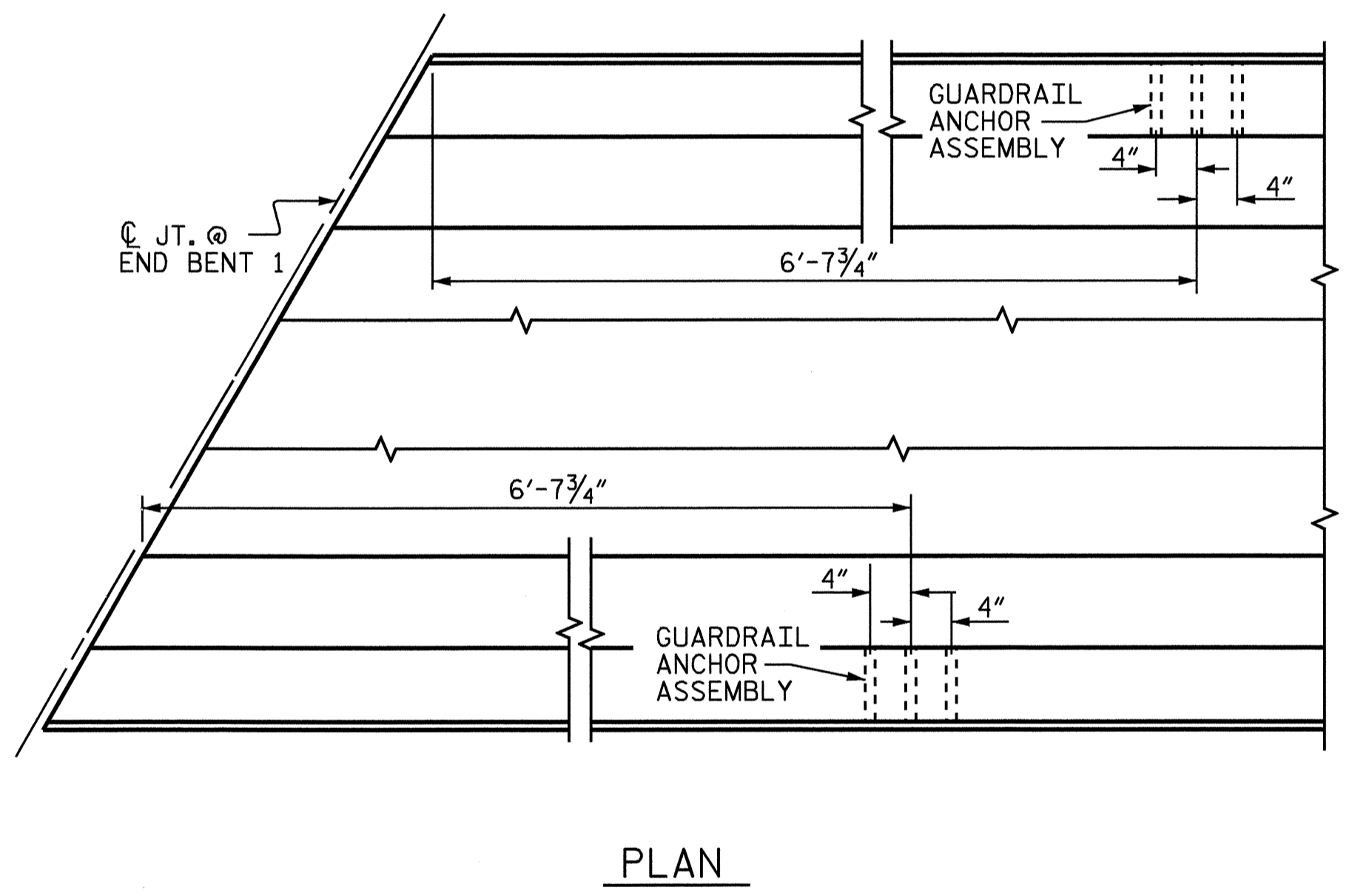
ASSEMBLED BY: H.B. SHAH DATE: 6/06/07
 CHECKED BY: D.G. ELY DATE: 10/07
 DRAWN BY: ARB 5/87 REV. 8/16/99 RWW/LES
 CHECKED BY: SJD 9/87 REV. 10/17/00 RWW/LES
 REV. 5/17/03R RWW/JTE



FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03

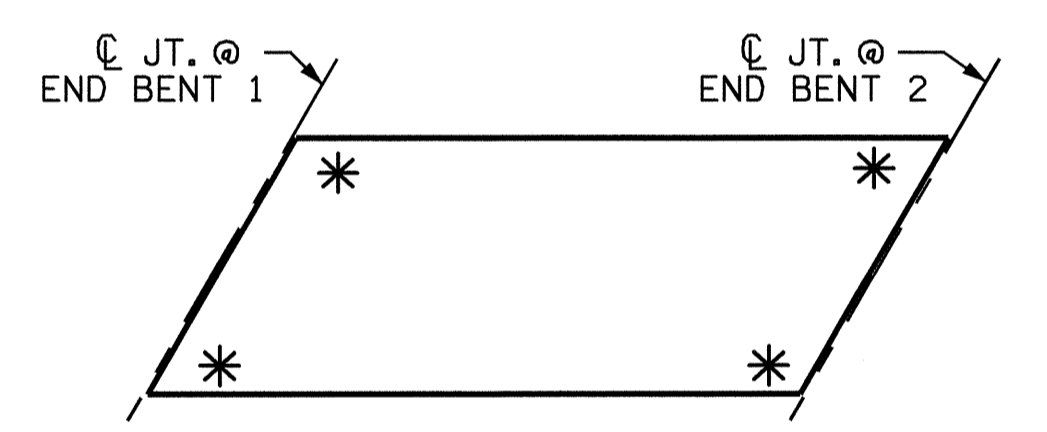


GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

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



* DENOTES GUARDRAIL ANCHOR ASSEMBLY

NOTES

- THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 7/8" 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 7/8" 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 1/4" 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 FIELD TESTING IS REQUIRED, & THE YIELD LOAD OF THE 3/4" Ø 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.

PROJECT NO. B-4038
 BURKE COUNTY
 STATION: 22+62.50 -L-



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

ASSEMBLED BY : H.B.SHAH	DATE : 6/06/07
CHECKED BY : D.G. ELY	DATE : 10/07
DRAWN BY : TLA 5/06	ADDED 5/1/06
CHECKED BY : GM 5/06	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			23

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	846	SQ.FT.
BRIDGE DECK	5614	SQ.FT.
TOTAL	6460	SQ.FT.

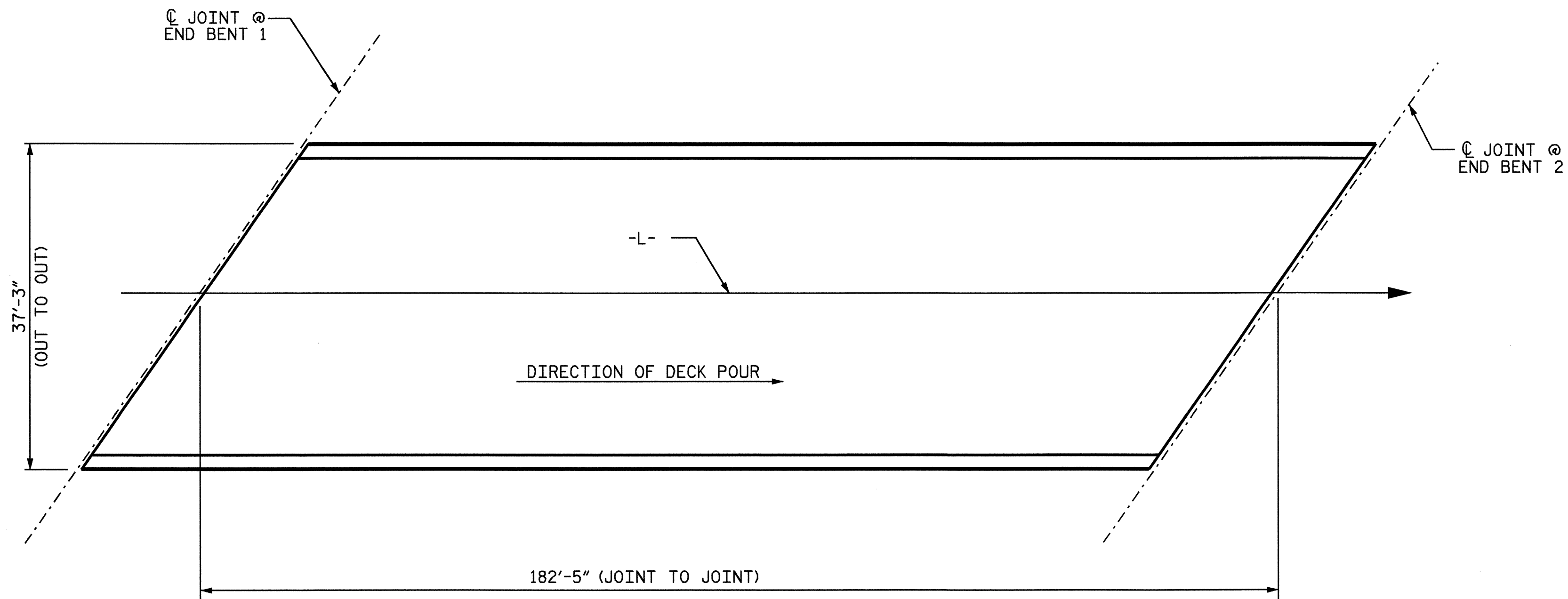
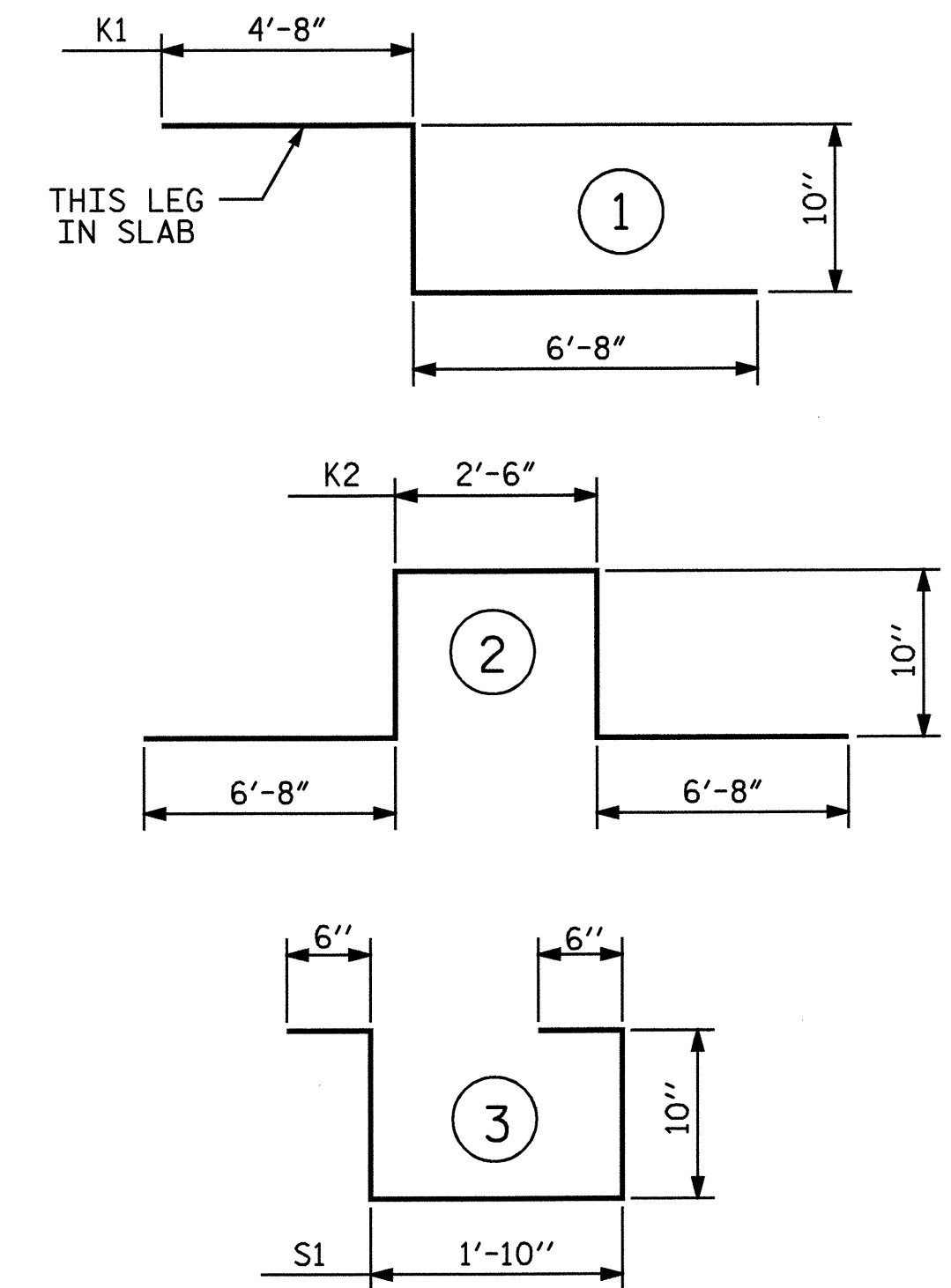
SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU.YDS.)	(LBS.)	(LBS.)
SPAN "A"	203	22,814	17,992
TOTALS**	203	22,814	17,992

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

BILL OF MATERIAL

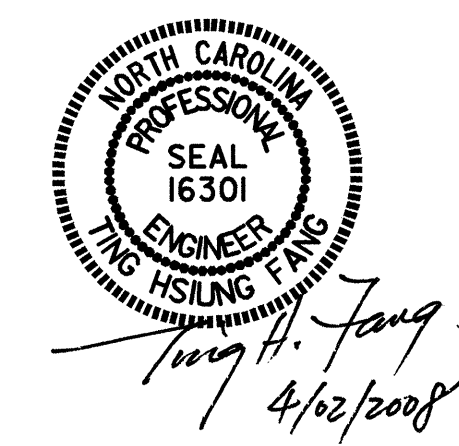
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	313	5	STR	36'-11"	12052
A2	313	5	STR	36'-11"	12052
* A3	6	6	STR	18'-0"	162
* A101	4	5	STR	35'-7"	148
* A102	4	5	STR	34'-2"	143
* A103	4	5	STR	32'-9"	137
* A104	4	5	STR	31'-3"	130
* A105	4	5	STR	29'-10"	124
* A106	4	5	STR	28'-5"	119
* A107	4	5	STR	27'-0"	113
* A108	4	5	STR	25'-7"	107
* A109	4	5	STR	24'-2"	101
* A110	4	5	STR	22'-9"	95
* A111	4	5	STR	21'-4"	89
* A112	4	5	STR	19'-10"	83
* A113	4	5	STR	18'-5"	77
* A114	4	5	STR	17'-0"	71
* A115	4	5	STR	15'-7"	65
* A116	4	5	STR	14'-2"	59
* A117	4	5	STR	12'-9"	53
* A118	4	5	STR	11'-4"	47
* A119	4	5	STR	9'-11"	41
* A120	4	5	STR	8'-6"	35
* A121	4	5	STR	7'-1"	30
* A122	4	5	STR	5'-7"	23
* A123	4	5	STR	4'-2"	17
A201	4	5	STR	35'-7"	148
A202	4	5	STR	34'-2"	143
A203	4	5	STR	32'-9"	137
A204	4	5	STR	31'-3"	130
A205	4	5	STR	29'-10"	124
A206	4	5	STR	28'-5"	119
A207	4	5	STR	27'-0"	113
A208	4	5	STR	25'-7"	107
A209	4	5	STR	24'-2"	101
A210	4	5	STR	22'-9"	95
A211	4	5	STR	21'-4"	89
A212	4	5	STR	19'-10"	83
A213	4	5	STR	18'-5"	77
A214	4	5	STR	17'-0"	71
A215	4	5	STR	15'-7"	65
A216	4	5	STR	14'-2"	59
A217	4	5	STR	12'-9"	53
A218	4	5	STR	11'-4"	47
A219	4	5	STR	9'-11"	41
A220	4	5	STR	8'-6"	35
A221	4	5	STR	7'-1"	30
A222	4	5	STR	5'-7"	23
A223	4	5	STR	4'-2"	17
* B1	175	4	STR	27'-9"	3244
B2	180	5	STR	47'-2"	8855
* G1	2	5	STR	45'-0"	94
* K1	12	5	1	12'-2"	152
* K2	12	5	2	17'-6"	219
* S1	54	4	3	4'-6"	162
REINFORCING STEEL				LBS.	22,814
* EPOXY COATED REINFORCING STEEL				LBS.	17,992

BAR TYPES



————— OF LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB (SQ. FT. = 6,795.0) —————

PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BILL OF MATERIAL

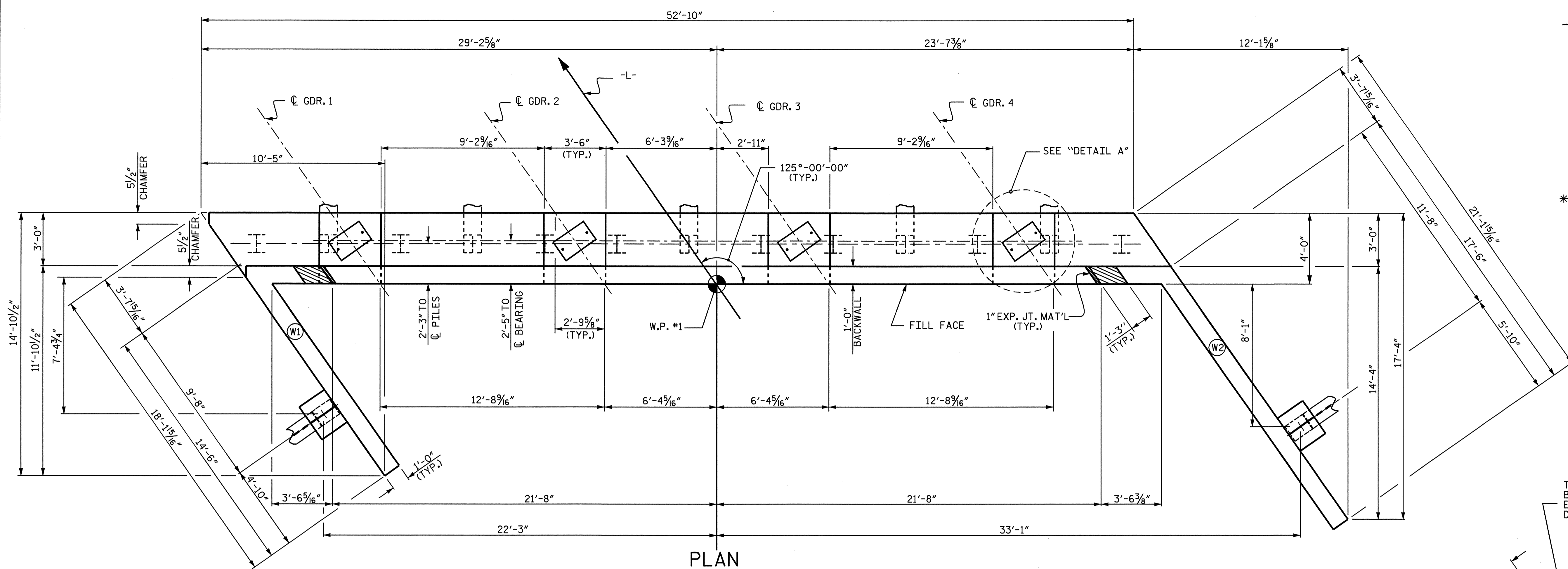
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 23

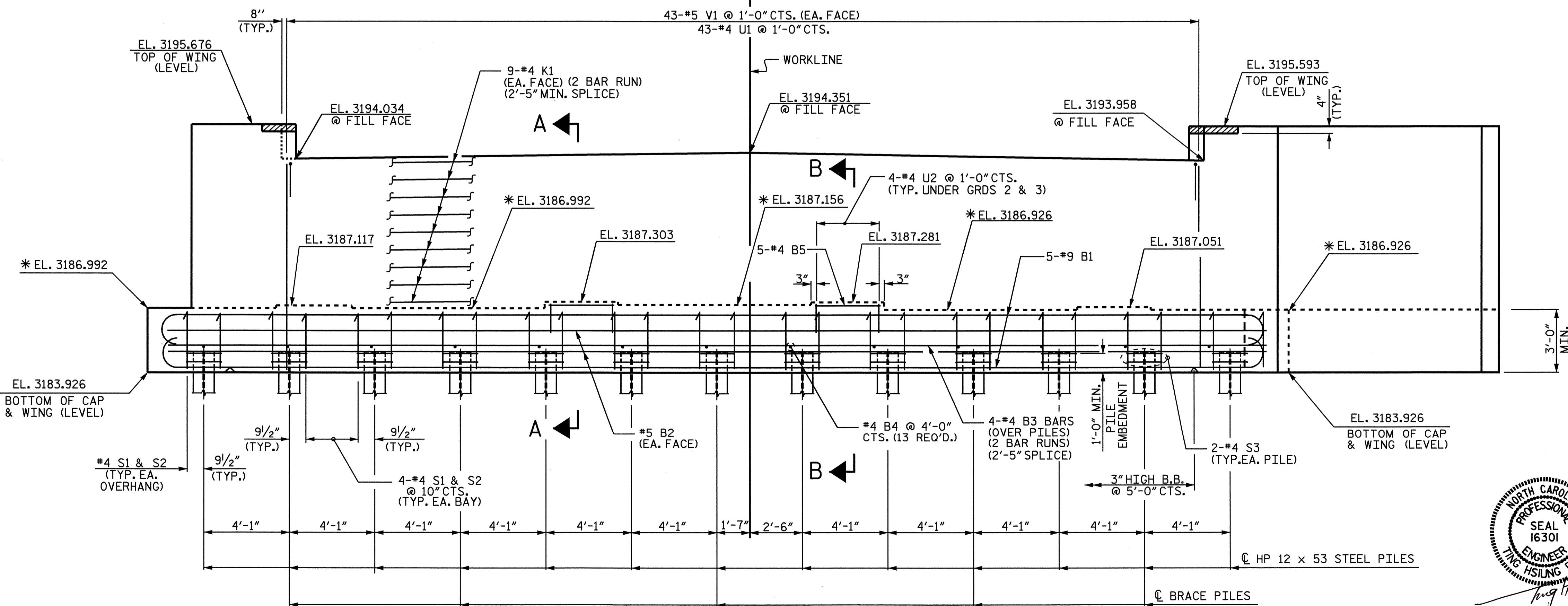
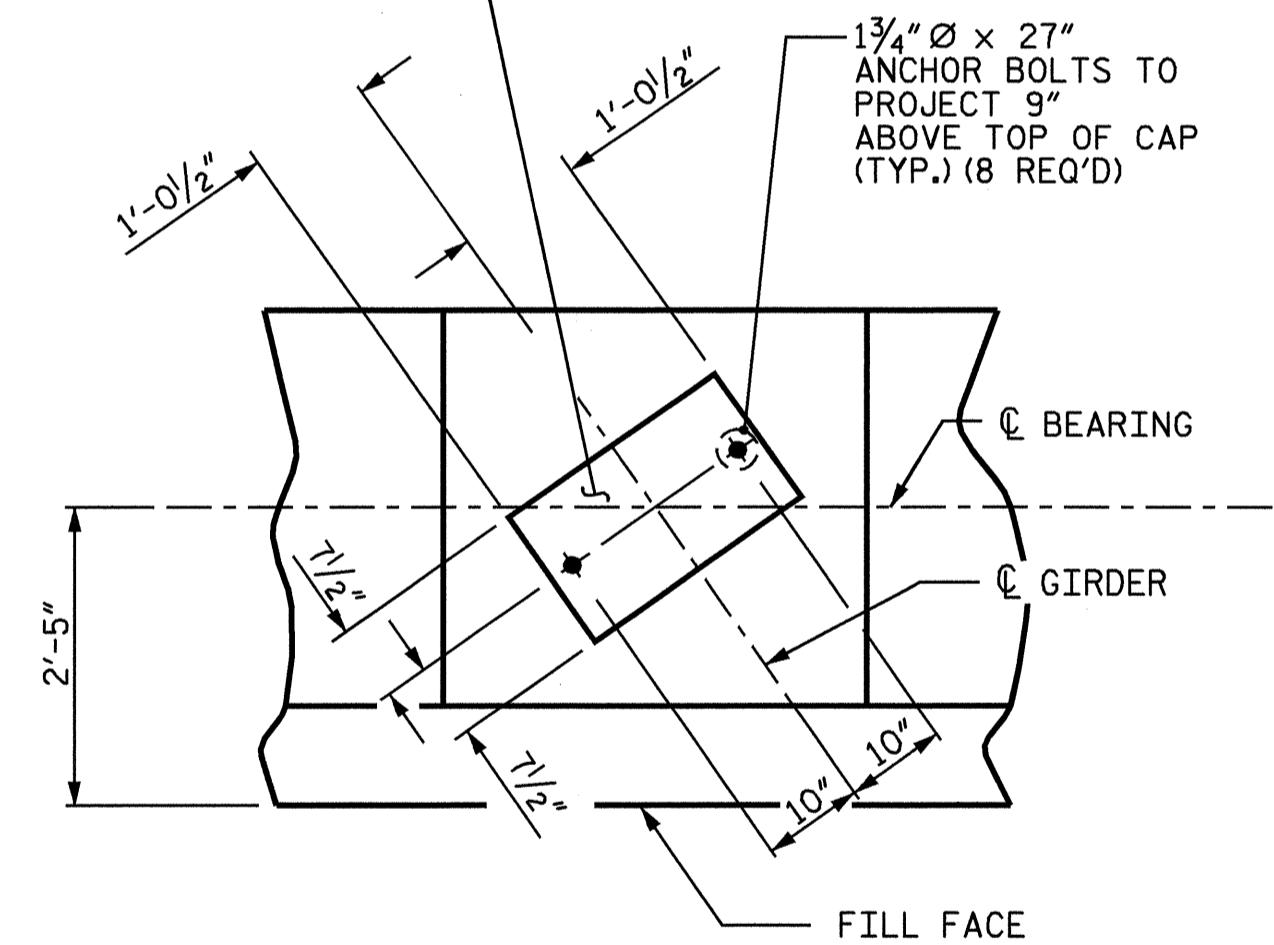
ASSEMBLED BY : H.B.SHAH DATE :06/06/07
 CHECKED BY : D.G. ELY DATE : 10/07

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- FOR PILE SPlice DETAILS, SEE SHEET 3 OF 3.
- BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
- THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- *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 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.

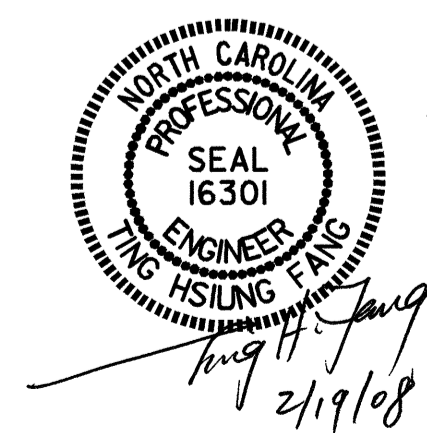


TYPE VI ELASTOMERIC BEARING PAD (TYP.) SEE ELASTOMERIC BEARING DETAIL SHEET. (4 REQ'D.)



DRAWN BY: HARISH SHAH DATE: 10/07
 CHECKED BY: D.G. ELY DATE: 10/07

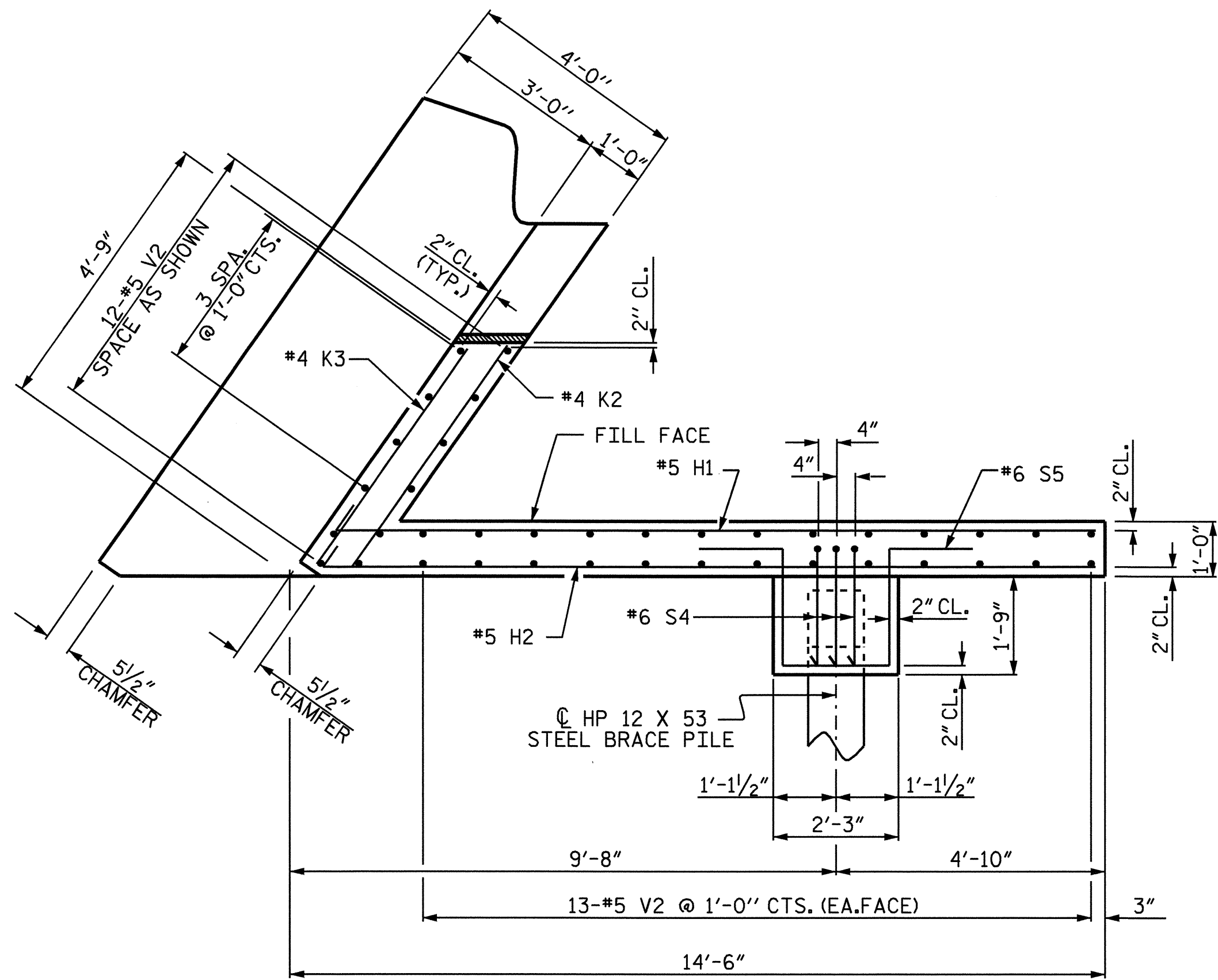
BRACE PILE IN WING WALLS AND DETAILS OF LEFT WING NOT SHOWN FOR CLARITY



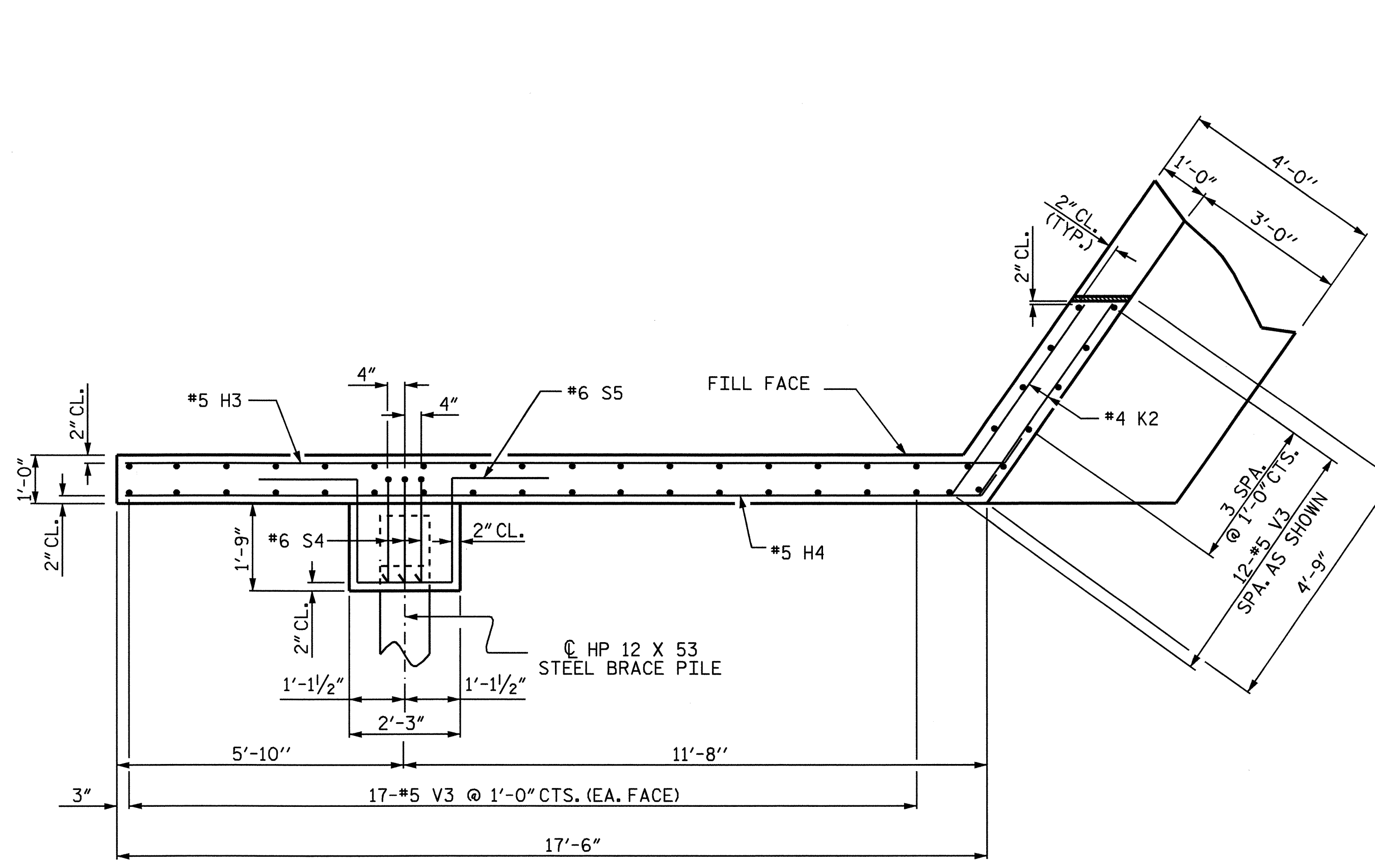
PROJECT NO. B-4038
 BURKE COUNTY
 STATION: 22+62.50 -L-

SHEET 1 OF 3

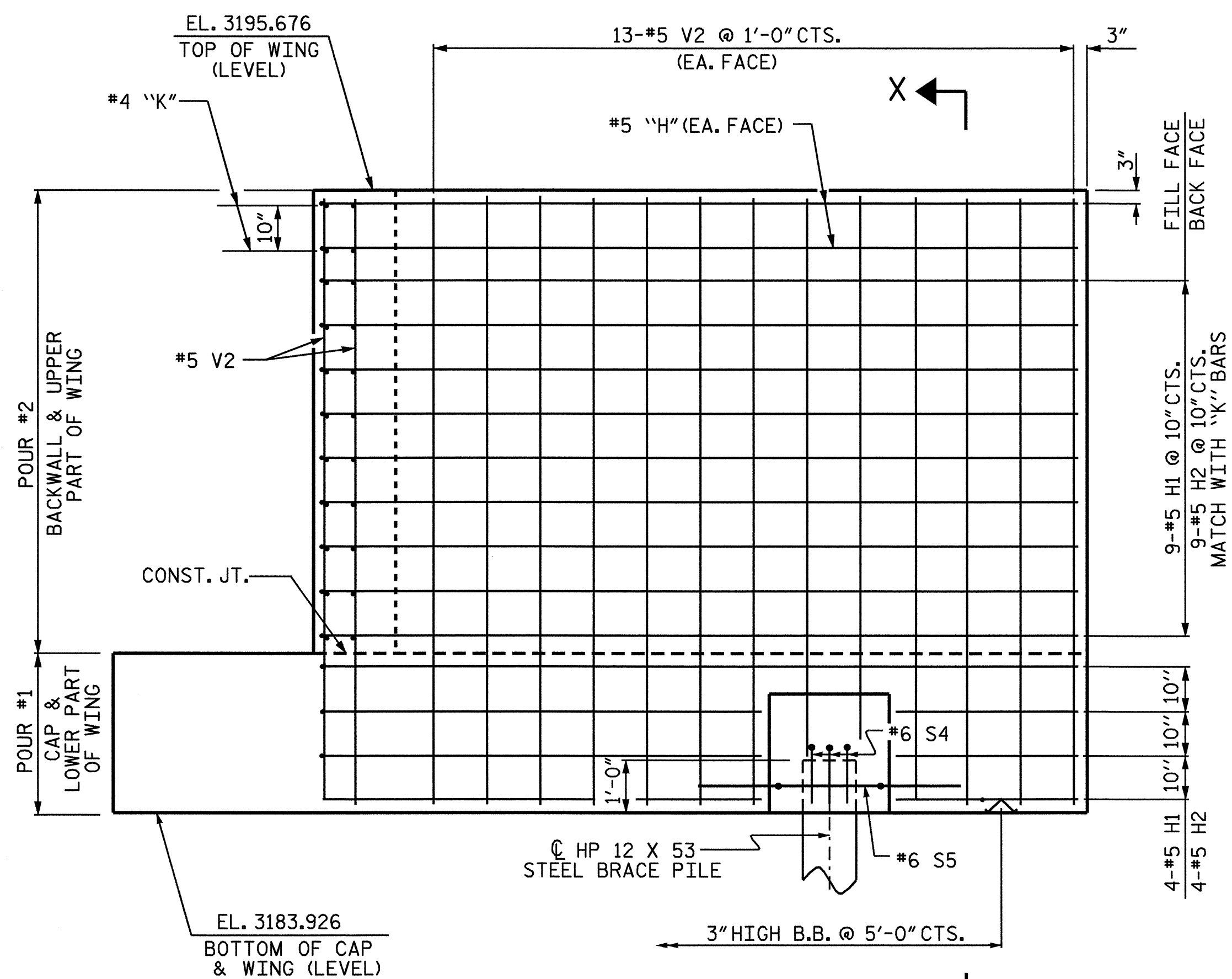
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-15					TOTAL SHEETS 23



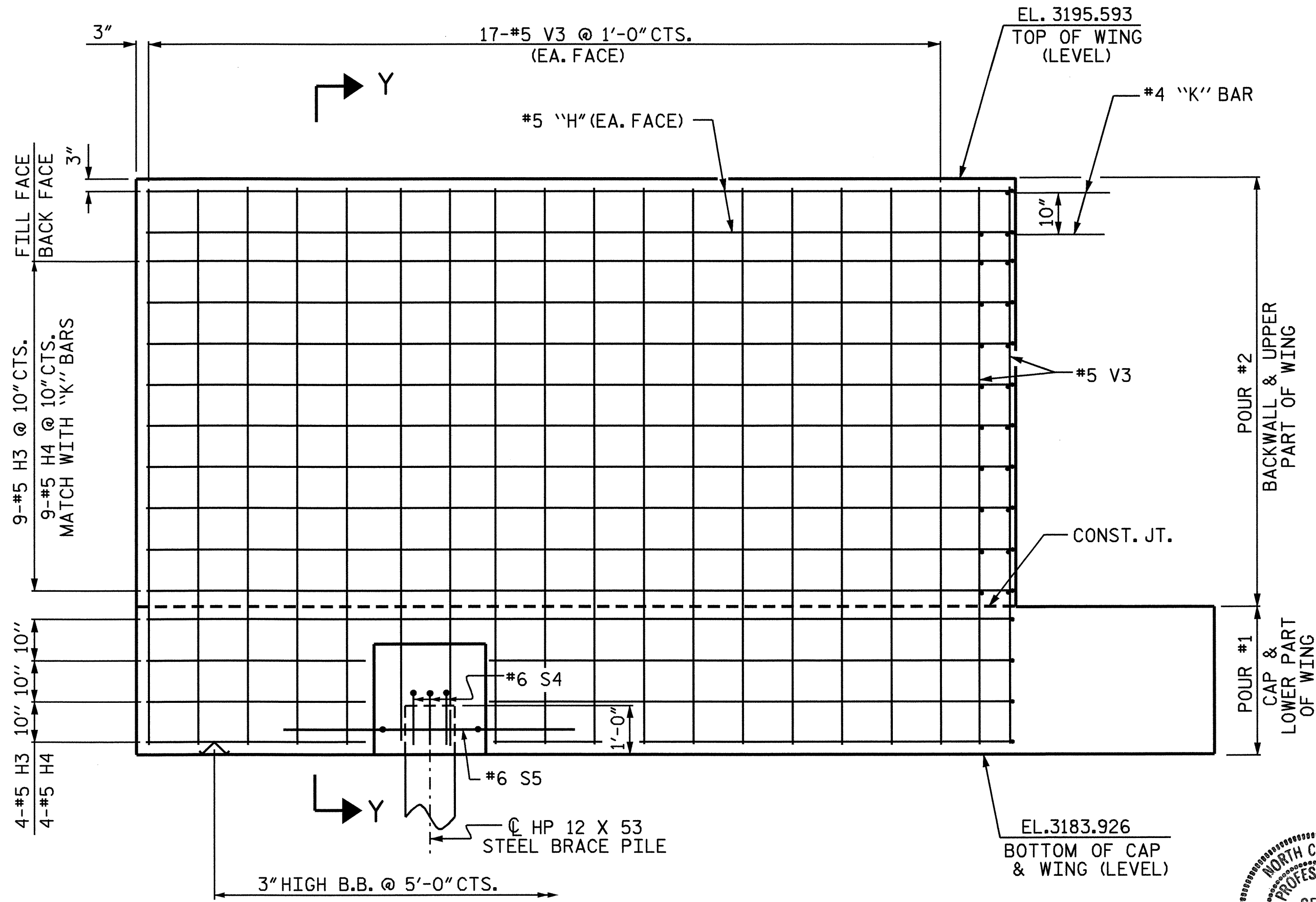
PLAN OF WING W1



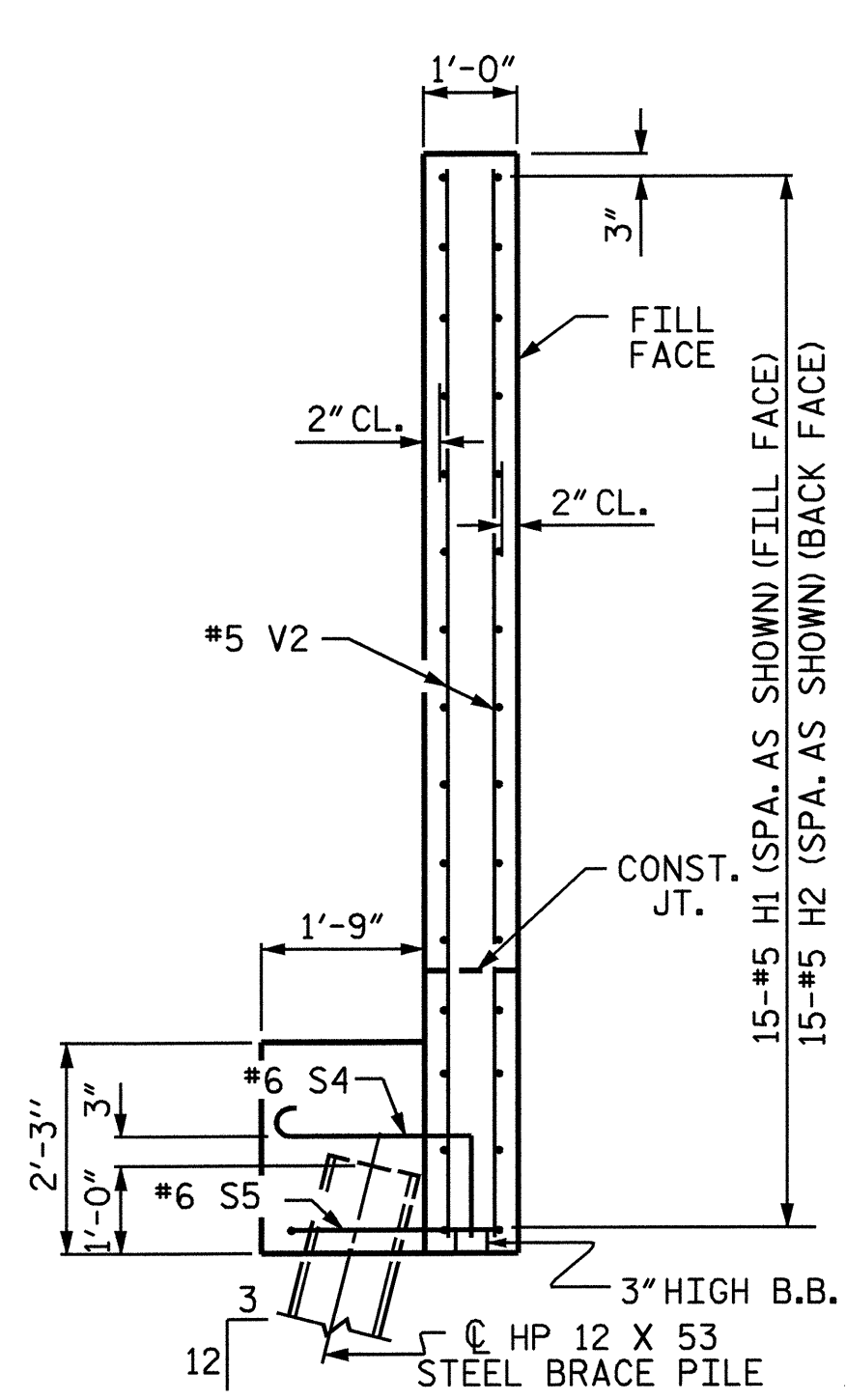
PLAN OF WING W2



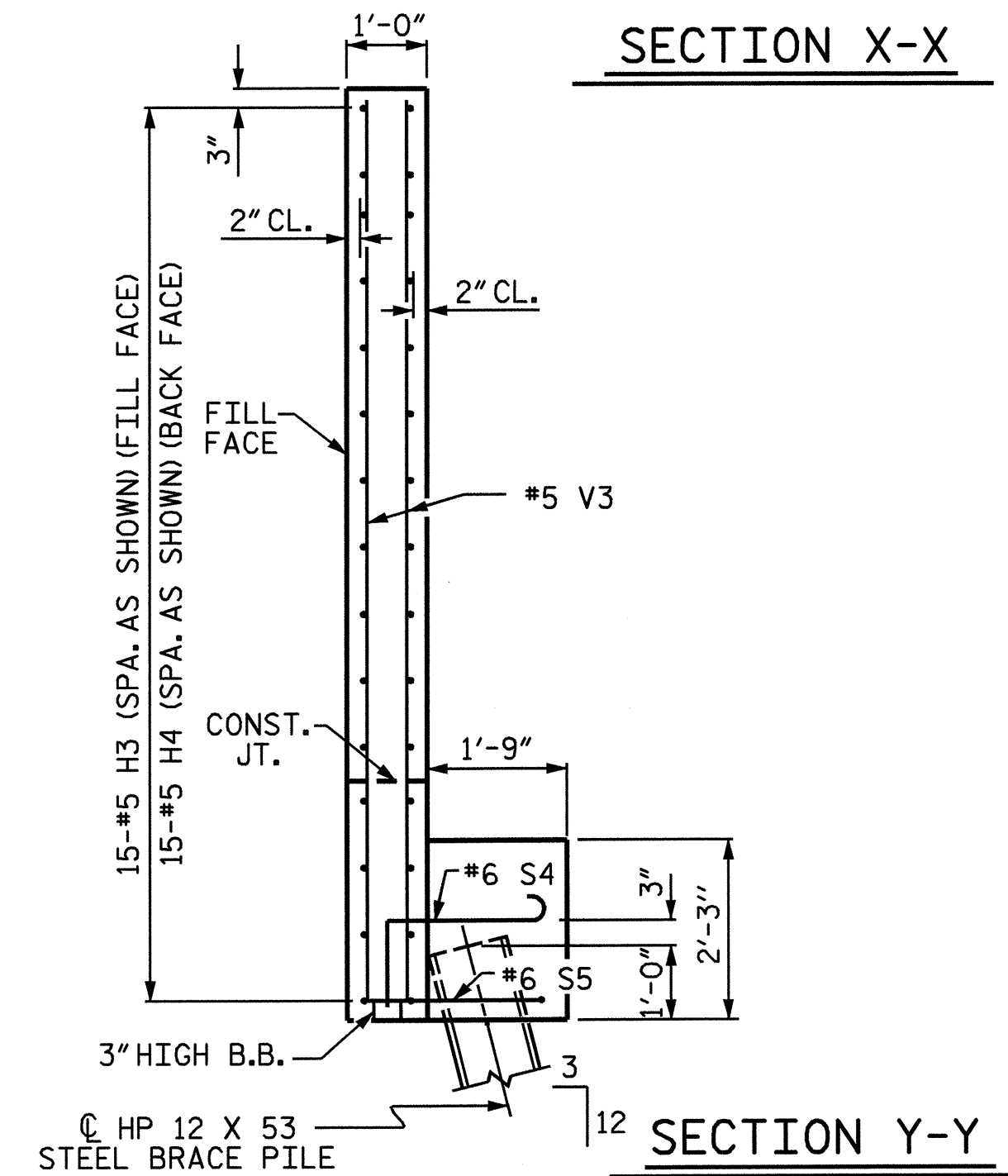
ELEVATION OF WING W1



ELEVATION OF WING W2



SECTION X-X



SECTION Y-Y

PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

SHEET 2 OF 3

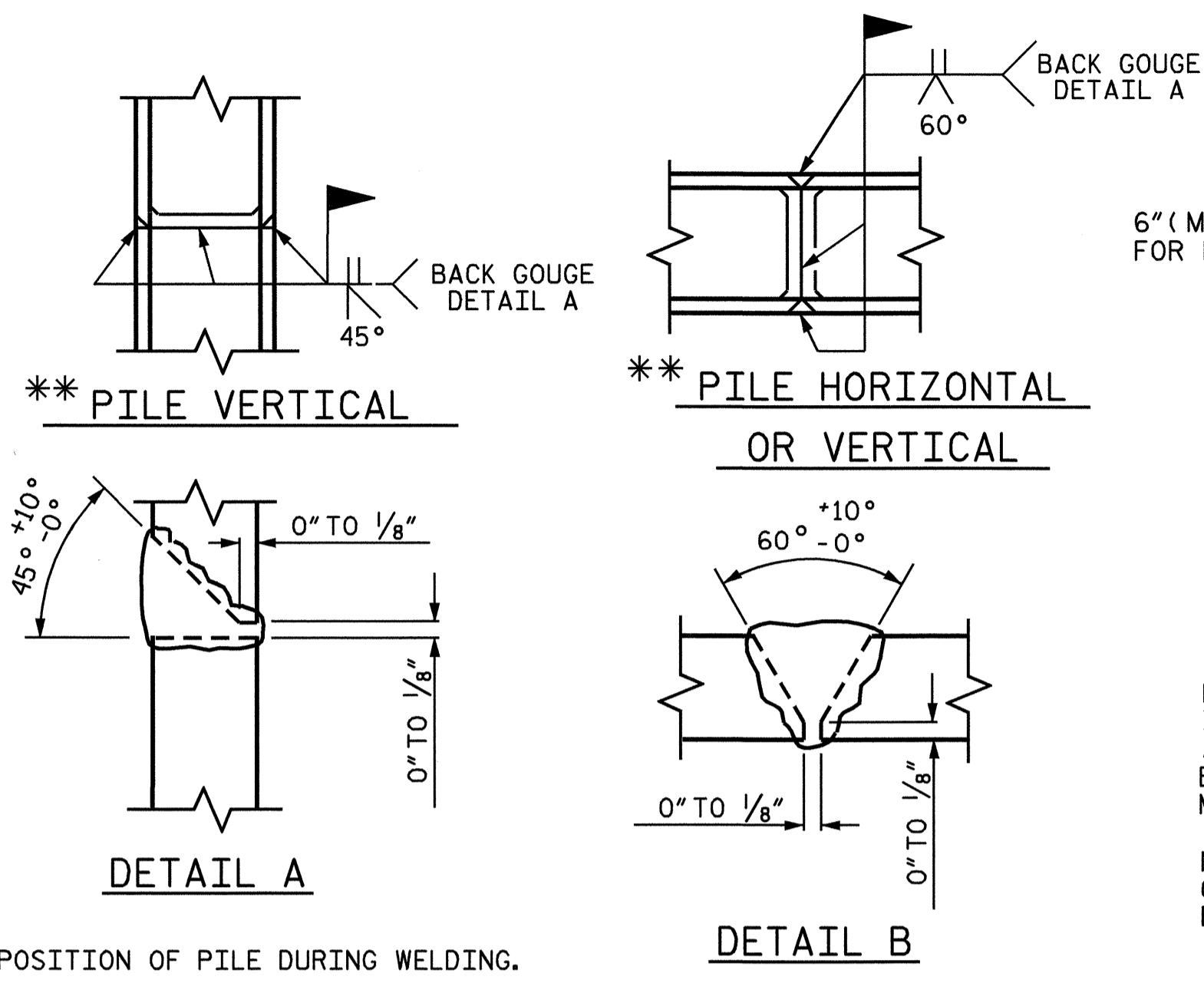
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 1

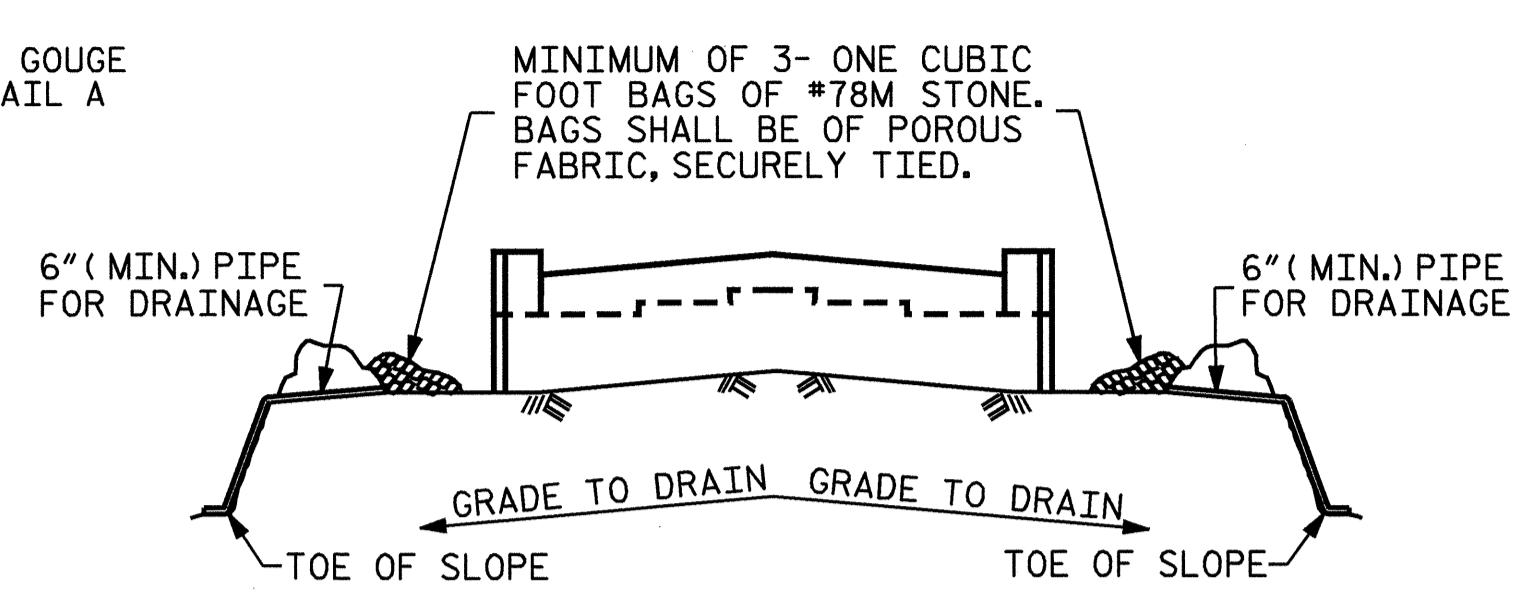


DRAWN BY : H.B.SHAH DATE : 06/07
 CHECKED BY : D.G. ELY DATE : 10/07

REVISIONS						SHEET NO. S-16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			



PILE SPLICE DETAILS

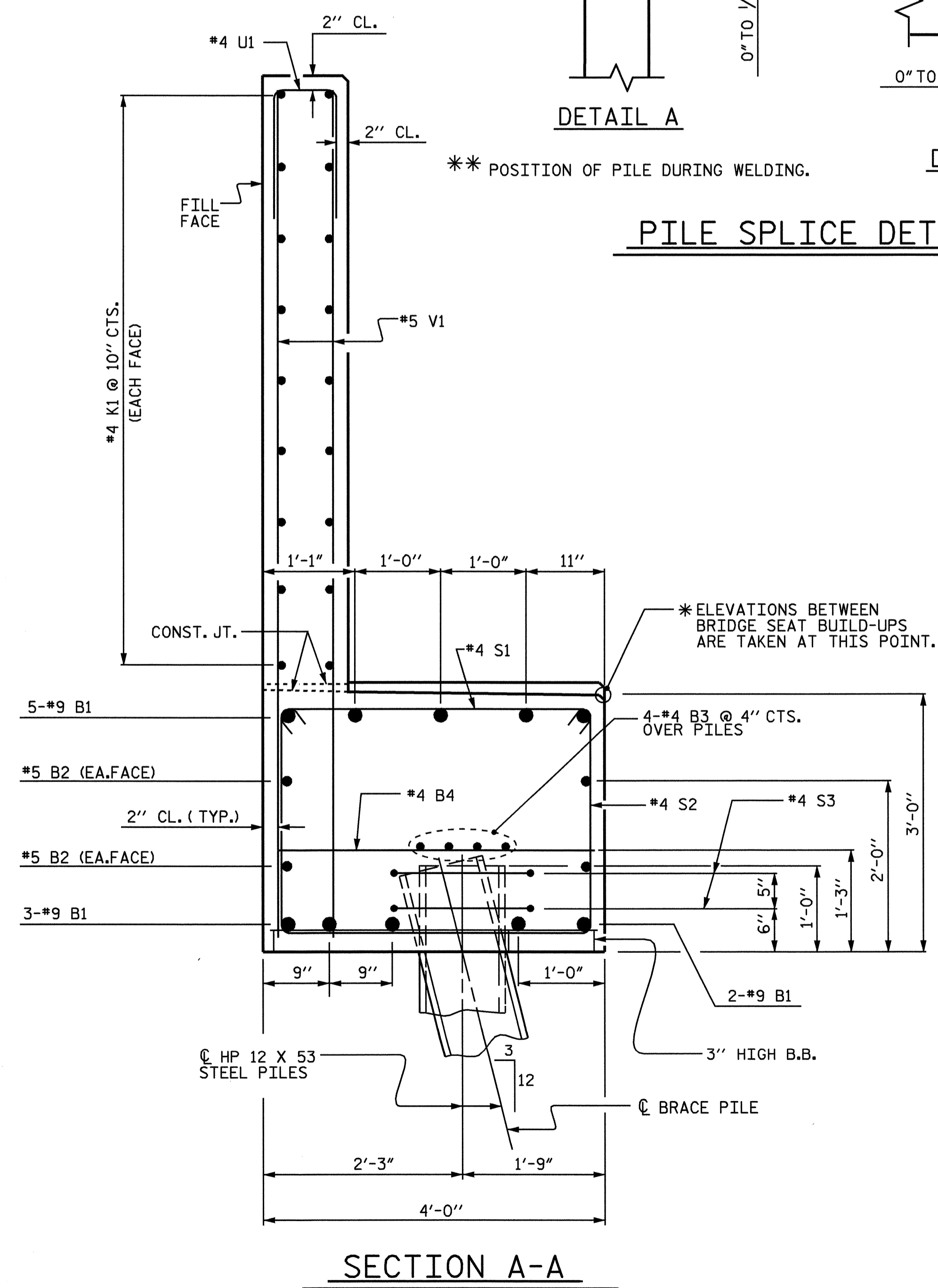


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

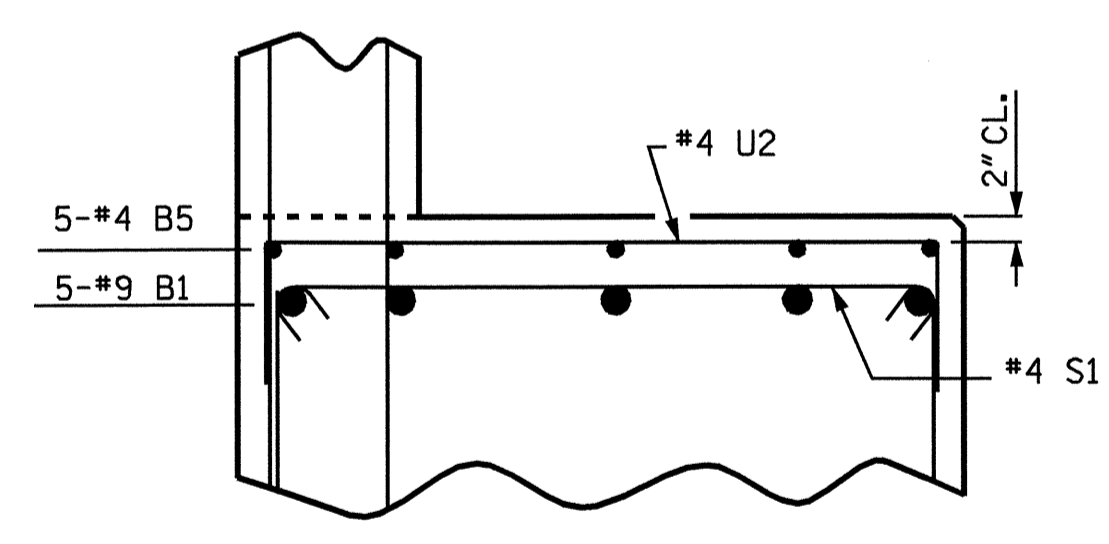
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

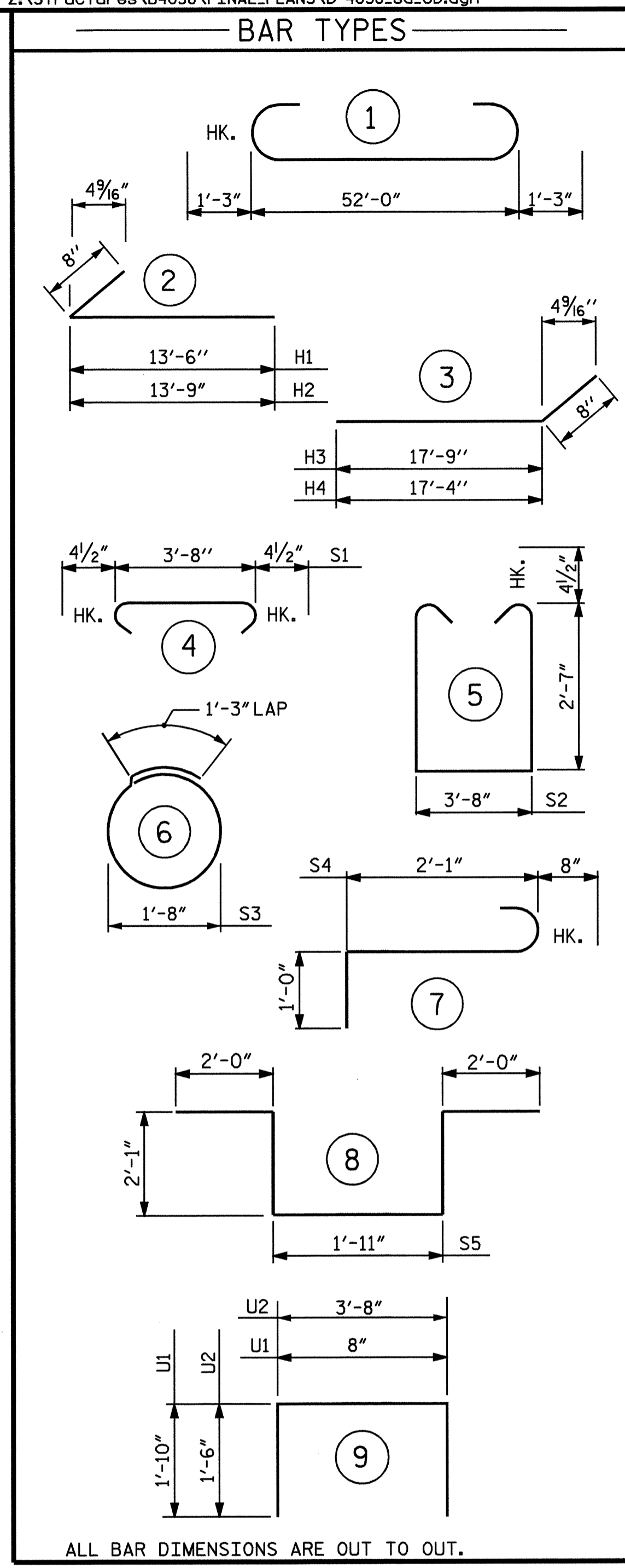
TEMPORARY DRAINAGE AT END BENT



SECTION A-A



SECTION B-B



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#9		54'-5"	1850
B2	4	#5	STR	52'-2"	218
B3	8	#4	STR	27'-5"	147
B4	13	#4	STR	3'-8"	32
B5	10	#4	STR	3'-2"	21
H1	15	#5	2	14'-2"	222
H2	15	#5	2	14'-5"	226
H3	15	#5	3	18'-5"	288
H4	15	#5	3	18'-0"	282
K1	36	#4	STR	27'-6"	661
K2	6	#4	STR	4'-4"	17
K3	2	#4	STR	4'-0"	5
S1	50	#4	4	4'-5"	148
S2	50	#4	5	9'-7"	320
S3	26	#4	6	6'-6"	113
S4	6	#6	7	3'-9"	34
S5	2	#6	8	10'-1"	30
U1	43	#4	9	4'-4"	124
U2	8	#4	9	6'-8"	36
V1	86	#5	STR	9'-8"	867
V2	38	#5	STR	11'-5"	452
V3	46	#5	STR	11'-4"	545

REINFORCING STEEL LBS 6638

CLASS A CONCRETE
 POUR #1: CAP & LOWER PART OF WINGS CY 28.2
 POUR #2: BACKWALL & UPPER PART OF WINGS CY 24.1
 TOTAL CLASS A CONCRETE CY 52.3

HP 12 X 53 STEEL PILES NO. 15 LIN. FT. 150

PILE EXCAVATION QUANTITIES:
 PILE EXCAVATION IN SOIL 46 LIN. FT
 PILE EXCAVATION NOT IN SOIL 46 LIN. FT

STEEL PILE POINTS EACH 15

PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

SHEET 3 OF 3

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



DRAWN BY : H.B.SHAH DATE : 06/07
 CHECKED BY : D.G. ELY DATE : 10/07

REVISIONS						SHEET NO. S-17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

NOTES

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

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

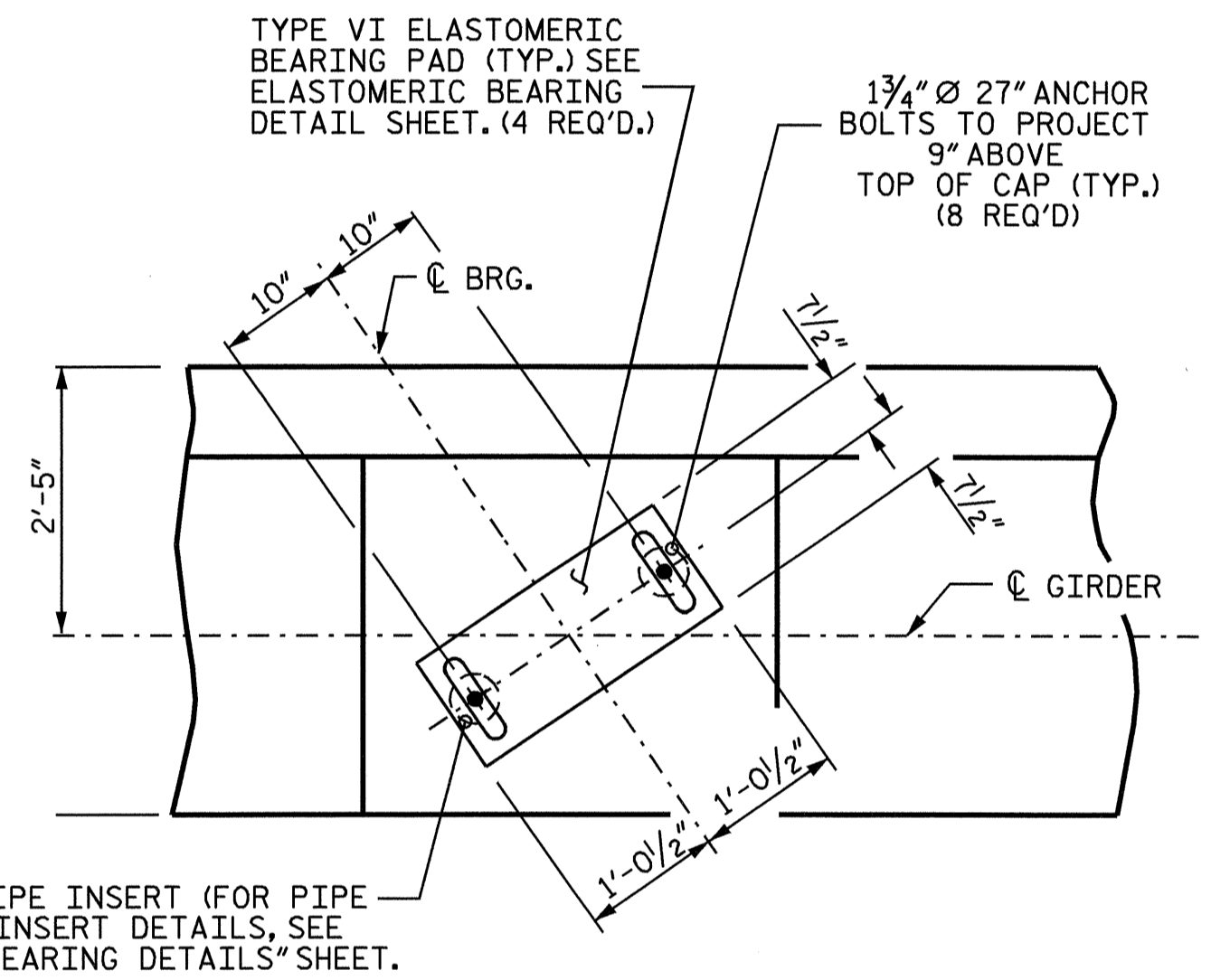
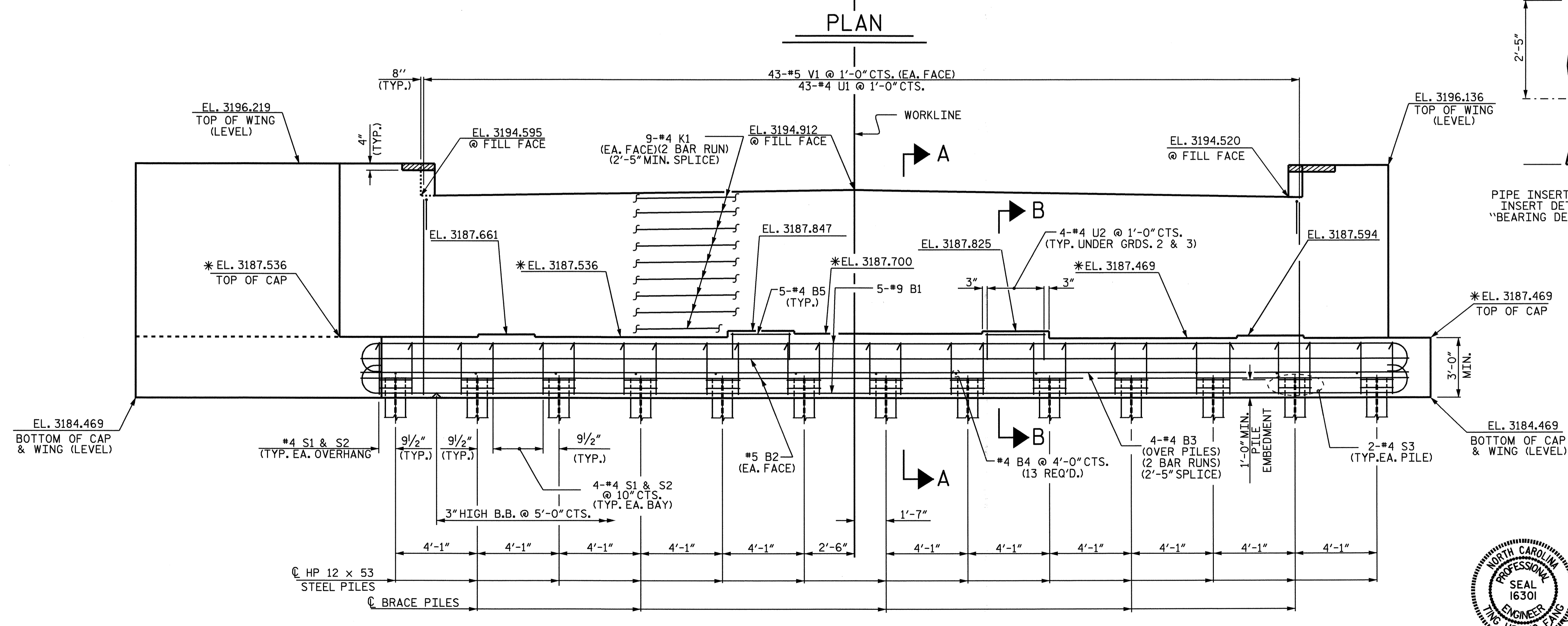
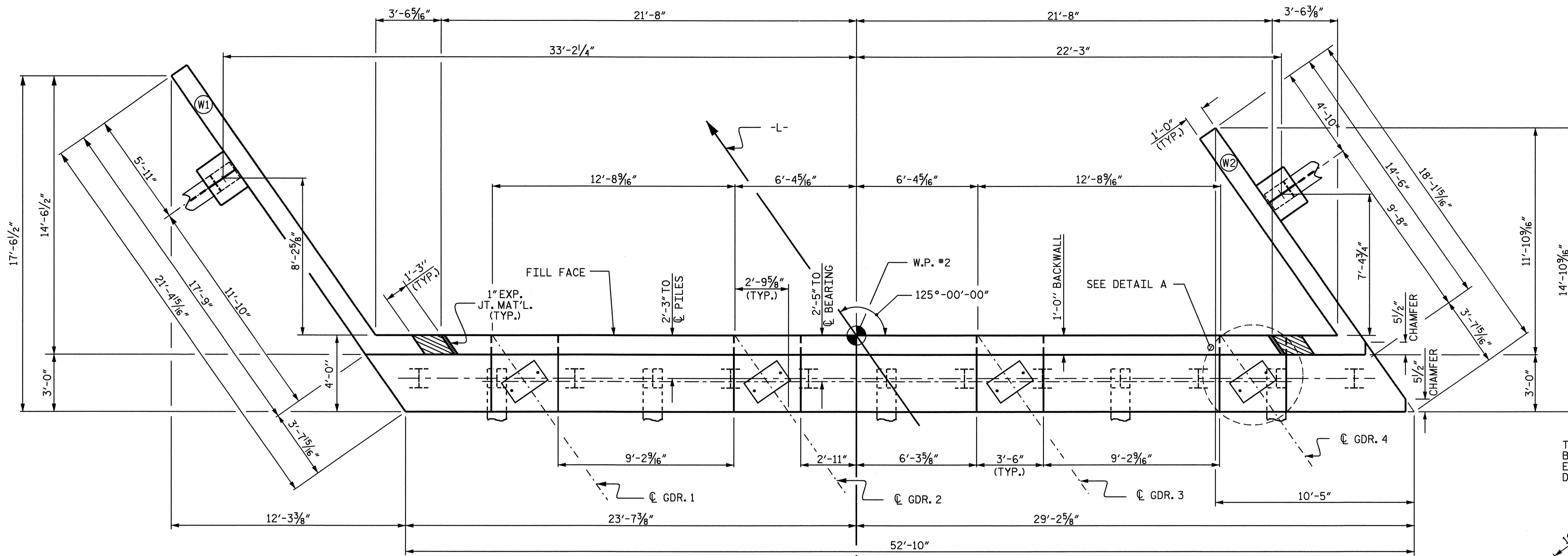
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

* 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%.

EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.

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.

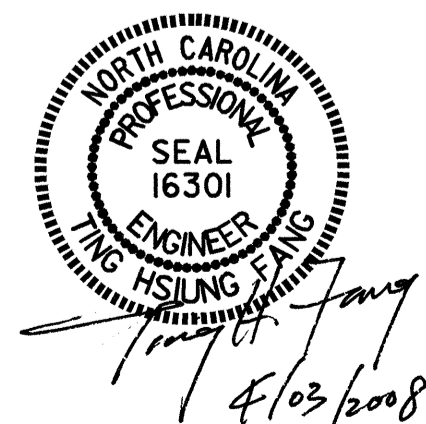


PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

SHEET 1 OF 3

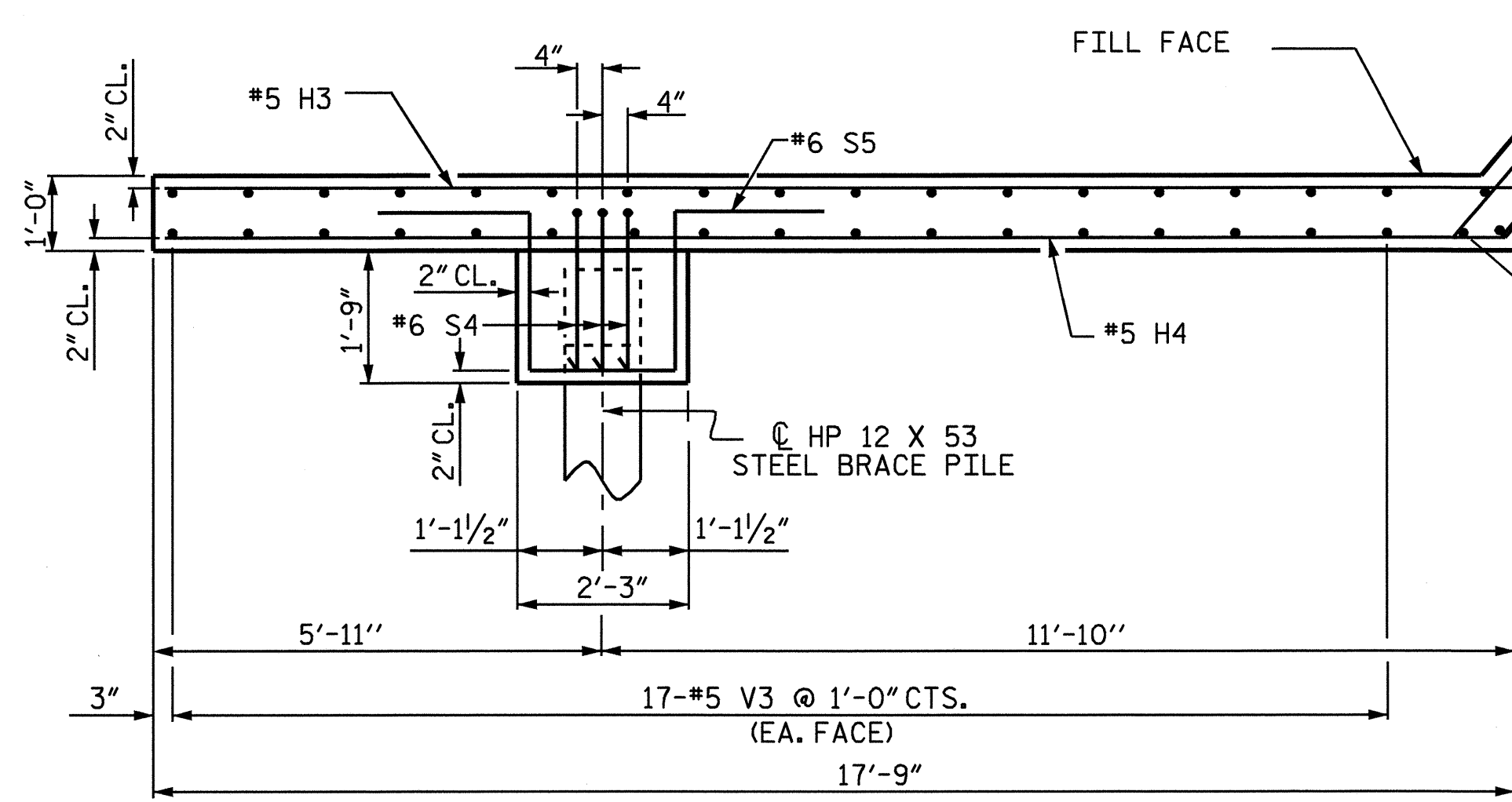
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 2

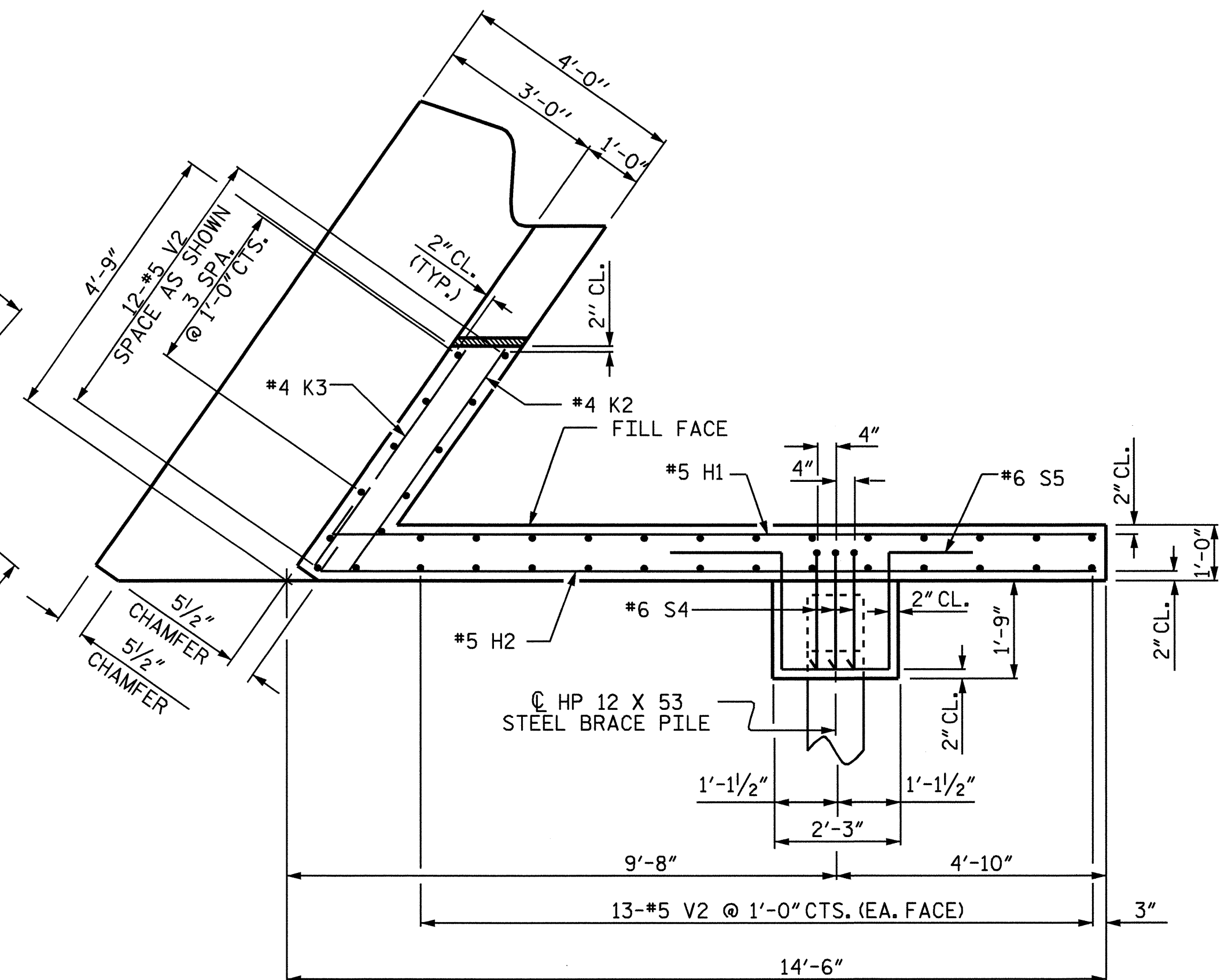


DRAWN BY: HARISH SHAH DATE: 10/07
 CHECKED BY: D.G. ELY DATE: 10/07

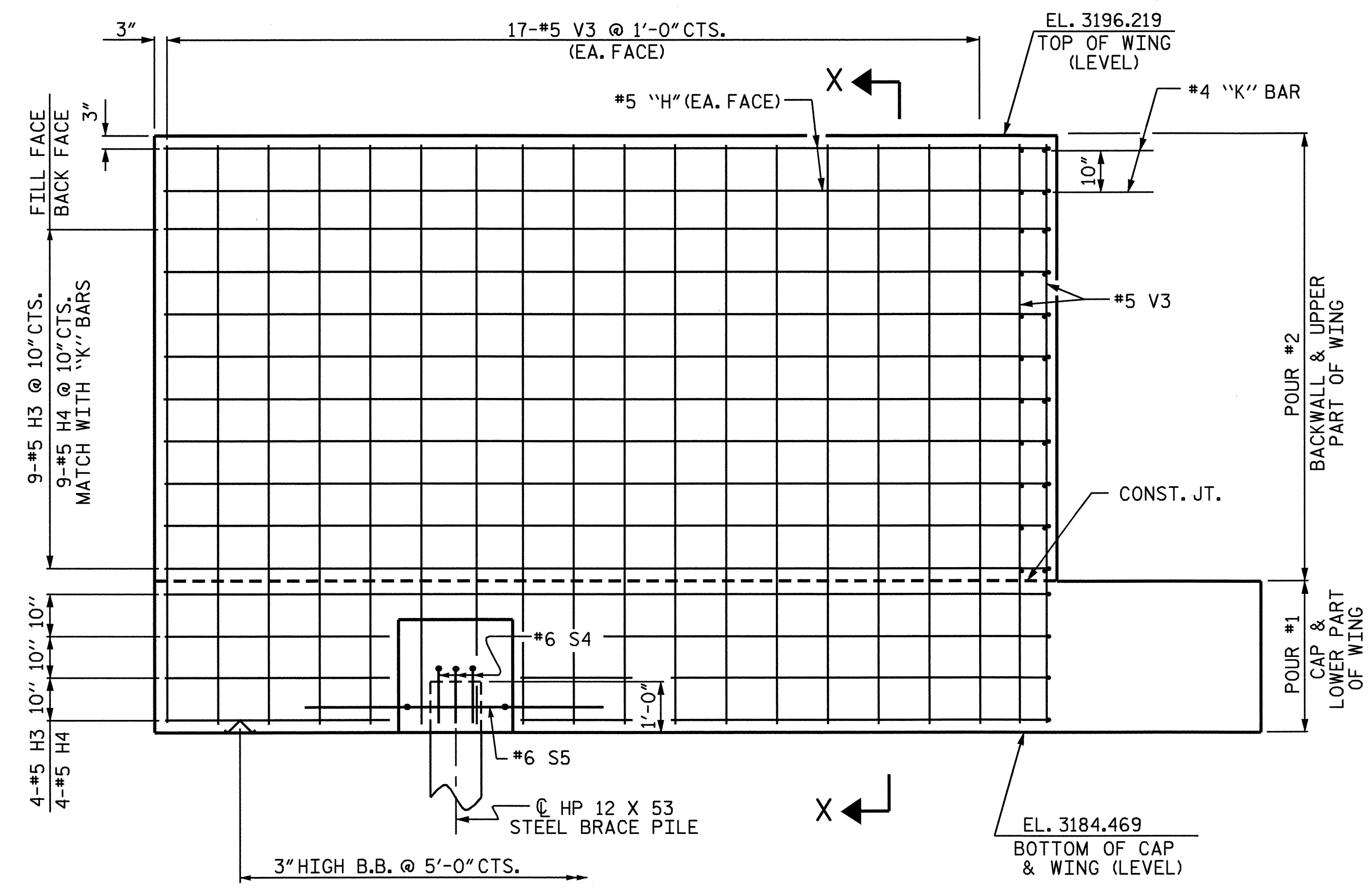
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			23



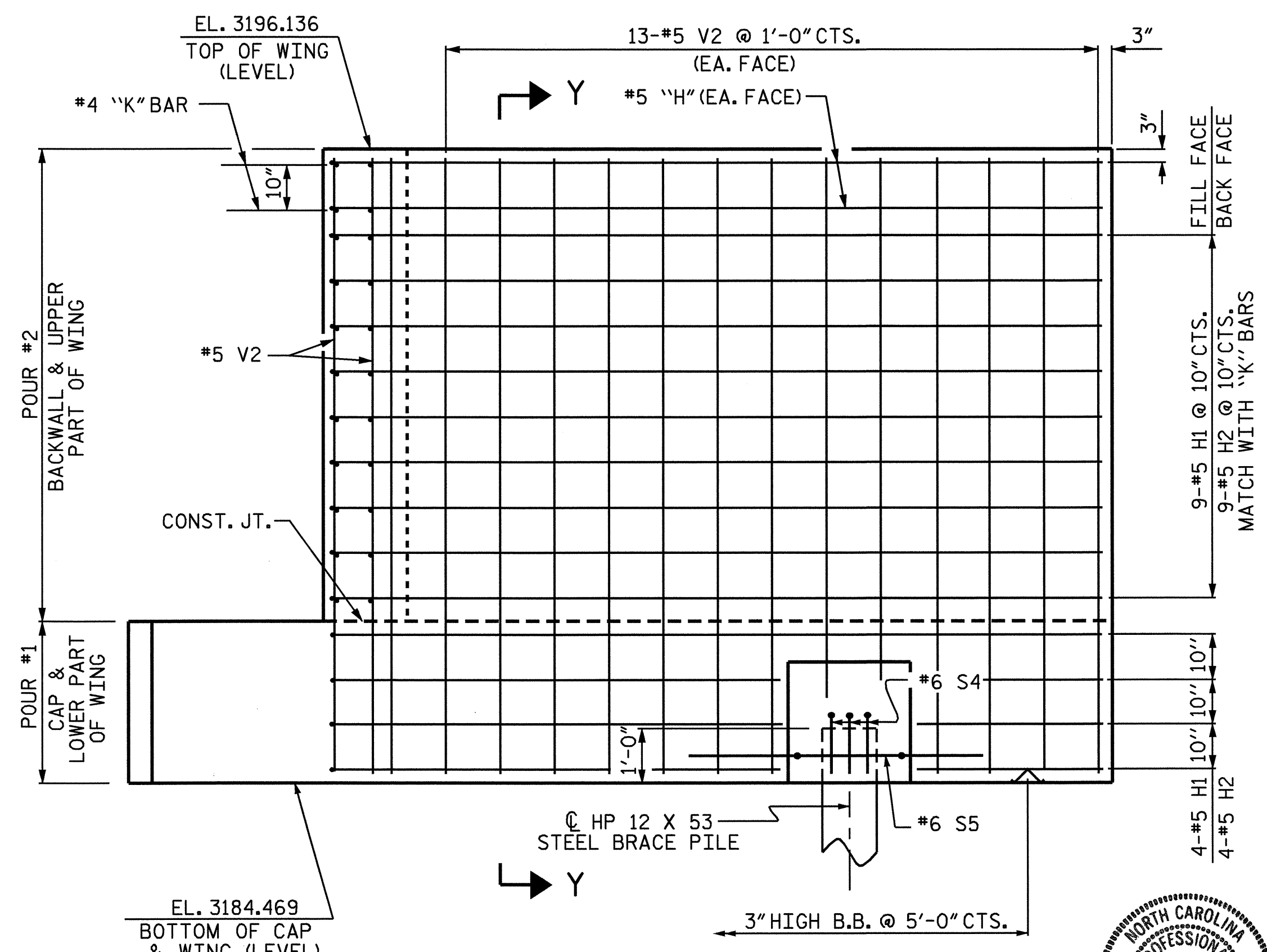
PLAN OF WING W1



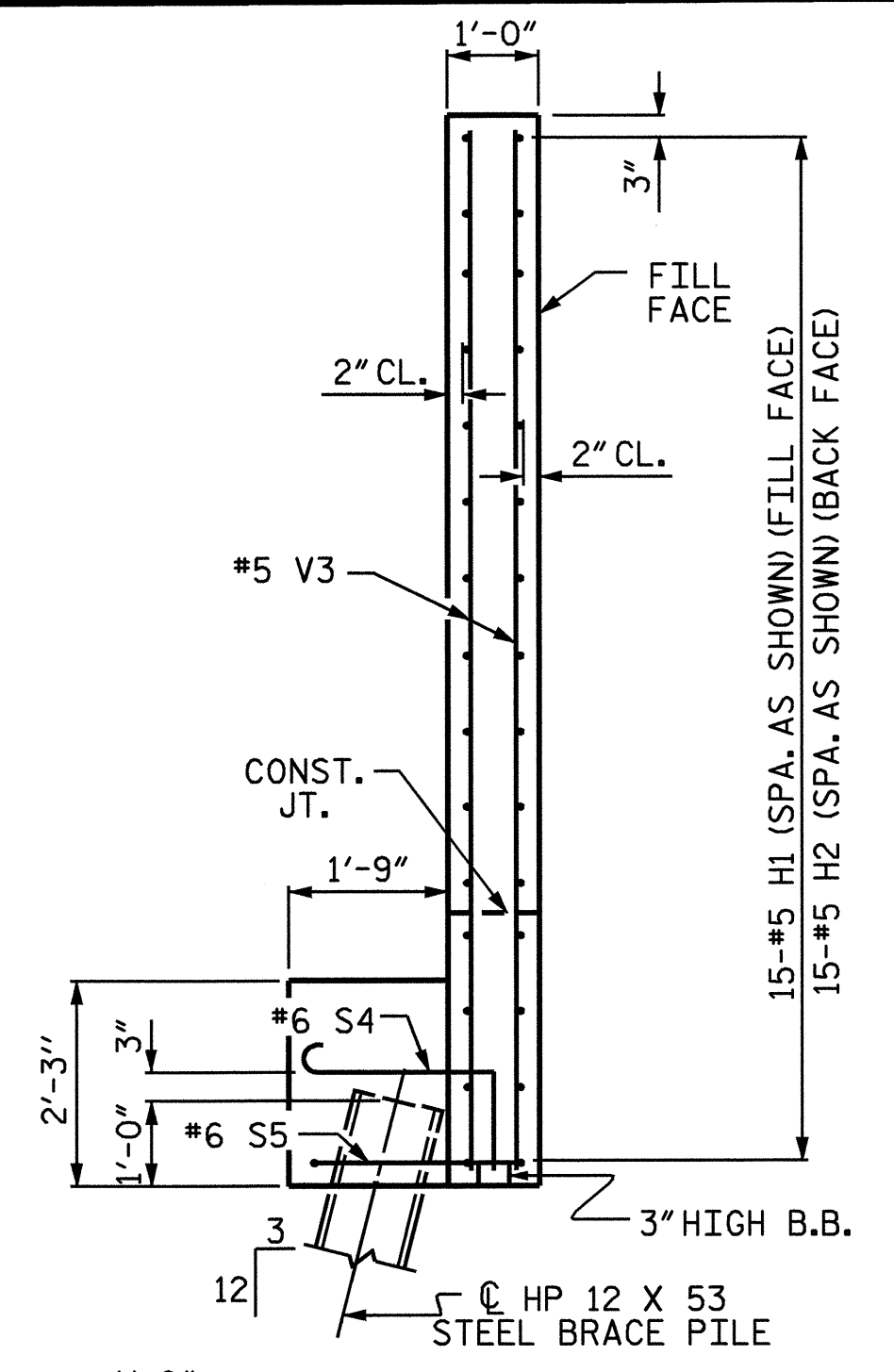
PLAN OF WING W2



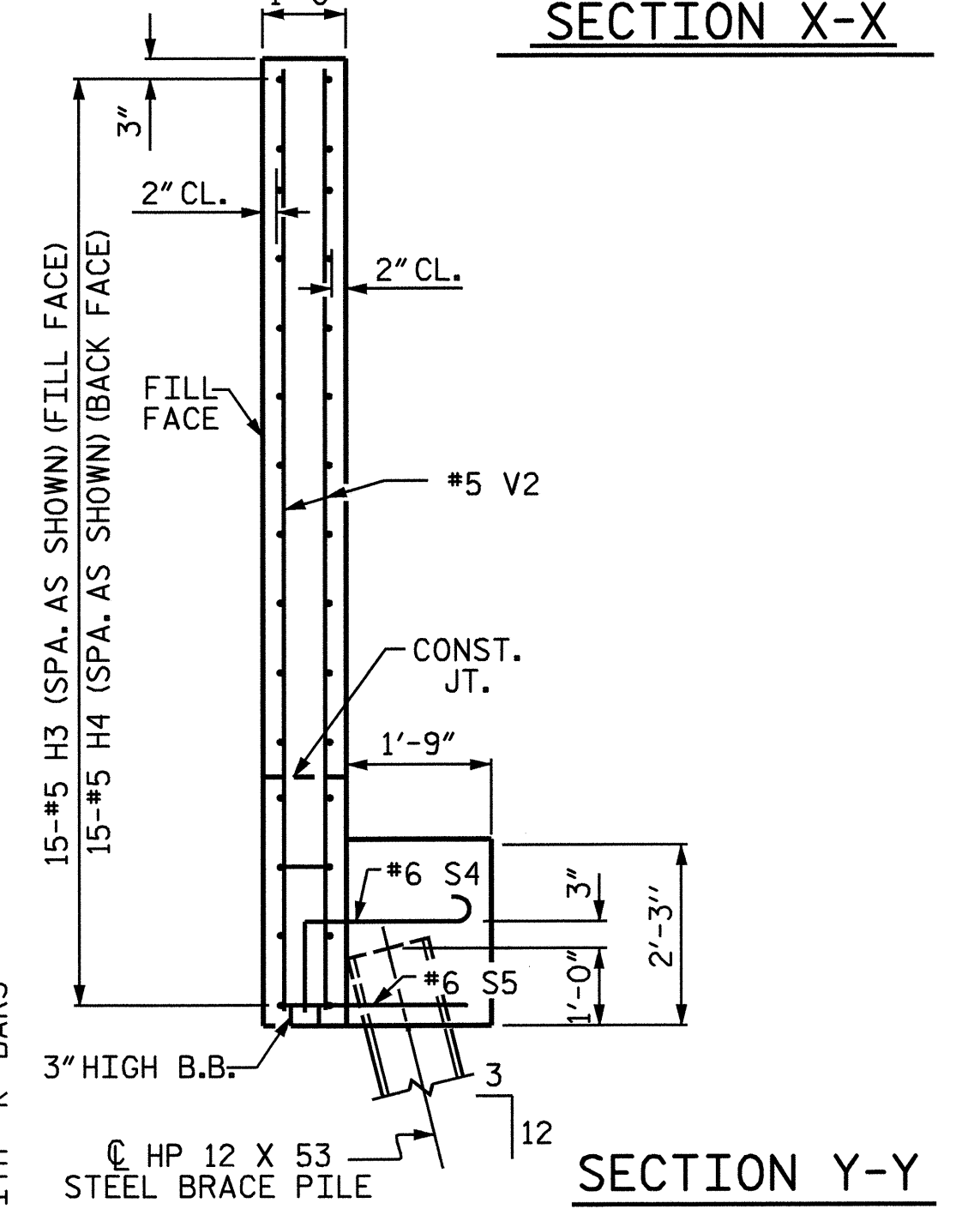
ELEVATION OF WING W1



ELEVATION OF WING W2



SECTION X-X



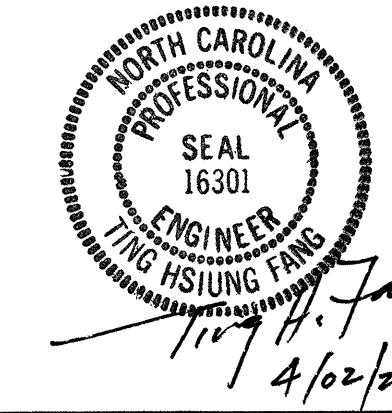
SECTION Y-Y

PROJECT NO. B-4038
 BURKE COUNTY
 STATION: 22+62.50 -L-

SHEET 2 OF 3

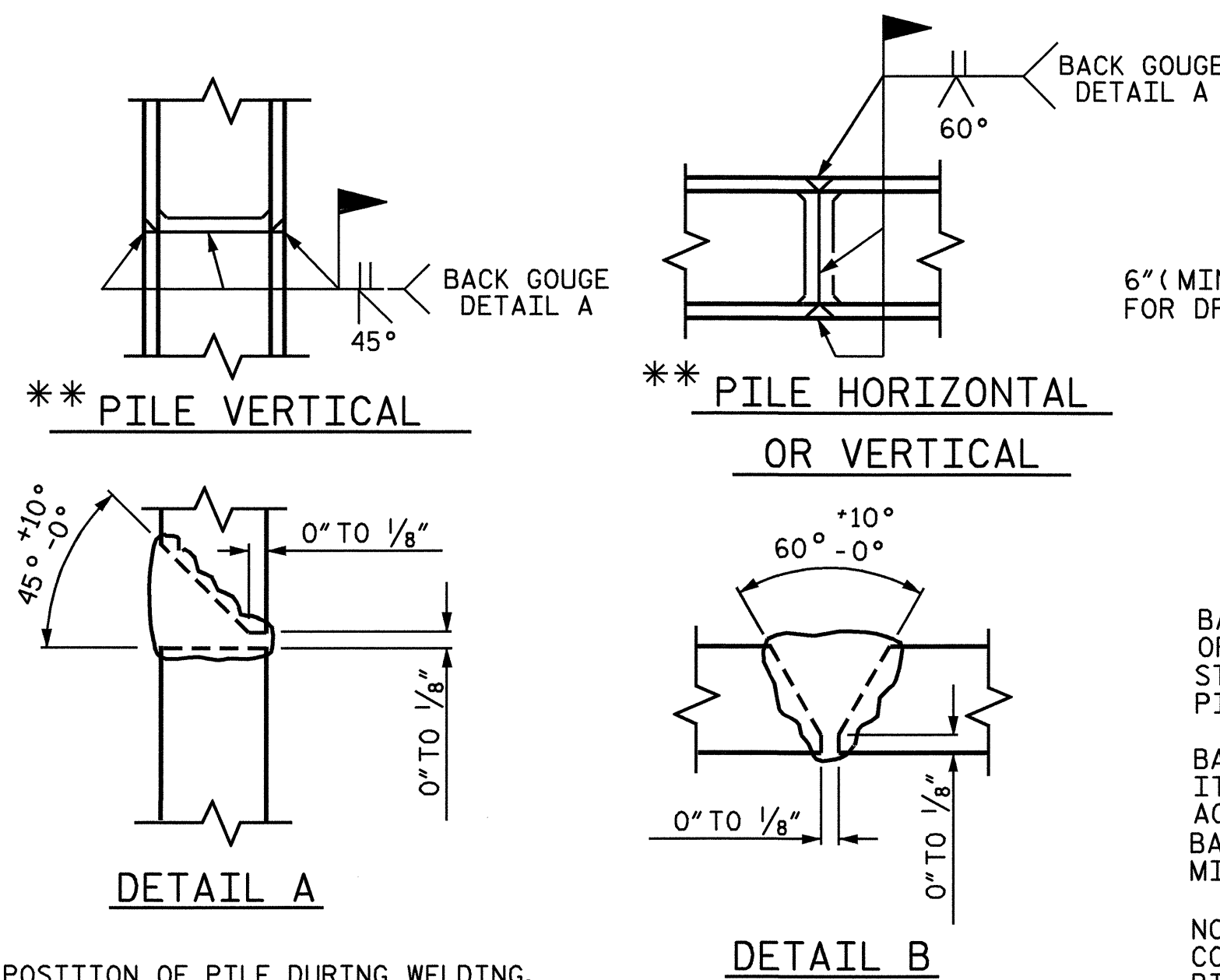
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19	
1			3			TOTAL	23
2			4			SHEETS	

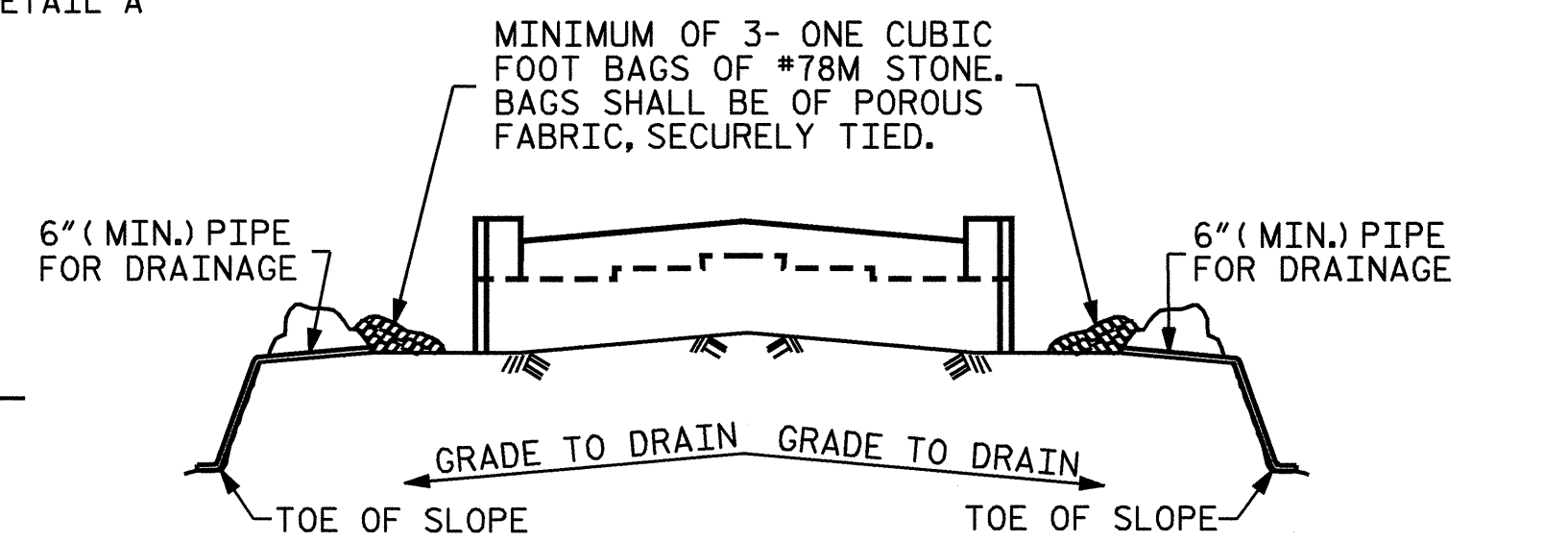


DRAWN BY: H.B.SHAH DATE: 06/07
 CHECKED BY: D.G. ELY DATE: 10/07

13-MAR-2008 08:30
 Z:\Structures\B4038\FINAL_PLANS\B-4038_sd_eb.dgn
 RWRRIGHT



PILE SPLICE DETAILS

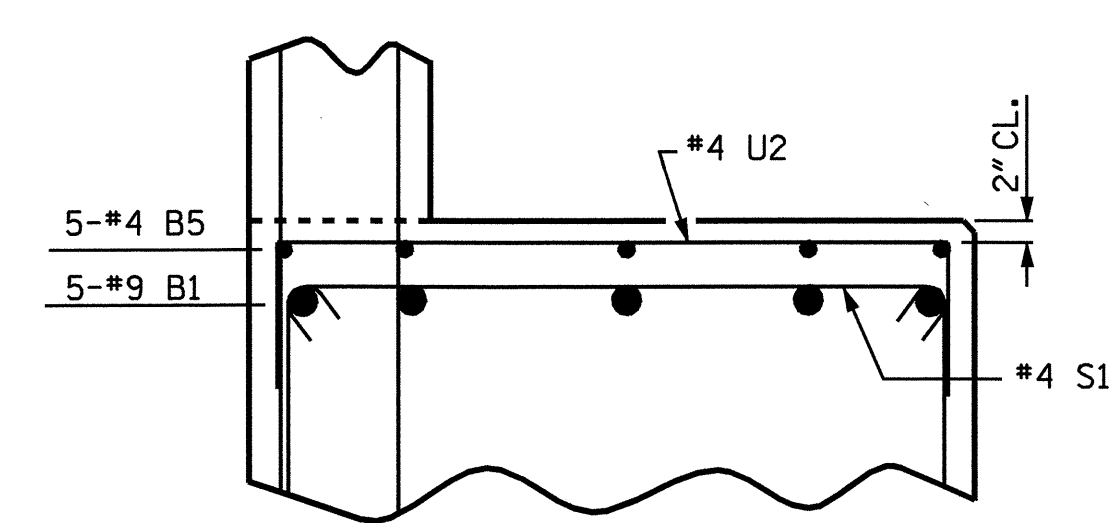


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

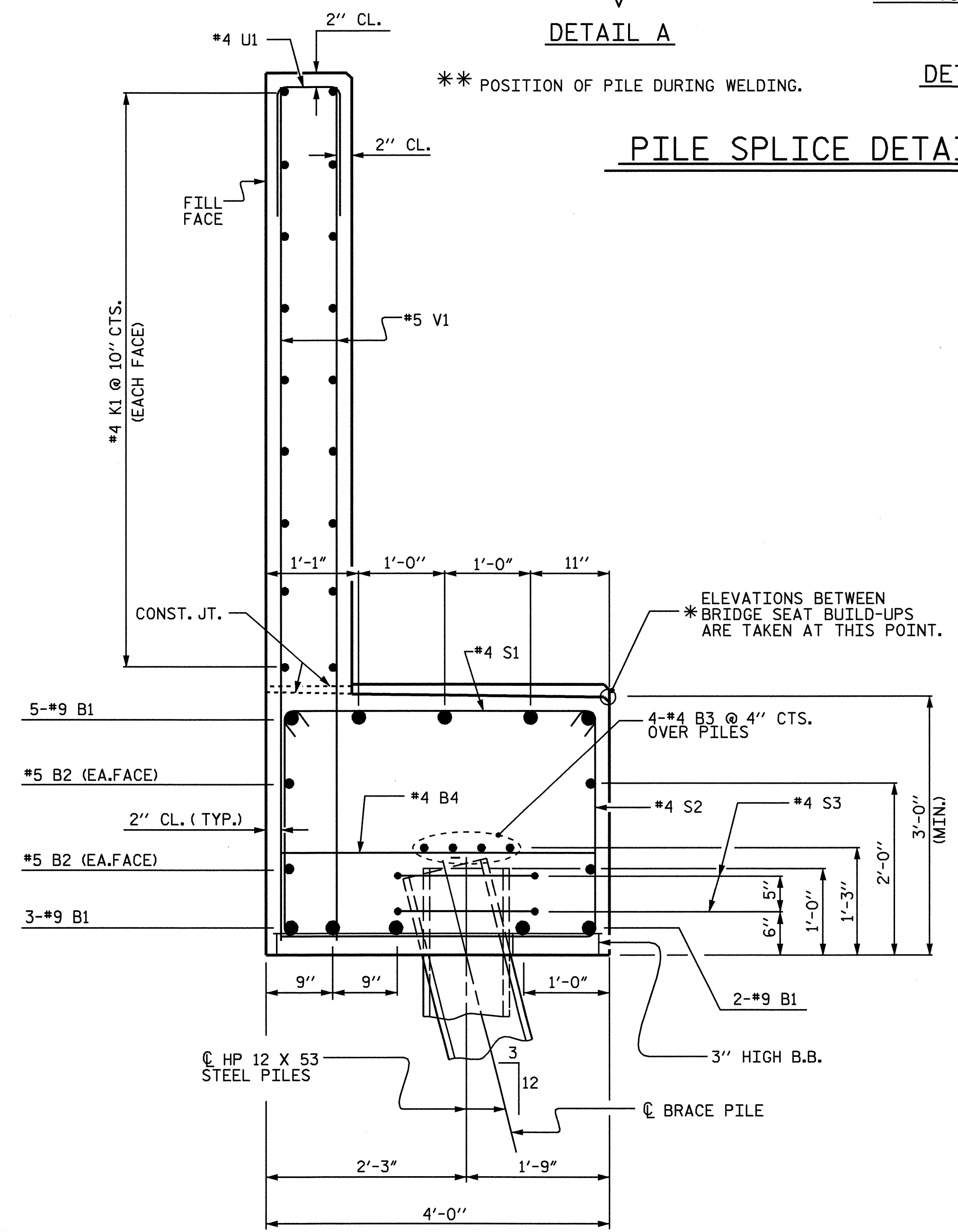
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

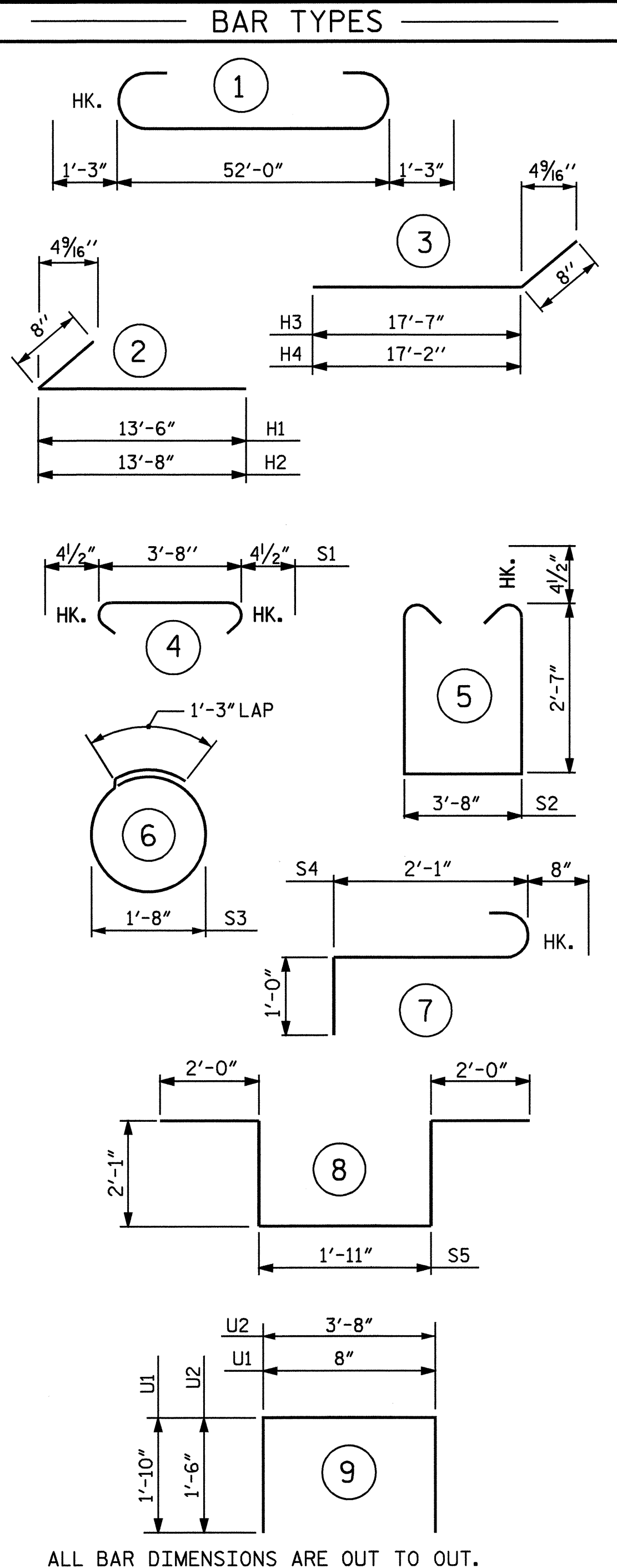
TEMPORARY DRAINAGE AT END BENT



SECTION B-B



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#9	1	54'-5"	1850
B2	4	#5	STR	52'-2"	218
B3	8	#4	STR	27'-5"	147
B4	13	#4	STR	3'-8"	32
B5	10	#4	STR	3'-2"	21
H1	15	#5	2	14'-2"	222
H2	15	#5	2	14'-4"	224
H3	15	#5	3	18'-3"	286
H4	15	#5	3	17'-10"	279
K1	36	#4	STR	27'-6"	661
K2	6	#4	STR	4'-4"	17
K3	2	#4	STR	4'-0"	5
S1	50	#4	4	4'-5"	148
S2	50	#4	5	9'-7"	320
S3	26	#4	6	6'-6"	113
S4	6	#6	7	3'-9"	34
S5	2	#6	8	10'-1"	30
U1	43	#4	9	4'-4"	124
U2	8	#4	9	6'-8"	36
V1	86	#5	STR	9'-8"	867
V2	38	#5	STR	11'-4"	449
V3	46	#5	STR	11'-5"	549

REINFORCING STEEL LBS 6632

CLASS A CONCRETE
 POUR #1: CAP & LOWER PART OF WINGS CY 28.3
 POUR #2: BACKWALL & UPPER PART OF WINGS CY 24.2
 TOTAL CLASS A CONCRETE CY 52.5

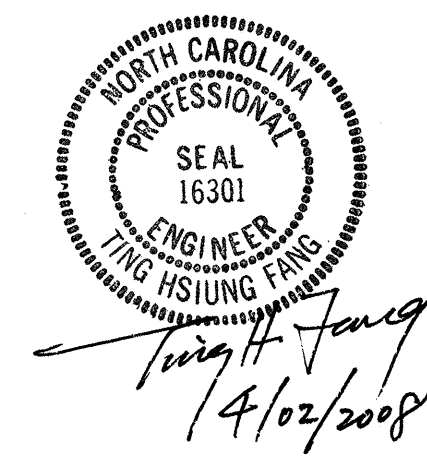
HP 12 X 53 STEEL PILES NO. 15 LIN. FT. 225

PILE EXCAVATION QUANTITIES:
 PILE EXCAVATION IN SOIL 46 LIN. FT
 PILE EXCAVATION NOT IN SOIL 46 LIN. FT

STEEL PILE POINTS EACH 15

PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

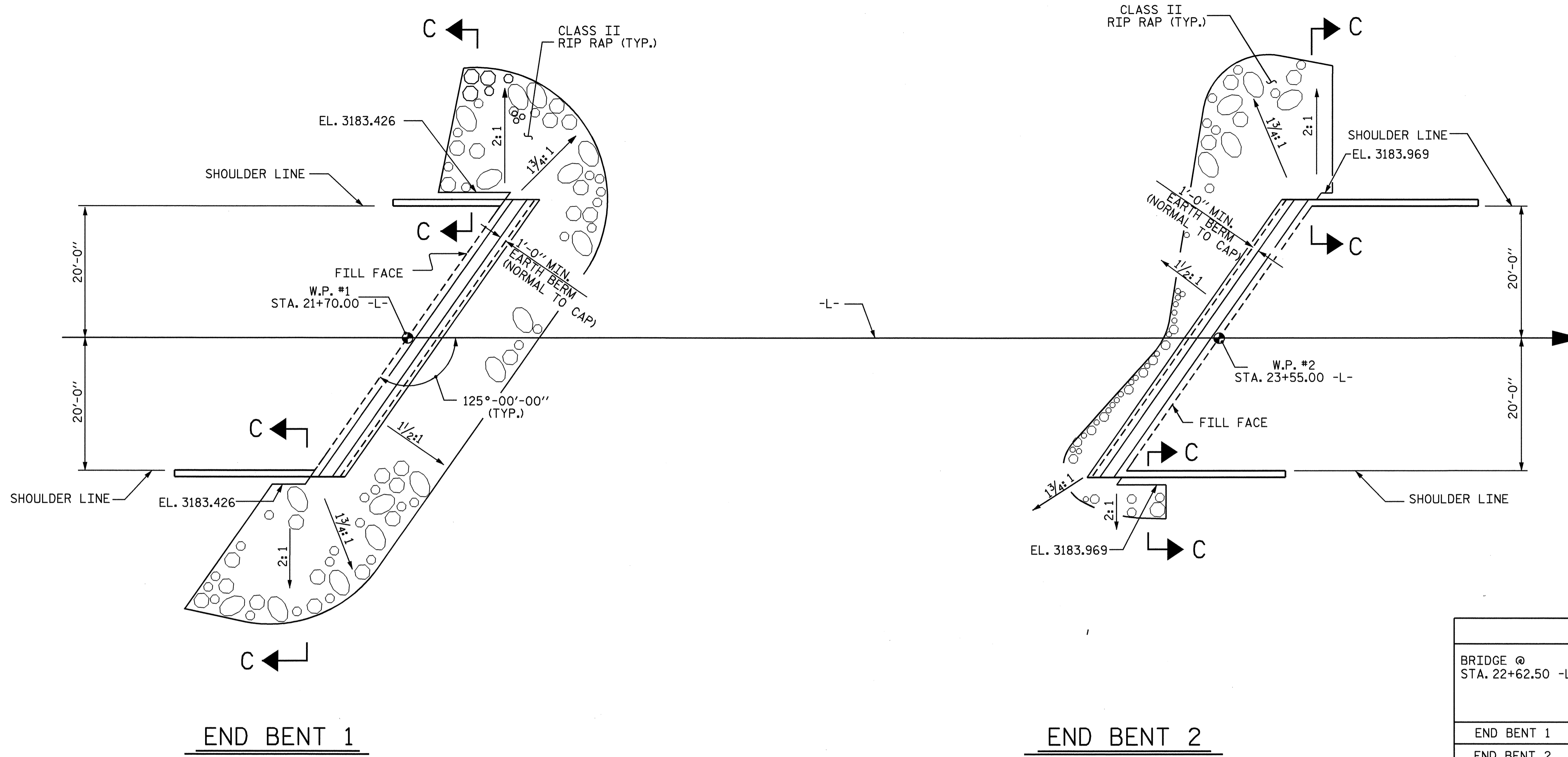
SHEET 3 OF 3



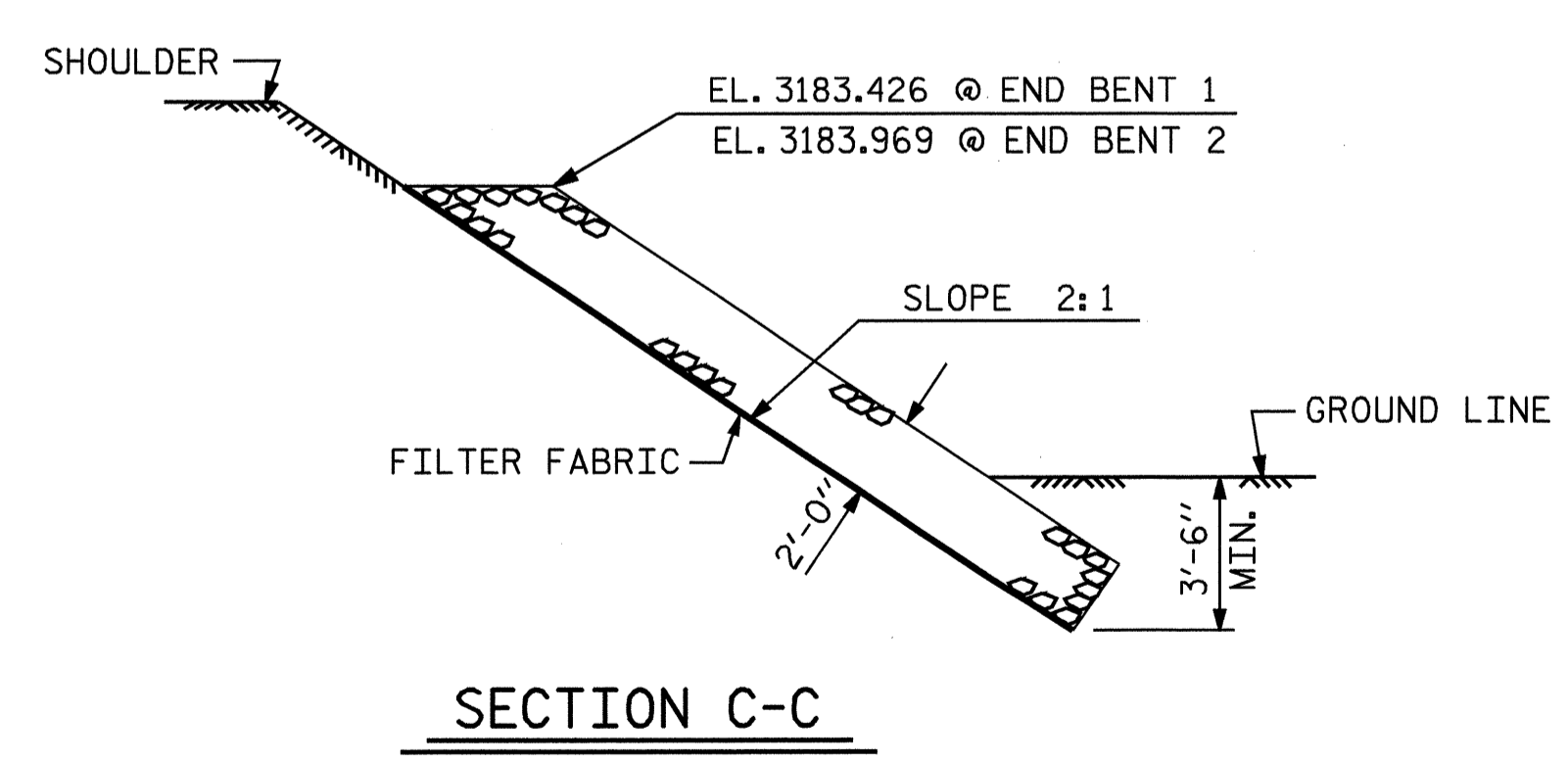
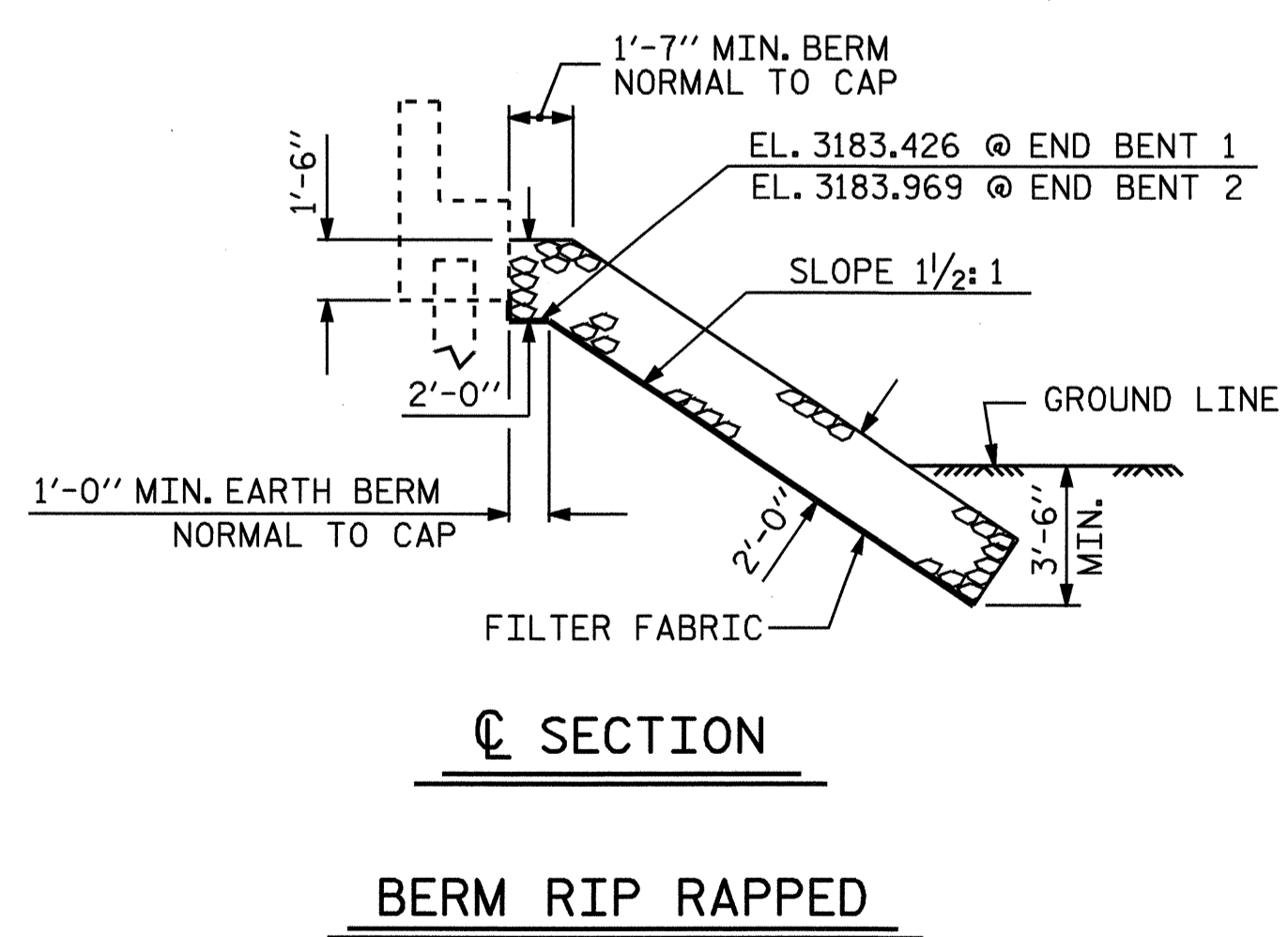
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			23

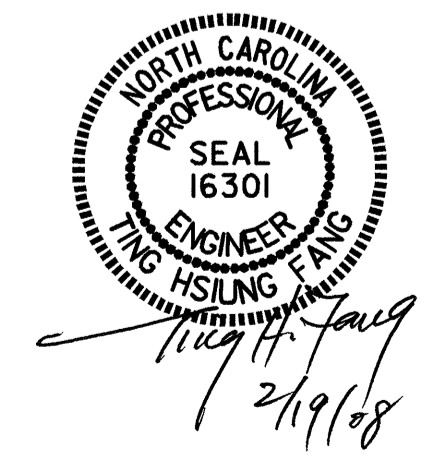
DRAWN BY: HARISH SHAH DATE: 06/07
 CHECKED BY: D.G. ELY DATE: 10/07



ESTIMATED QUANTITIES		
BRIDGE @ STA. 22+62.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	180	200
END BENT 2	100	110



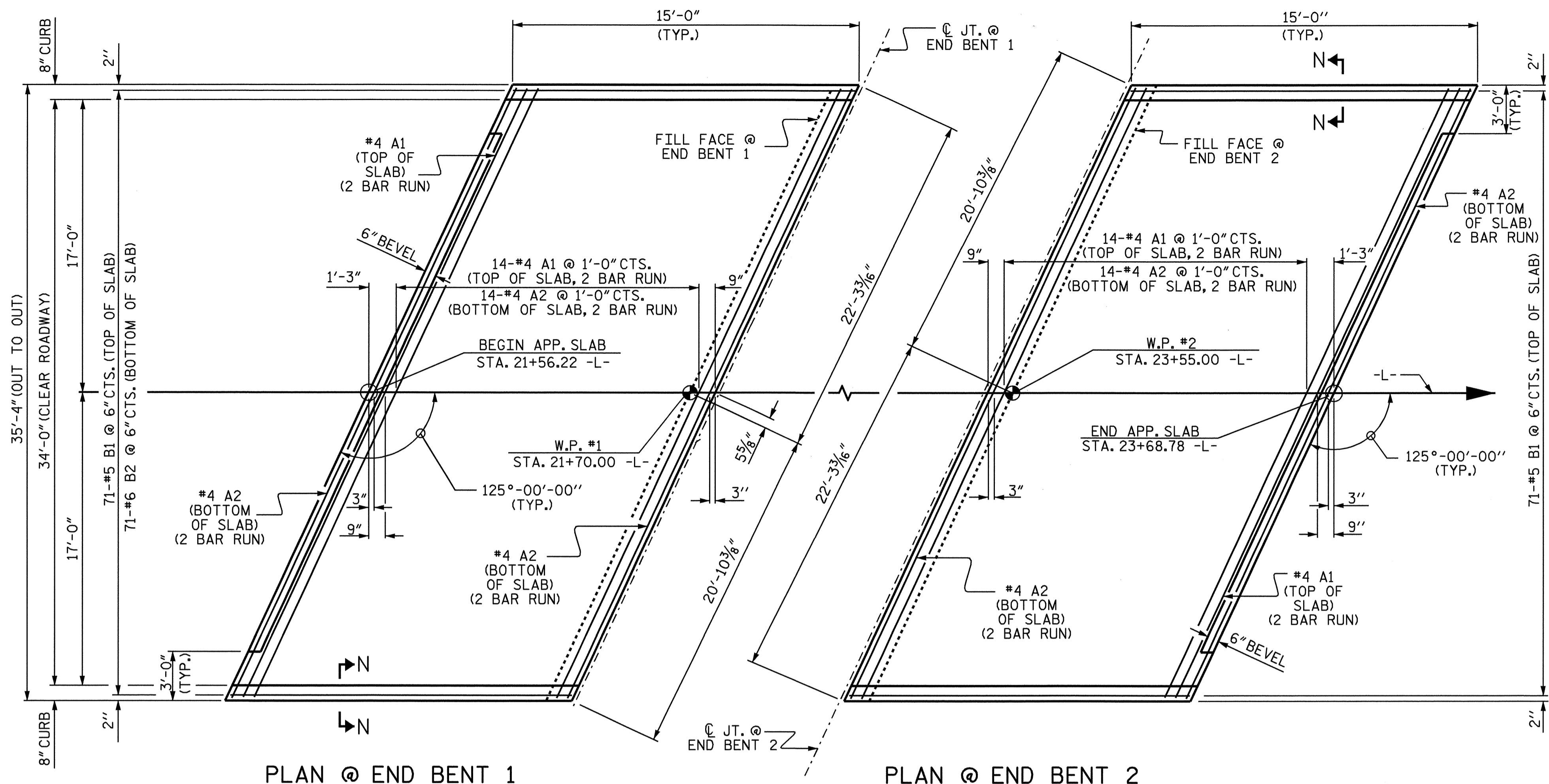
PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 — RIP RAP DETAILS —

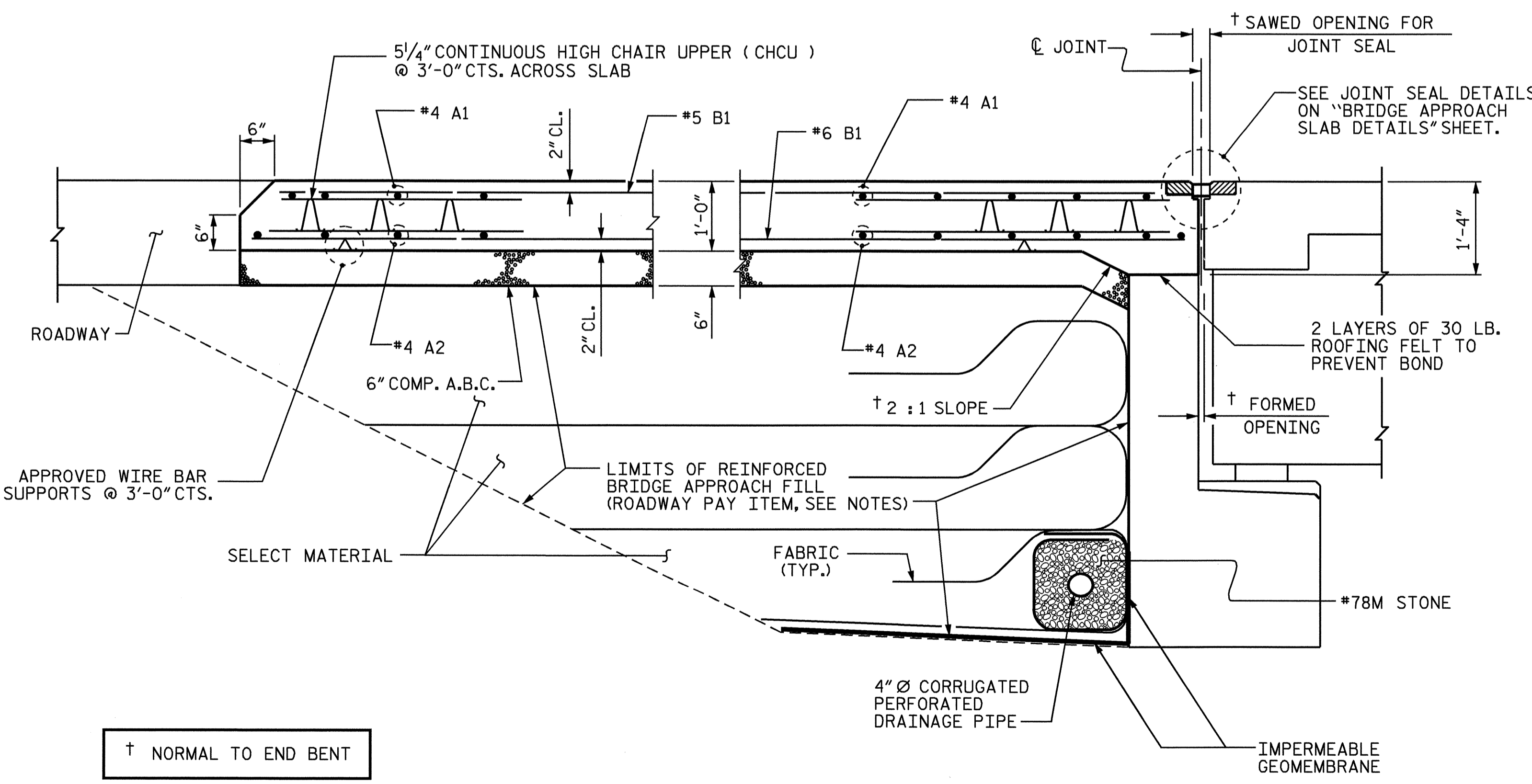
ASSEMBLED BY : HARISH SHAH DATE : 06/07
 CHECKED BY : D.G. ELY DATE : 10/07
 DRAWN BY : REK 1/84 REV. 8/16/99 RWW/LES
 CHECKED BY : RDU 1/84 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			23



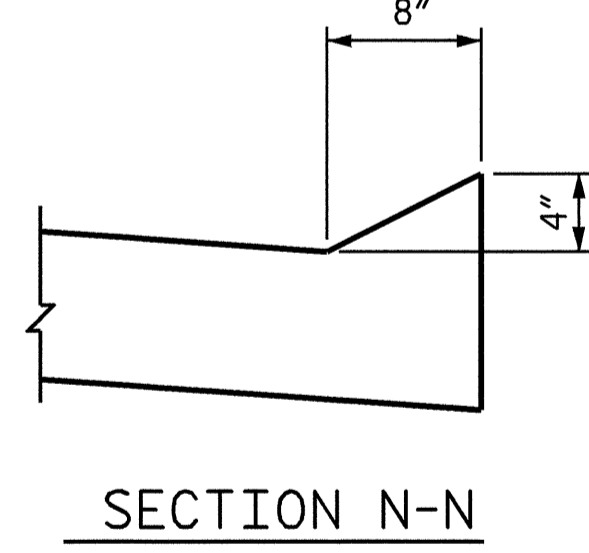
PLAN @ END BENT 1

PLAN @ END BENT 2

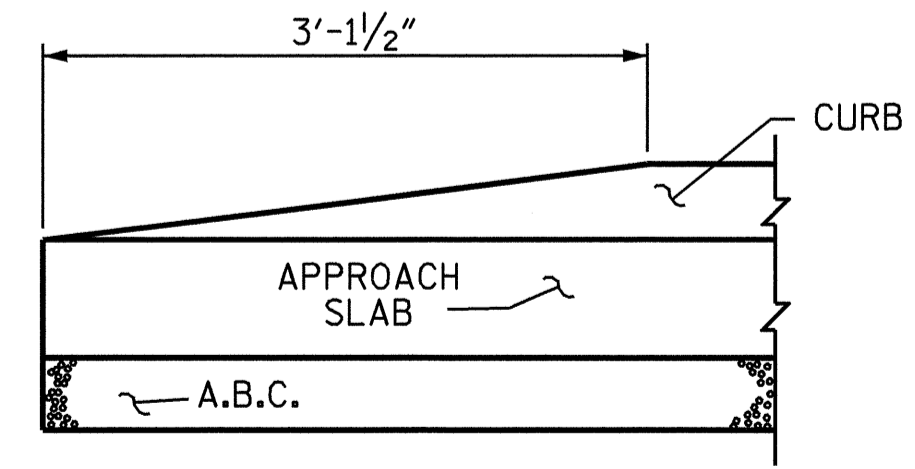


SECTION THRU SLAB

SHOWING SECTION WITHOUT CONCRETE WEARING SURFACE



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

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 SAWSAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.

WITH EVAZOTE JOINT SEAL

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 3/8".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL					
FOR ONE APPROACH SLAB (2 REQ'D)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	22'-4"	448
A2	32	#4	STR	22'-3"	476
*B1	71	#5	STR	14'-0"	1037
B2	71	#6	STR	14'-6"	1546
REINFORCING STEEL				LBS.	2022
*EPOXY COATED REINFORCING STEEL				LBS.	1485
CLASS AA CONCRETE				C. Y.	20.1

PROJECT NO. B-4038
BURKE COUNTY
 STATION: 22+62.50 -L-

SHEET 1 OF 2

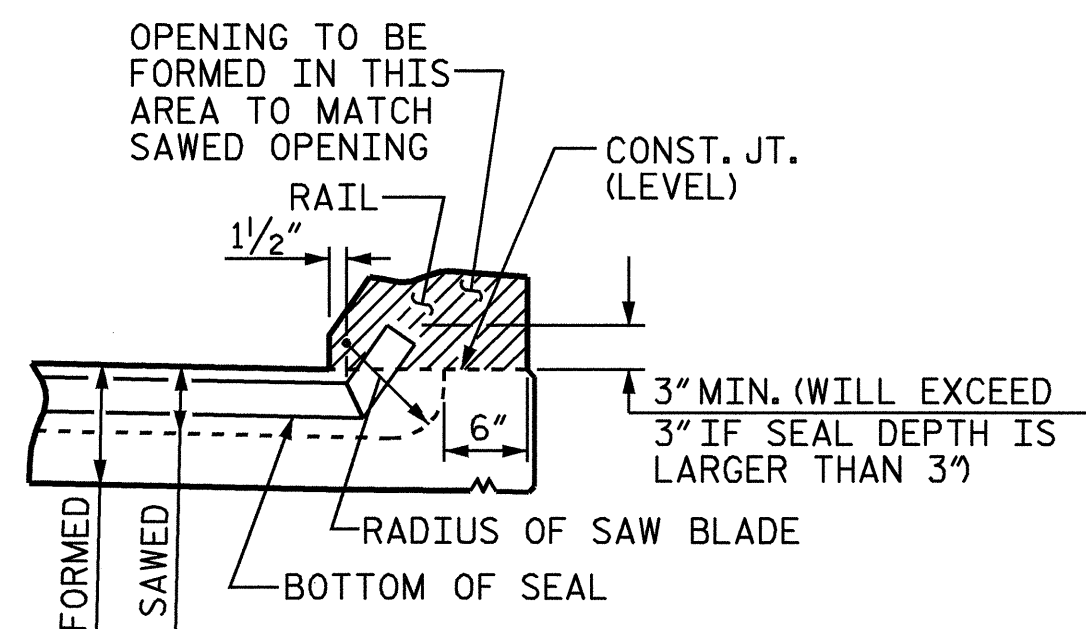
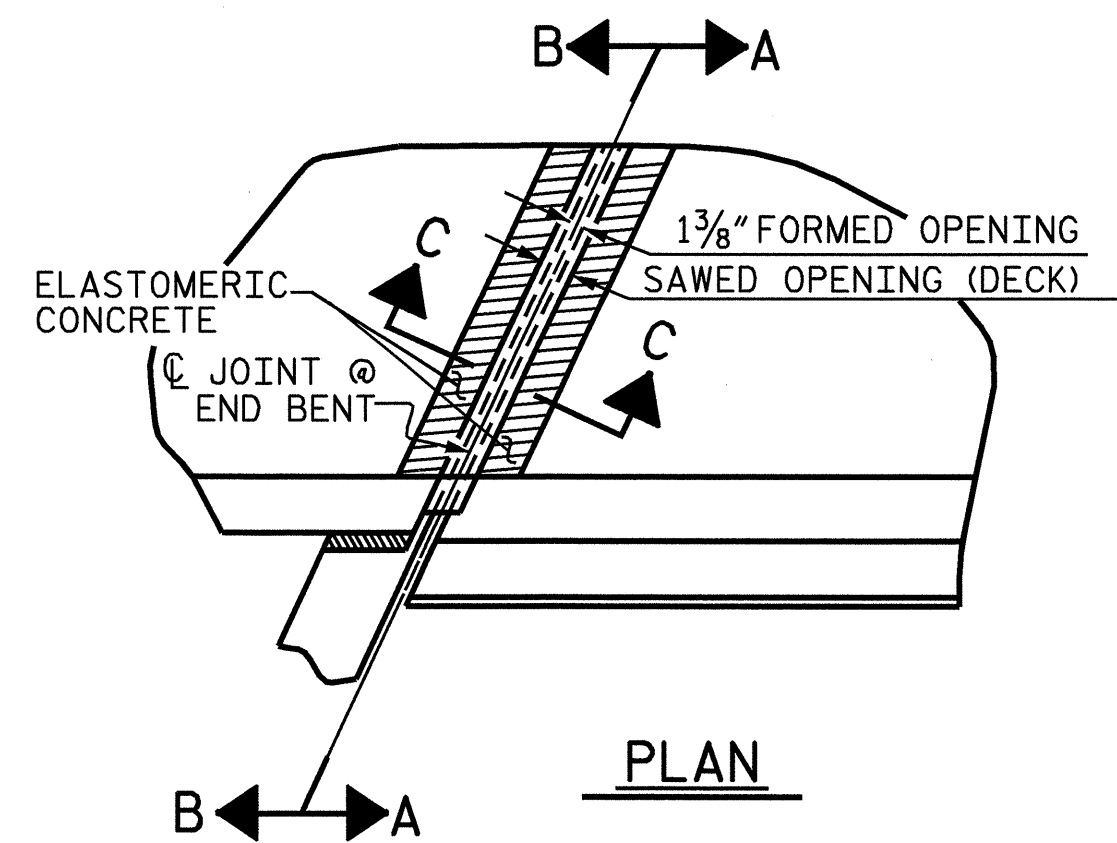
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT

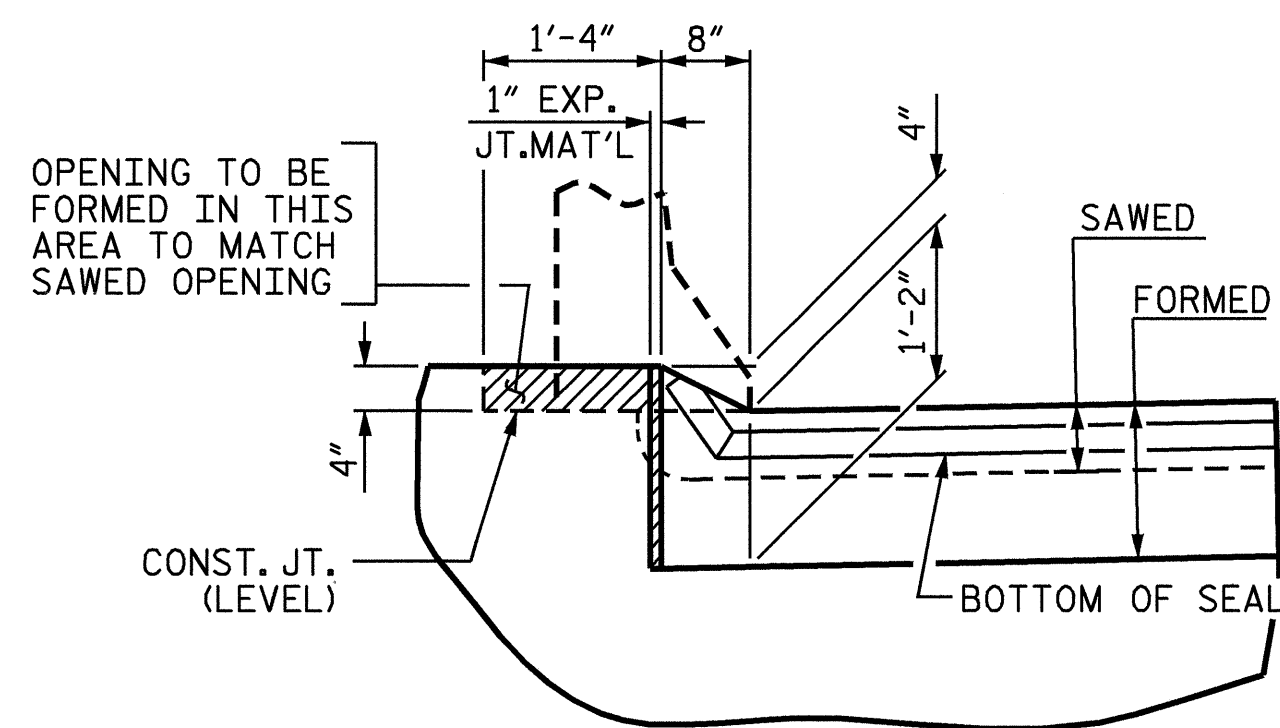
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-22
 TOTAL SHEETS 23

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



SECTION A-A

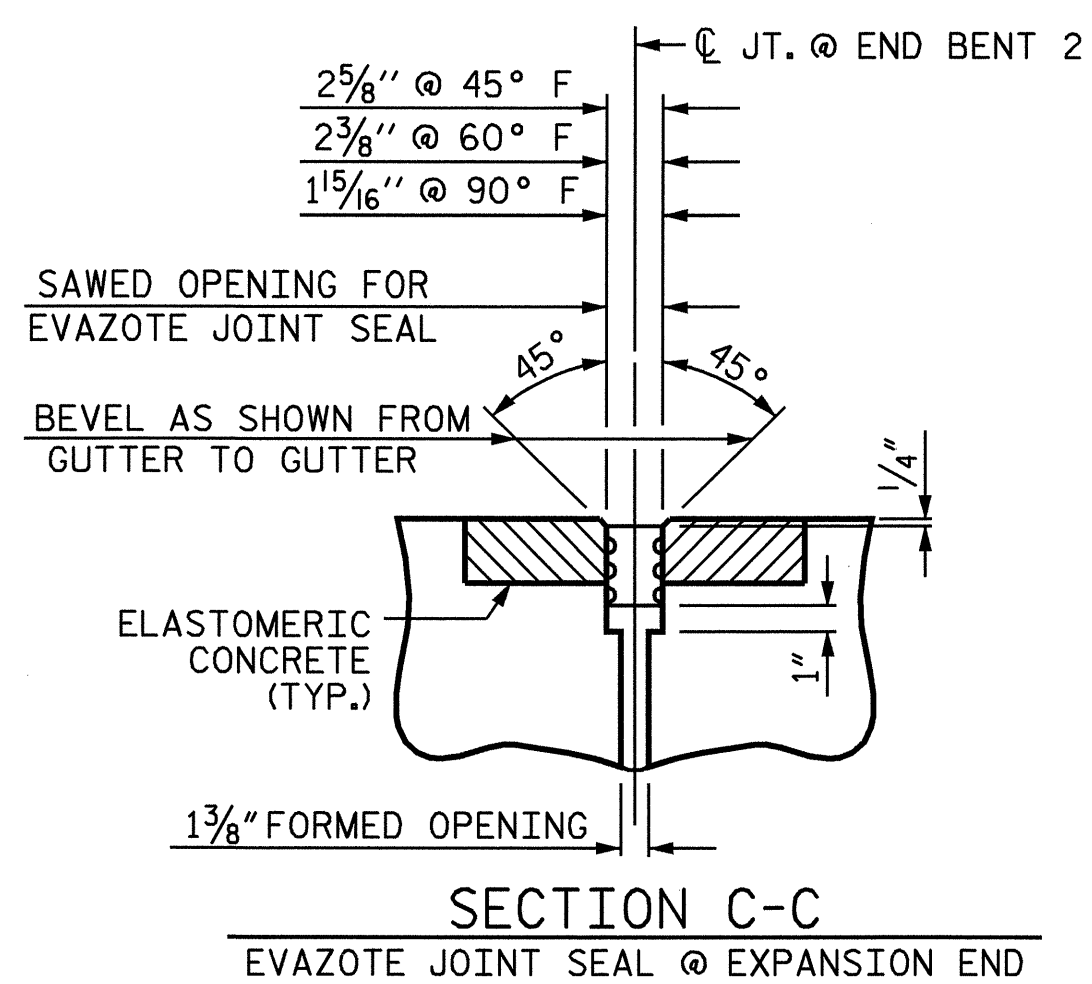


SECTION B-B

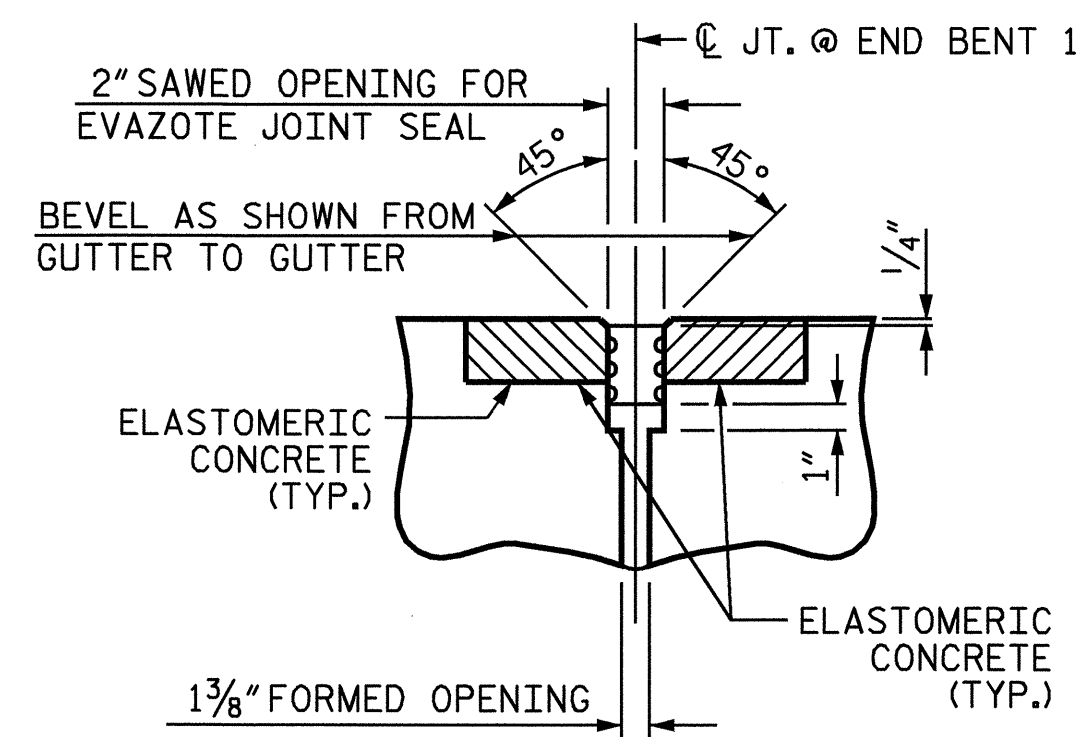
JOINT SEAL DETAILS @ END BENT

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

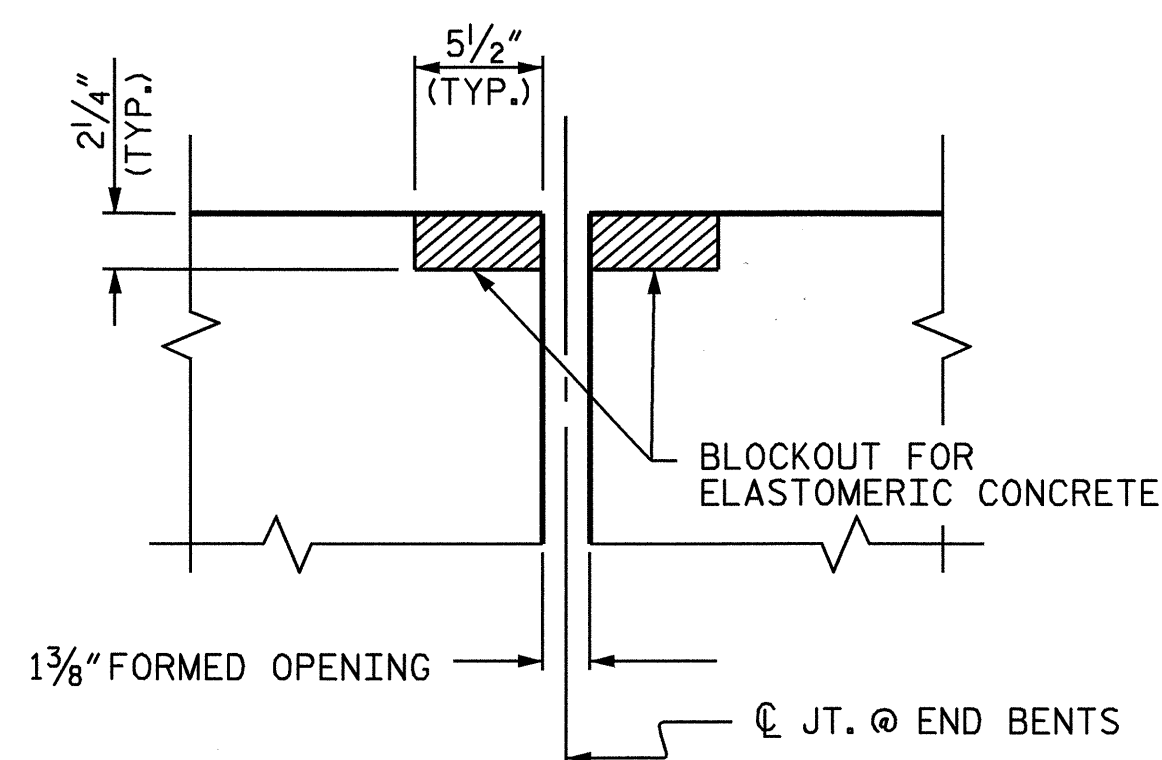
JOINT SEAL DETAILS @ END BENTS



SECTION C-C
EVAZOTE JOINT SEAL @ EXPANSION END

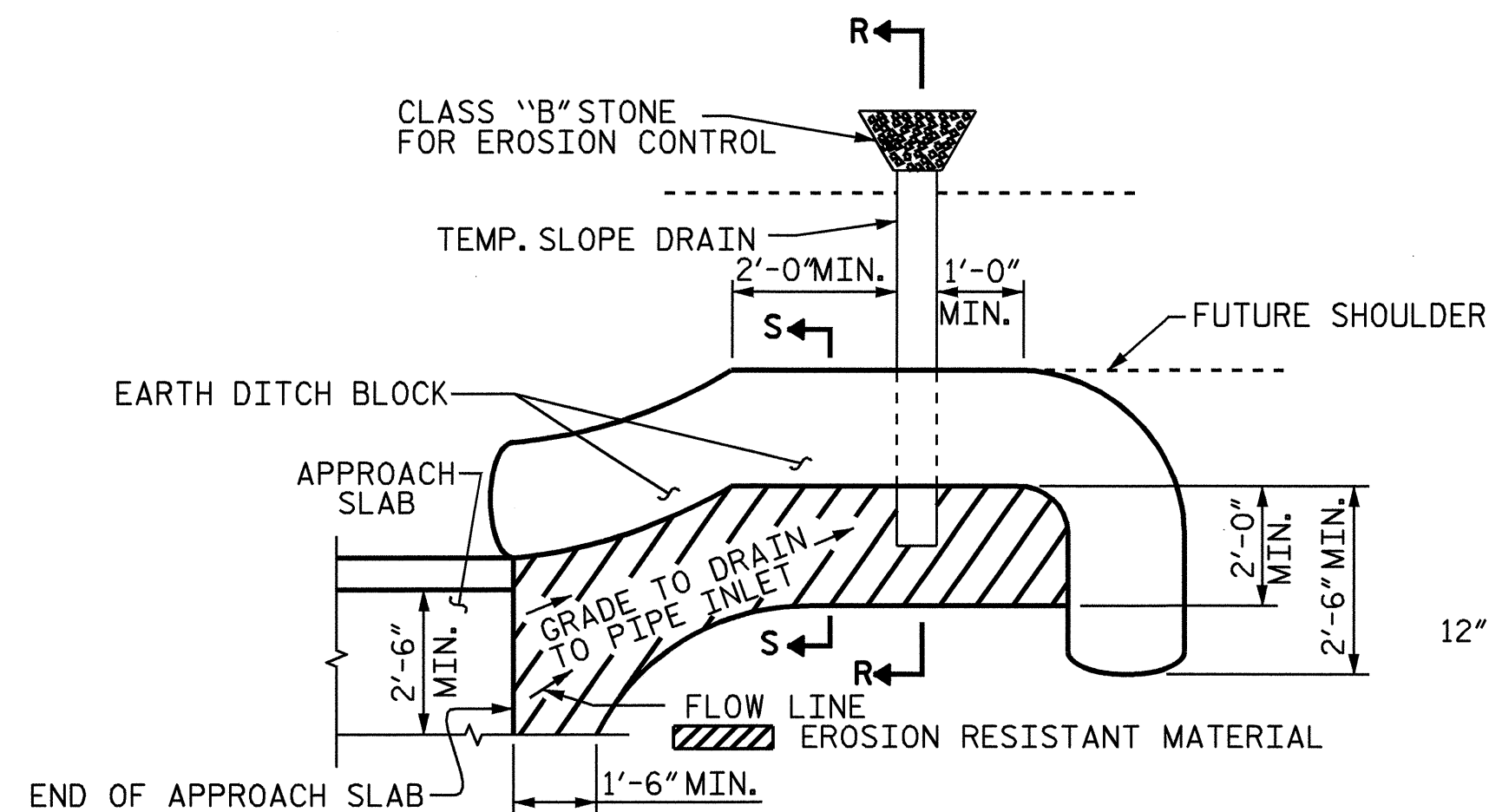


SECTION C-C
EVAZOTE JOINT SEAL @ FIXED END



SECTION OF CONCRETE

EVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)

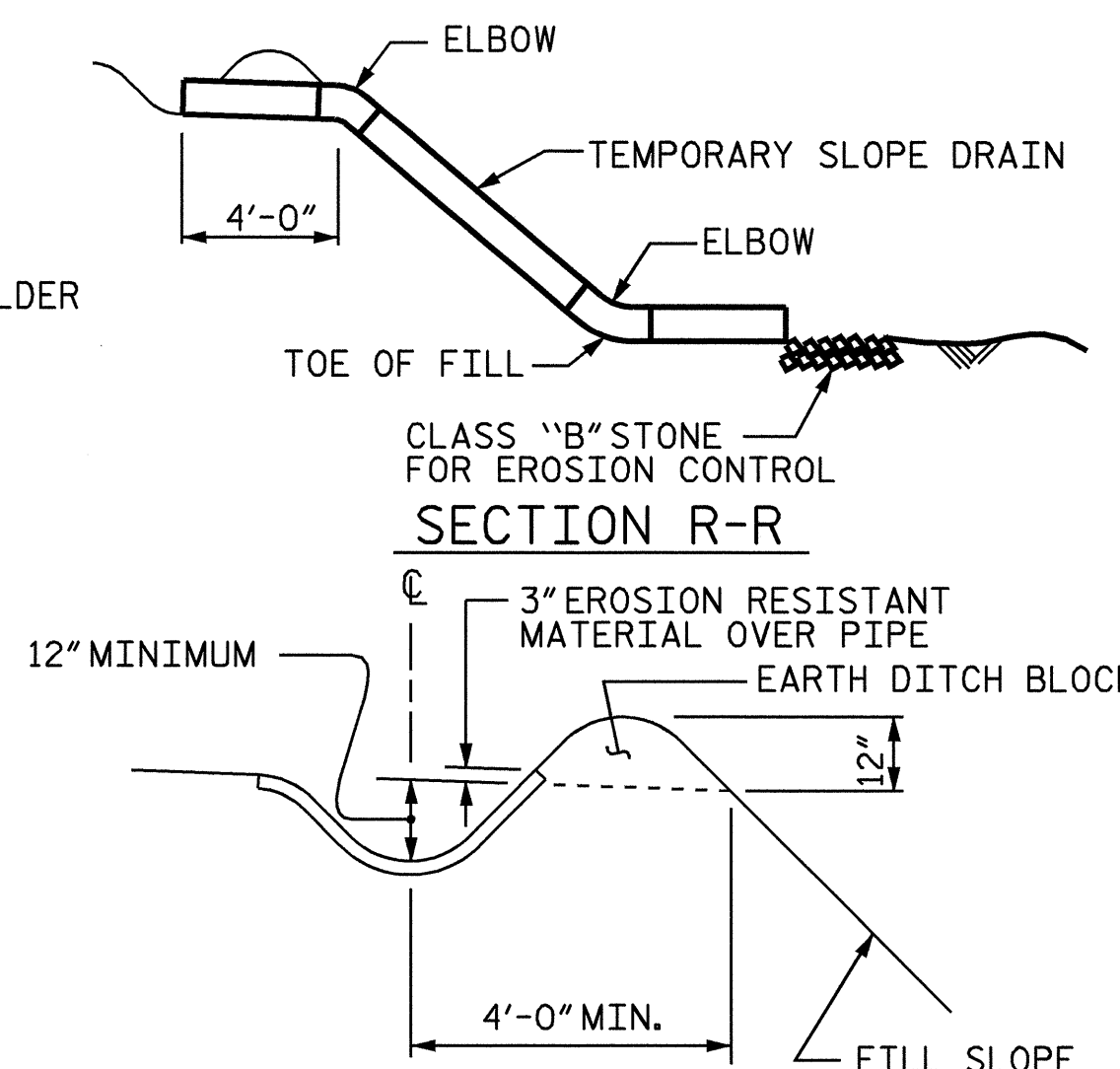


PLAN VIEW

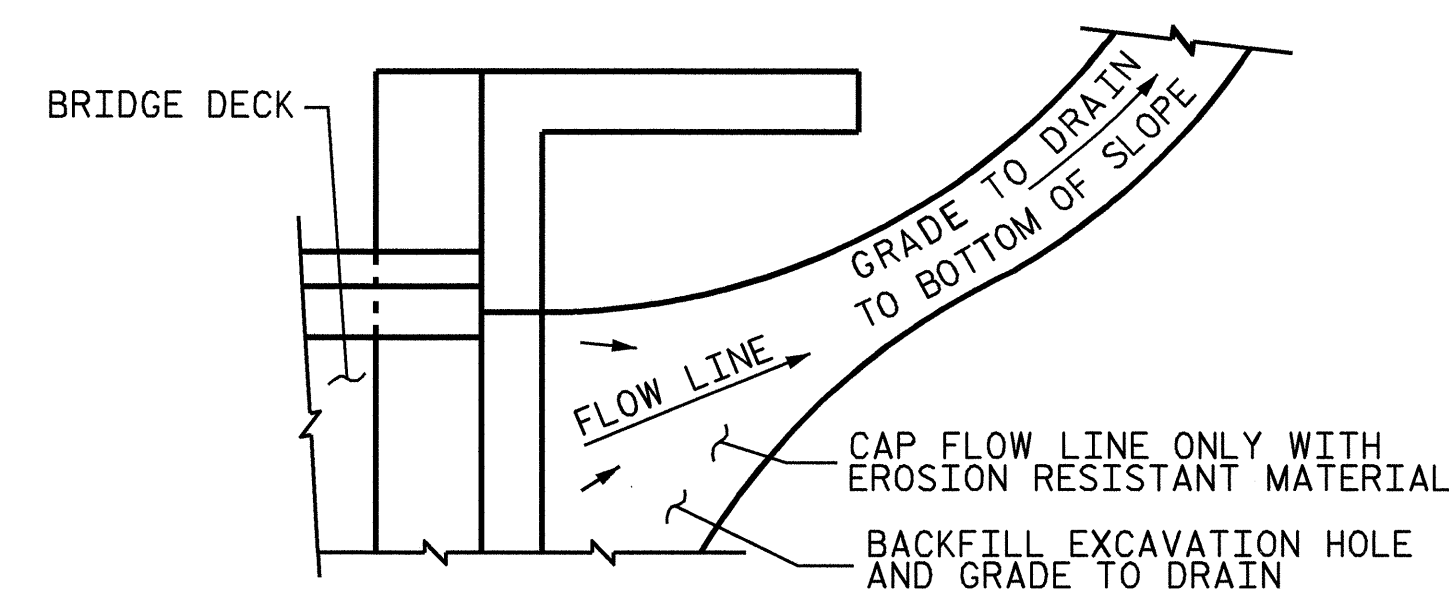
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER REQUIRED)



SECTION S-S



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.	(CU. FT.) *
1	7.1
2	7.1
TOTAL	14.2

* BASED ON THE MINIMUM BLOCKOUT SHOWN

PROJECT NO. B-4038
BURKE COUNTY
STATION: 22+62.50 -L-

SHEET 2 OF 2

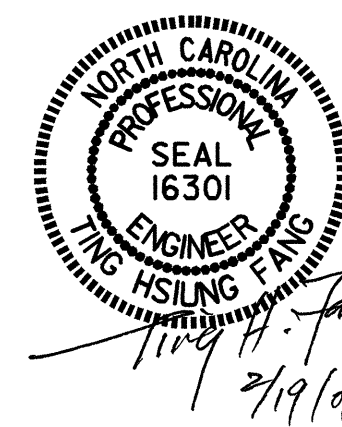
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BRIDGE APPROACH SLAB
DETAILS**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			23

STD. NO. BAS10 (SHT 5)

ASSEMBLED BY : H. B. SHAH	DATE : 06/07
CHECKED BY : T. H. FANG	DATE : 12/07
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



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. FINIS 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