BK-5111

CONTRACT # DO00075

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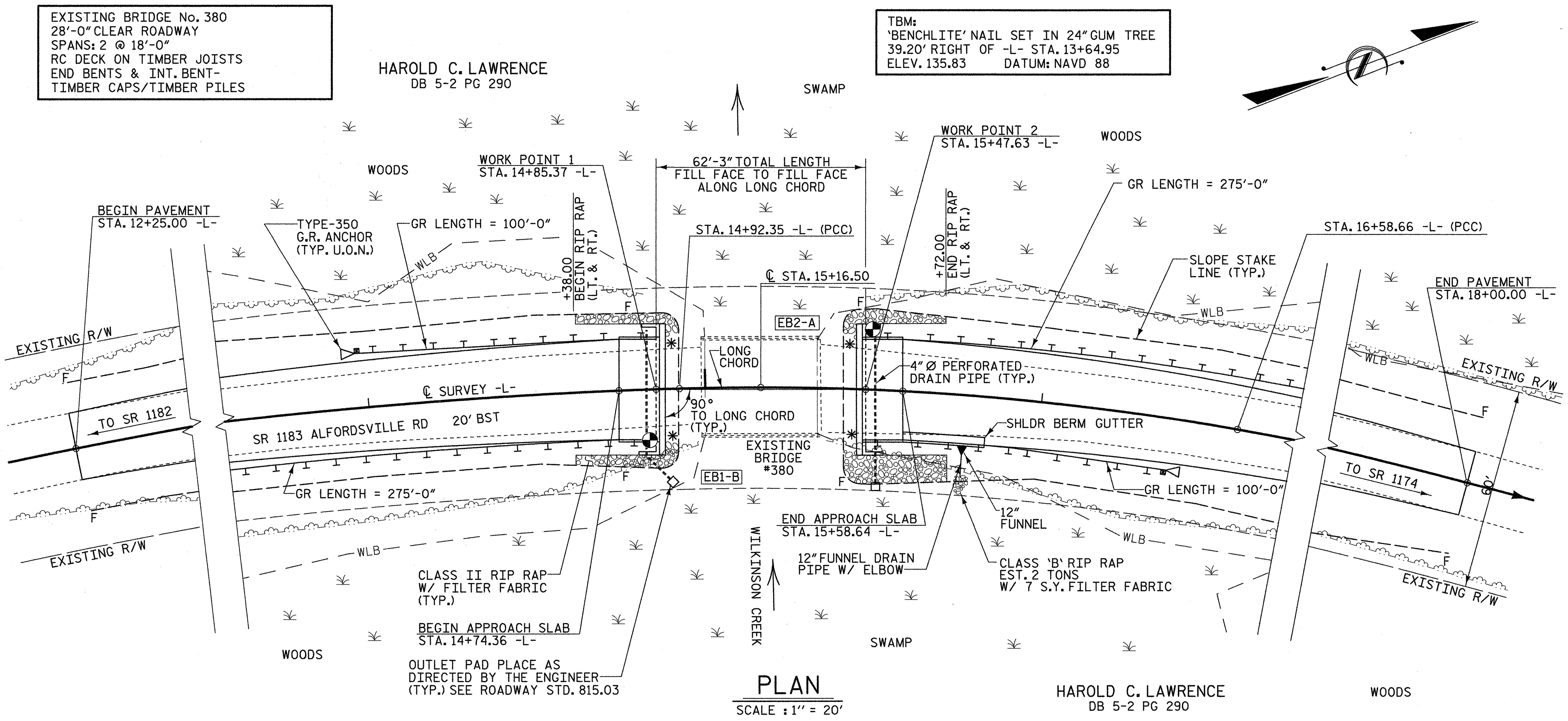


EXISTING BRIDGE No. 380
28'-0" CLEAR ROADWAY
SPANS: 2 @ 18'-0"
RC DECK ON TIMBER JOISTS
END BENTS & INT. BENT-
TIMBER CAPS/TIMBER PILES

TBM:
'BENCHLITE' NAIL SET IN 24" GUM TREE
39.20' RIGHT OF -L- STA. 13+64.95
ELEV. 135.83 DATUM: NAVD 88

PLAN

SCALE : 1" = 20'

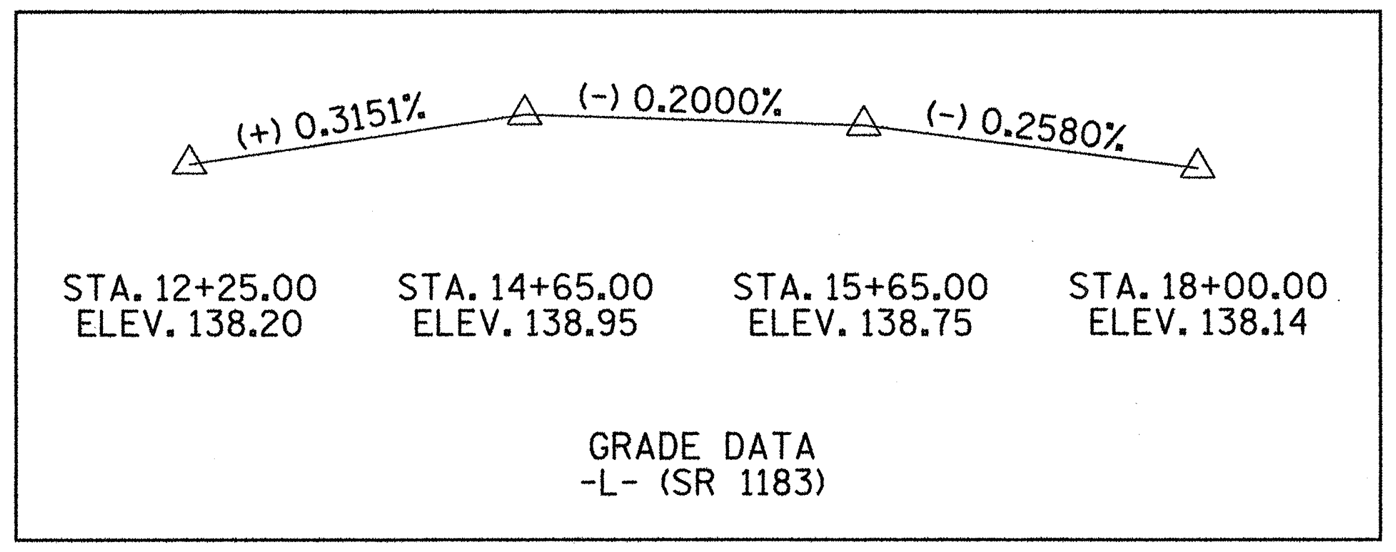
● DENOTES GEO-TECH BORE HOLE LOCATIONS.

* DENOTES B-77 GUARDRAIL CONNECTION REQ'D. SEE "GUARDRAIL ANCHORAGE FOR BARRIER RAIL" SHEET.

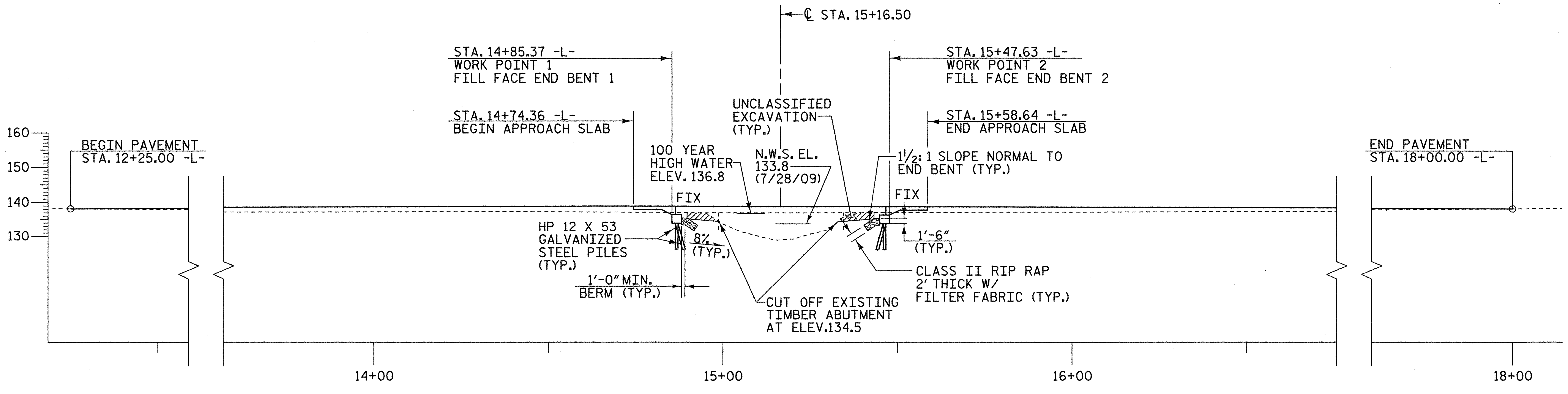
NOTE: GUARDRAIL LENGTHS AS SHOWN INCLUDE ANCHOR UNITS.

U.O.N. - UNLESS OTHERWISE NOTED

FOR PAVEMENT LAYOUT, SEE "ROADWAY DETAILS" SHEET.



GRADE DATA
-L- (SR 1183)



PROFILE ALONG ℄ SURVEY

SCALE : 1" = 20'

▨ DENOTES ROADWAY FILL TO BE REMOVED

NOTES

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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 THE 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 DIFFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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 STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC CATEGORY A.

DRIVE PILES AT END BENTS No.1 AND 2 TO A REQUIRED BEARING CAPACITY OF 90 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 NO. 1 AND 2 IS 45 TONS PER PILE.

GALVANIZED STEEL PILES ARE REQUIRED AT END BENTS NO. 1 AND 2 IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

ADT = 800 FOR YEAR 1999

ROADWAY APPROACH EMBANKMENT SHALL BE WIDENED AS NECESSARY FOR GUARDRAIL INSTALLATION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFEY, SEE SPECIAL PROVISIONS.

THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF EACH CLASS OF RIP RAP WHICH HAS BEEN INCORPORATED INTO THE COMPLETED AND ACCEPTED WORK. THE RIP RAP WILL BE MEASURED BY BEING WEIGHED IN TRUCKS ON CERTIFIED PLATFORM SCALES OR OTHER CERTIFIED WEIGHING DEVICES. THE QUANTITY OF RIP RAP WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON:

PLAIN RIP RAP CLASS II (2'-0" THICK)

END BENT No. 1	40 TONS
END BENT No. 2	60 TONS
TOTAL	100 TONS

HYDROGRAPHIC DATA:

DESIGN DISCHARGE -	400 CFS
FREQUENCY OF DESIGN FLOOD -	25 YEAR
DESIGN HIGH WATER ELEVATION -	136.3
DRAINAGE AREA -	8 SQ. MI.
BASIC DISCHARGE (Q 100) -	600 CFS
BASIC HIGH WATER ELEVATION -	136.8

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

L. KEVIN AUSTIN
19661
8/11/10

PLANS PREPARED BY:

MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
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WWW.MULKEYINC.COM

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1183
OVER WILKINSON CREEK
BETWEEN SR 1182 & SR 1174

29'-10" CLEAR ROADWAY - 90° SKEW

REVISIONS

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

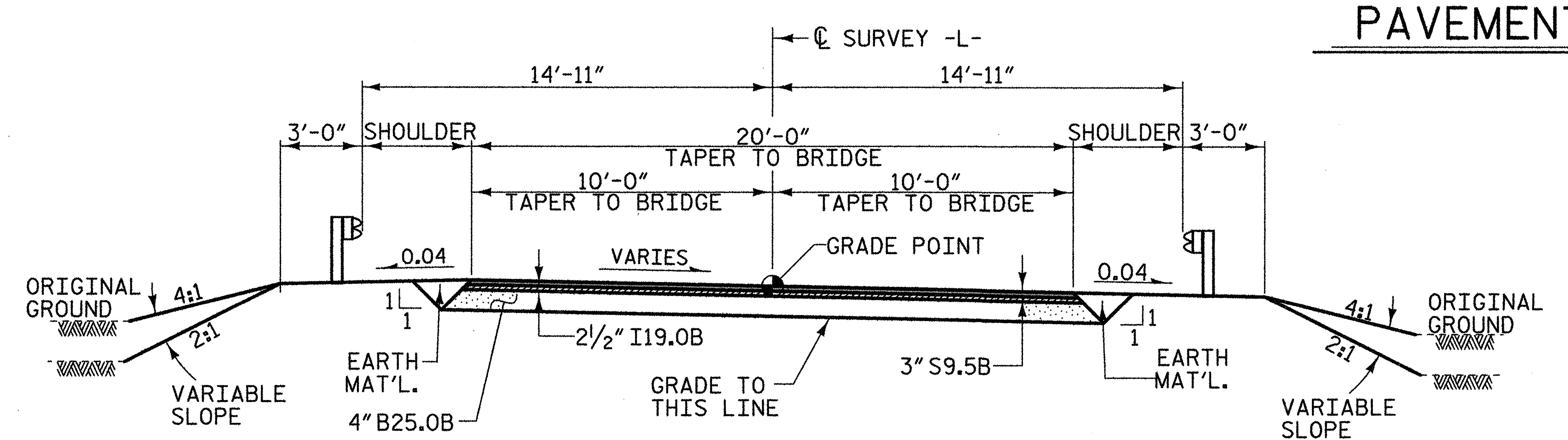
SHEET NO. 1
TOTAL SHEETS 22

DRAWN BY : W. B. ALLEN DATE : 1/10
CHECKED BY : L. K. AUSTIN DATE : 4/10

PAVEMENT LAYOUT DETAIL

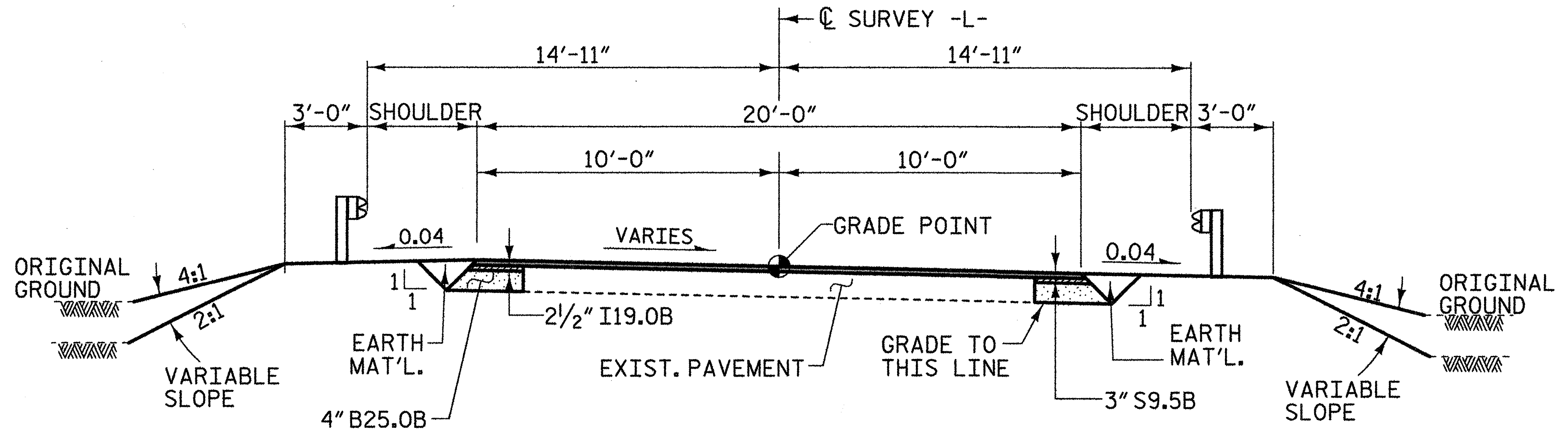
SCALE : 1" = 20'

HORIZONTAL CURVE DATA		
PI STA. 12+77.55	PI STA. 15+75.80	PI STA. 17+66.36
Δ = 15° 33′ 03.0″ (RT)	Δ = 11° 47′ 35.2″ (RT)	Δ = 7° 21′ 34.4″ (RT)
D = 3° 35′ 50.6″	D = 7° 05′ 27.5″	D = 3° 25′ 17.3″
L = 432.28	L = 166.31	L = 215.10
T = 217.48	T = 83.45	T = 107.70
R = 1,592.71	R = 808.01	R = 1,674.59
		BACK = N 30°59′ 43.6″E
		AHEAD = N 38°21′ 18.0″E



FULL DEPTH PAVEMENT

FROM -L- STA. 13+00 TO BEGIN BRIDGE
FROM END BRIDGE TO -L- STA. 17+00



WIDENING PAVEMENT

FROM -L- STA. 12+25 TO -L- STA. 13+00
FROM -L- STA. 17+00 TO -L- STA. 18+00

TYPICAL ROADWAY SECTION

WITHIN CONSTRUCTION LIMITS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "MA6016-1"
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 316054.854(ft) EASTING: 1908919.906(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS:
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "MA6016-1" TO -L- STATION 16+58.66 IS
S 37°05′19″ W 1111.26′
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

L. KEVIN AUSTIN 19661
L. Kevin Austin 8/11/10

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ROADWAY DETAILS

29'-10" CLEAR ROADWAY - 90° SKEW

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

SHEET NO. 2
TOTAL SHEETS 22

DRAWN BY : W. B. ALLEN DATE : 2/10
CHECKED BY : L. K. AUSTIN DATE : 4/10

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8/23/99

PROJ. REFERENCE NO.	SHEET NO.
BK-5110	3

8/10/2010
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	BK-5110	4

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	BK-5110	5

8/23/99

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0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
BK-5110	6

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	BK-5110	7

8/23/99

8/10/2010
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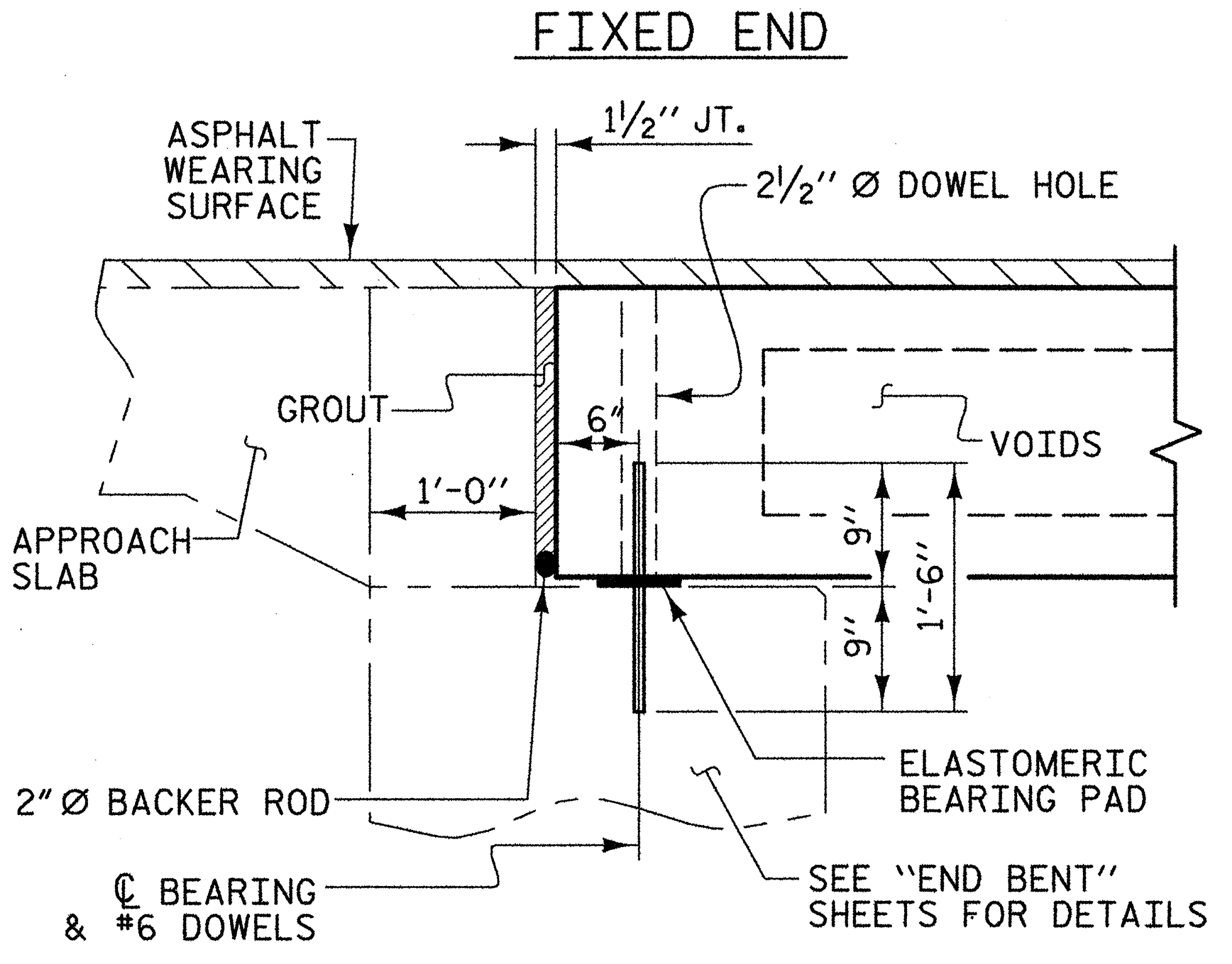
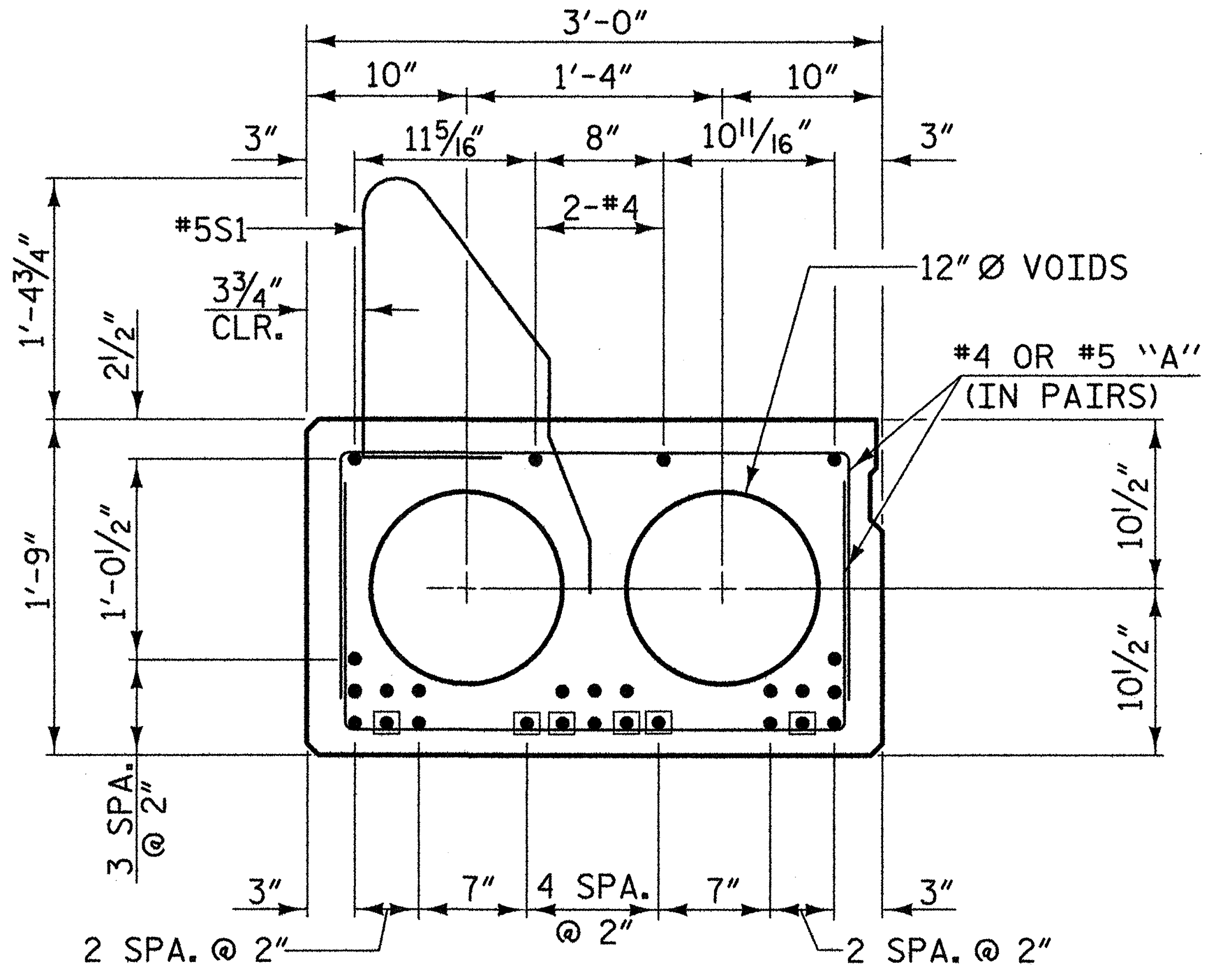


SECTION AT END BENT

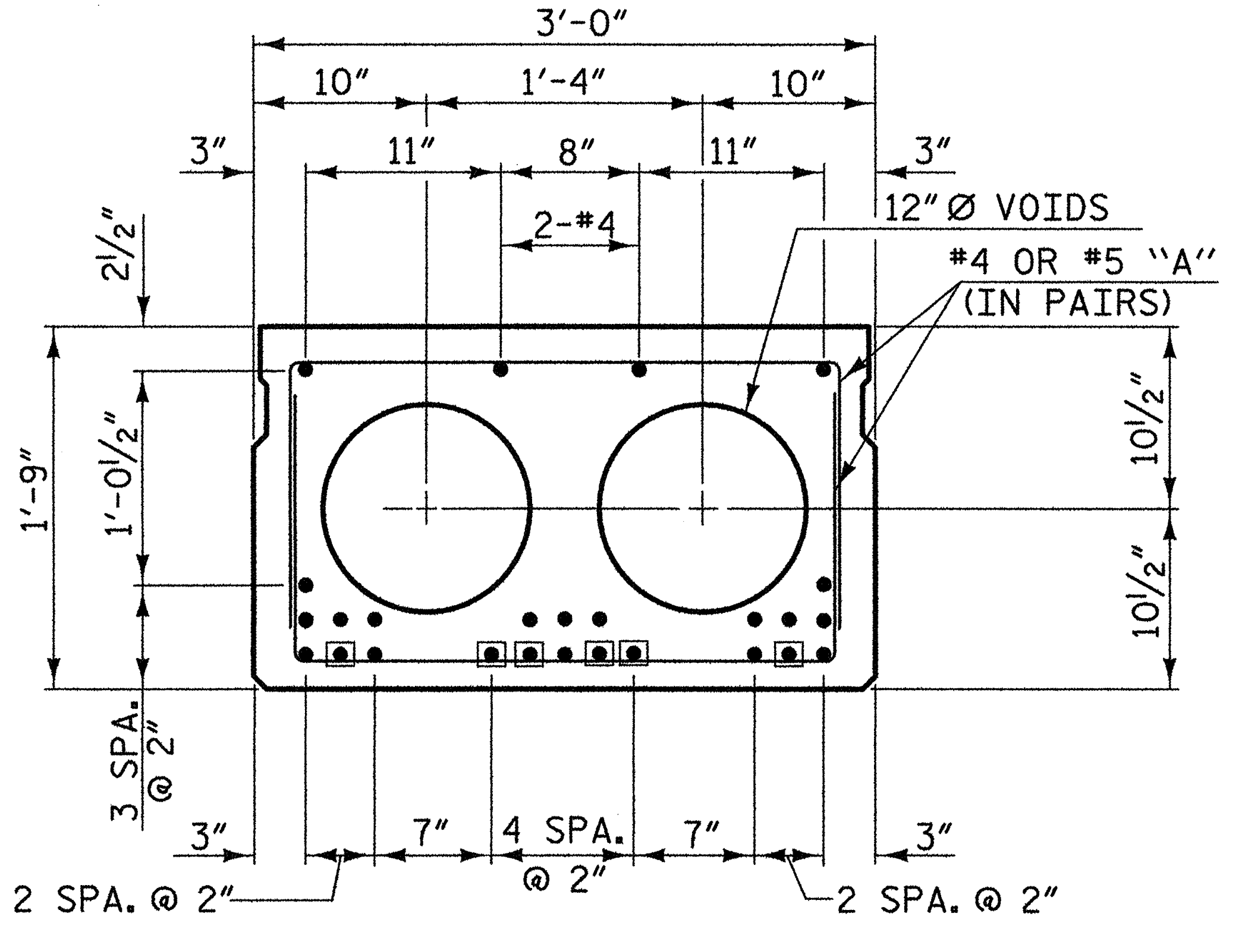


60′ SPAN

24 - 0.6″ Ø L.R. STRANDS
EXTERIOR SLAB SECTIONS

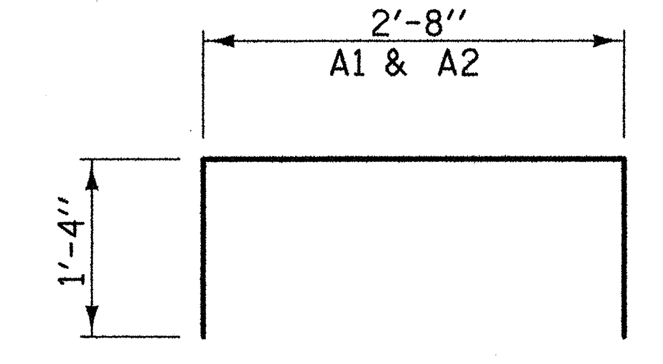
▣ DENOTES SHEATHED STRAND
(SEE SHEATH CHART)

NOTE:
FOR LOCATION OF #5S1
SEE "TIE LOCATION FOR #5S1" DETAIL ON "PRESTRESSED CORED SLAB, 60 SPAN" SHEET 2 OF 3.



60′ SPAN

24- 0.6″ Ø L.R. STRANDS
INTERIOR SLAB SECTIONS



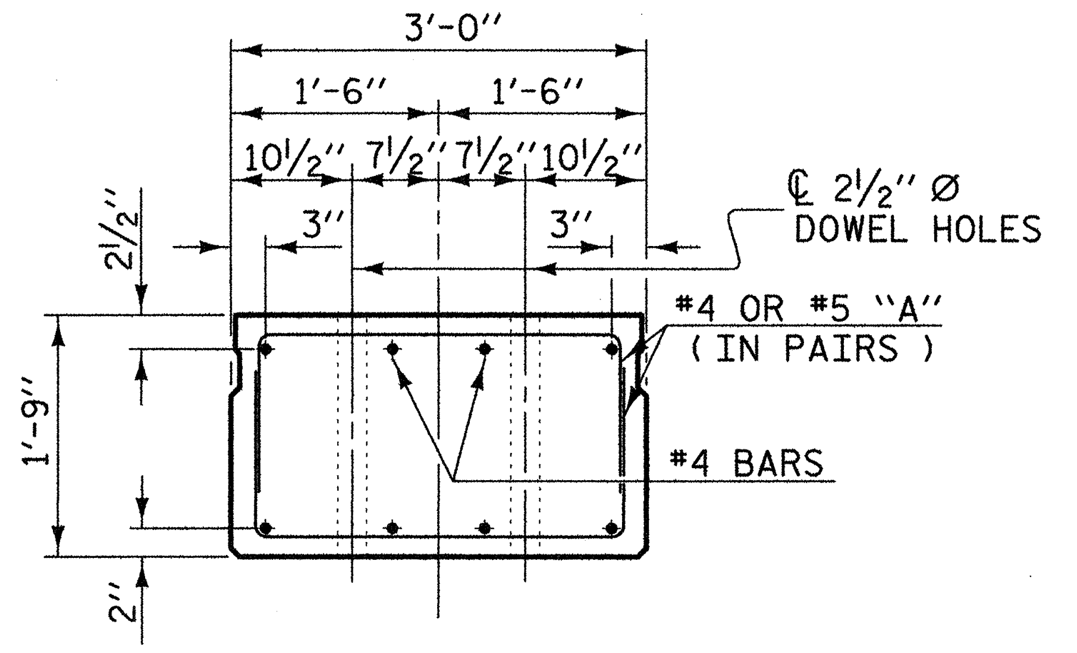
REINFORCING BAR TYPES

BAR DIMENSIONS ARE OUT TO OUT

SHEATH CHART

SPAN LENGTH	NUMBER OF SHEATHED STRANDS PER EXTERIOR SLAB SECTIONS	NUMBER OF SHEATHED STRANDS PER INTERIOR SLAB SECTIONS
60′	6	6

BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 5′-0″ FROM END OF SLAB



SLAB END ELEVATION

THE 2½″ Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT, SEE SPECIAL PROVISIONS.

GENERAL NOTES

ASSUMED LIVE LOAD = HS 25 OR ALTERNATE LOADING.

CONCRETE = f′c - 7500psi (MIN. COMP. STRENGTH @ 28 DAYS).
f′ci - 6000psi (MIN. COMP. STRENGTH @ TRANSFER OF STRESSING FORCE).

ALL PRESTRESSING STRANDS SHALL MEET THE REQUIREMENTS OF ASTM A416.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE HIGH STRENGTH CABLES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

SIZE	TYPE	AREA	ULTIMATE STR.	APPLIED FORCE
0.6″ Ø	LOW RELAX.	0.217 SQ. IN. PER CABLE	58,600 LBS.	43,950 LBS. PER CABLE

STRUCTURAL STEEL ITEMS SHALL BE OF A GRADE CONFORMING TO EITHER ASTM A36 OR A373, EXCEPT HIGH STRENGTH BOLTS. HIGH STRENGTH BOLTS SHALL BE ASTM A325. ALL STRUCTURAL STEEL SHALL BE GALVANIZED AS PER THE SPECIFICATION.

ALL MATERIAL AND WORKMANSHIP SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OF THE NC DEPARTMENT OF TRANSPORTATION DATED JULY 2006 AND WITH THE SPECIAL PROVISIONS.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF SUPERSTRUCTURE.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS. THE JOINT SHALL BE FILLED WITH GROUT.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

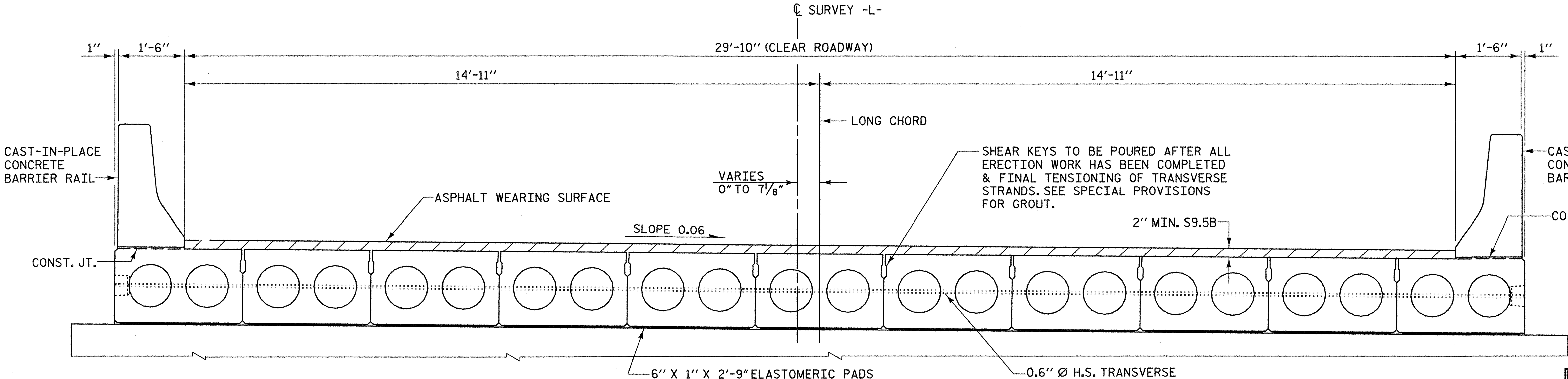
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾″.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

NO DECK DRAINS ALLOWED.



TYPICAL SECTION

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380 SHEET 1 OF 3

L. Kevin Austin 8/11/10
1966 L. KEVIN AUSTIN

PLANS PREPARED BY:
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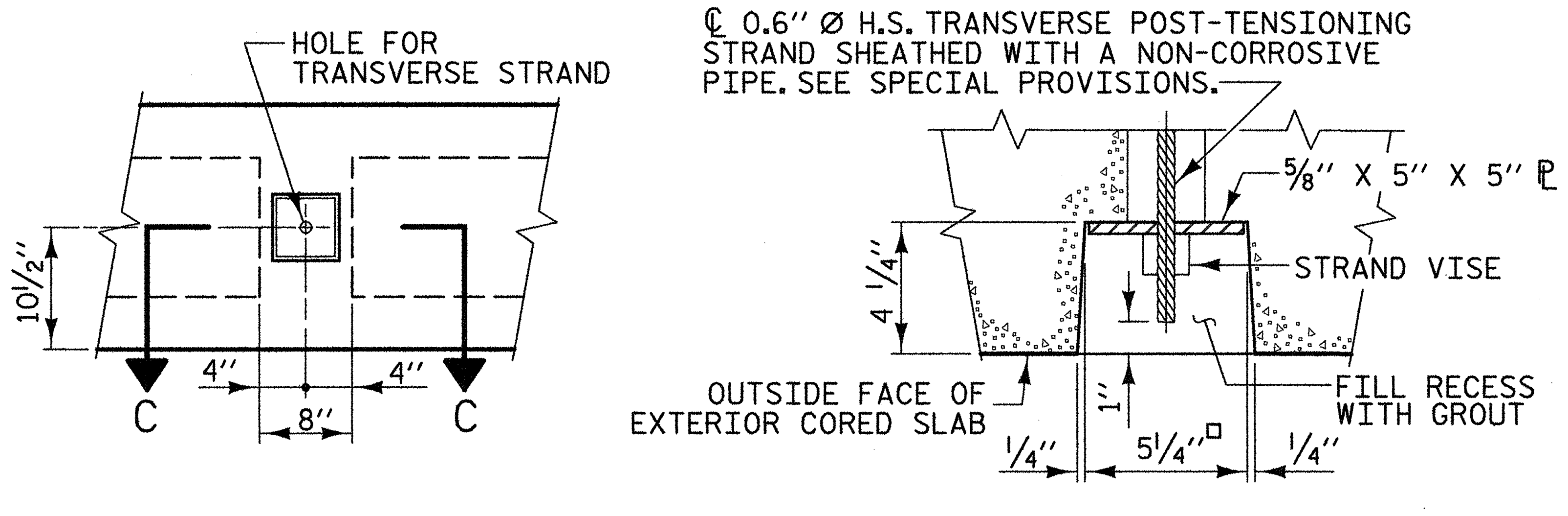
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

PRESTRESSED CORED SLAB 60′ SPAN

29′-10″ CLEAR ROADWAY - 90° SKEW

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

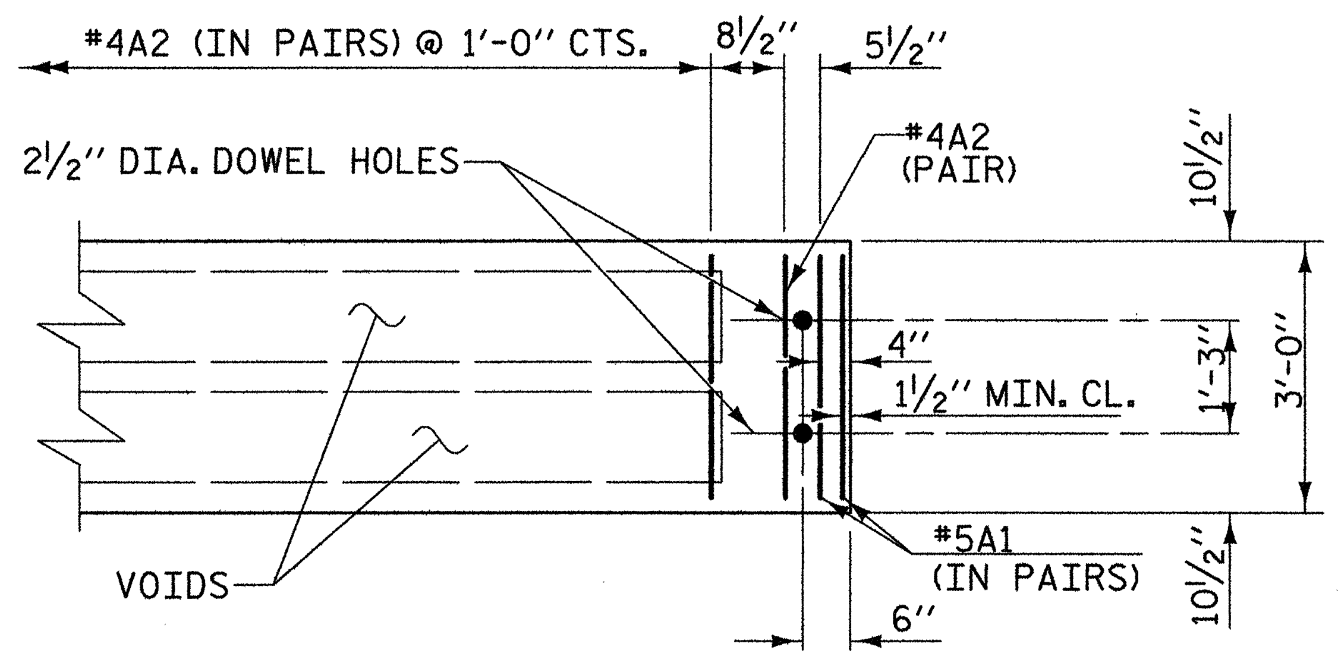
DRAWN BY : W. B. ALLEN DATE : 2/10
CHECKED BY : L. K. AUSTIN DATE : 8/10



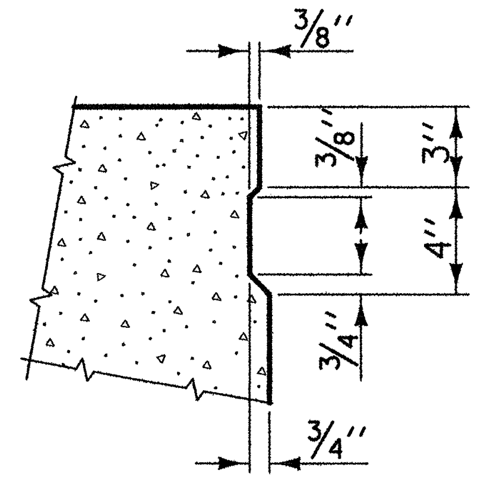
ELEVATION

SECTION C-C

DETAIL A
GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLAB



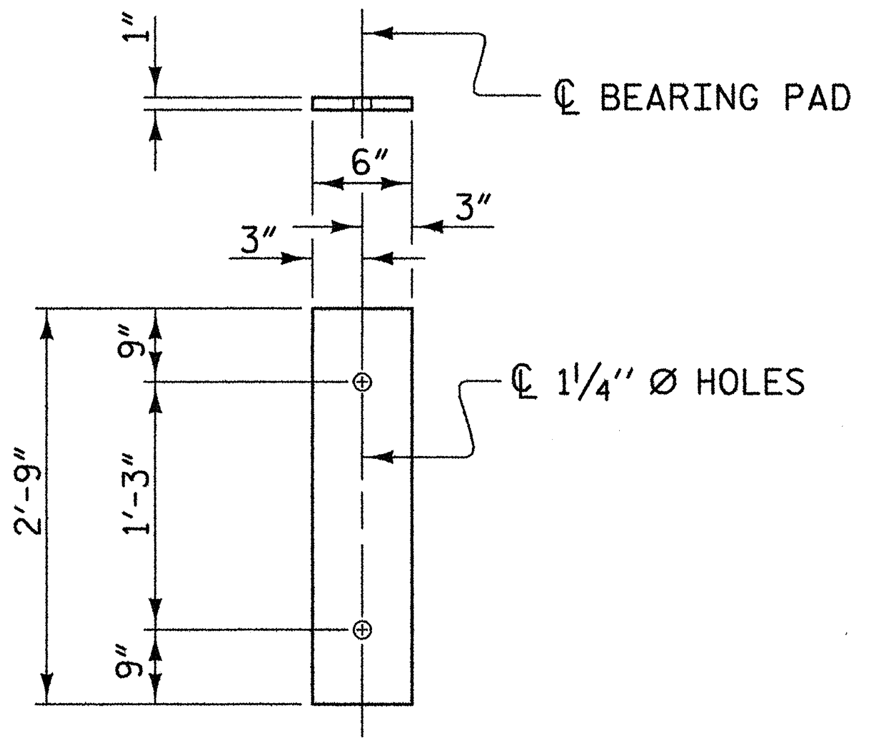
PART PLAN - SLAB SECTION



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE OF EXTERIOR CORED SLAB

EXTERIOR & INTERIOR SLAB UNIT	60'
CAMBER (SLAB UNIT ALONE IN PLACE)	4" (UP)
DEFLECTION (SUPERIMPOSED DEAD LOAD)	✳ $^{11}/_{16}$" (DOWN)
FINAL DEFLECTION	3$^{5}/_{16}$" (UP)
✳ INCLUDES FUTURE WEARING SURFACE	



FIXED
(TYPE I - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

NOTE: ELASTOMER HARDNESS SHALL BE 50 DUROMETERS.

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

PRESTRESSED CORED SLAB
60' SPAN

29'-10" CLEAR ROADWAY - 90° SKEW

L. KEVIN AUSTIN
19661
8/11/10

PLANS PREPARED BY:
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PO BOX 33127
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	9
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : W. B. ALLEN DATE : 2/10
CHECKED BY : L. K. AUSTIN DATE : 8/10

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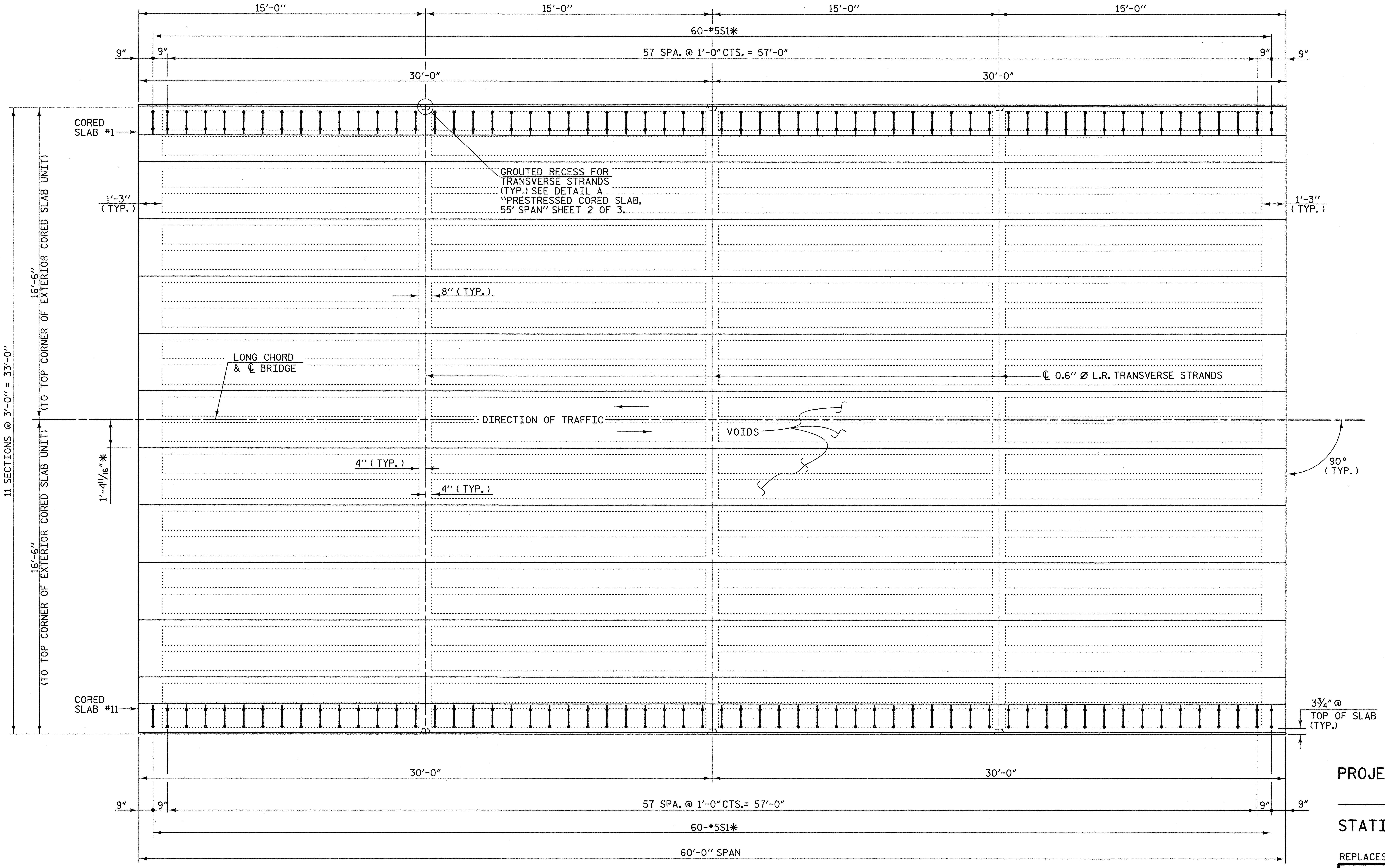

PLAN OF SPAN

✱ DISTANCE FROM THE
LONG CHORD TO
THE BOTTOM EDGE
OF CORED SLAB #6

PROJECT NO. 42562

ROBESON COUNTY

STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380 SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

PRESTRESSED CORED SLAB
60' SPAN

29'-10" CLEAR ROADWAY - 90°SKEW

SEAL 19661
L. KEVIN AUSTIN
L. Kevin Austin
8/11/10

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

DRAWN BY : W. B. ALLEN DATE : 2/10
CHECKED BY : L. K. AUSTIN DATE : 8/10

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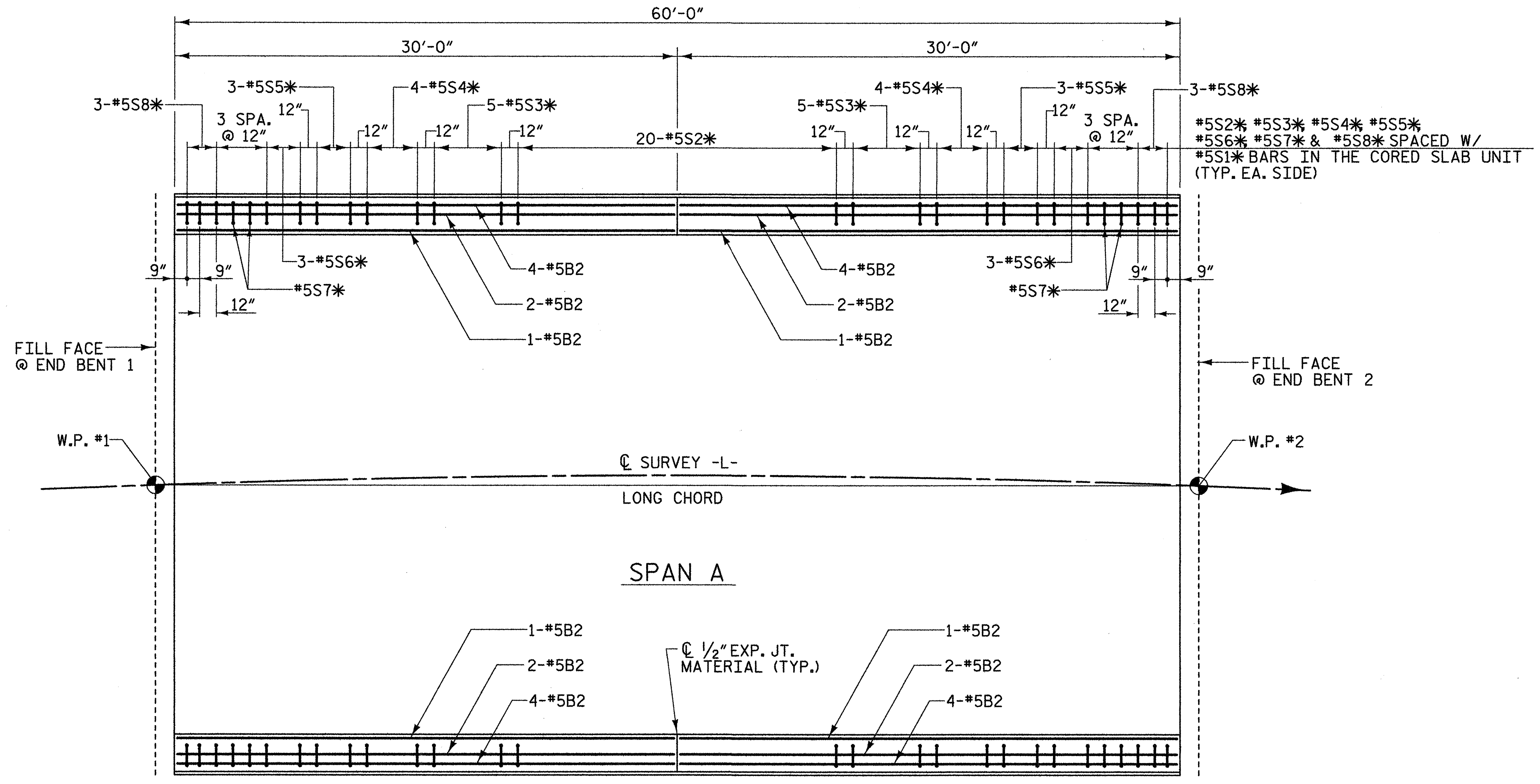


PLAN

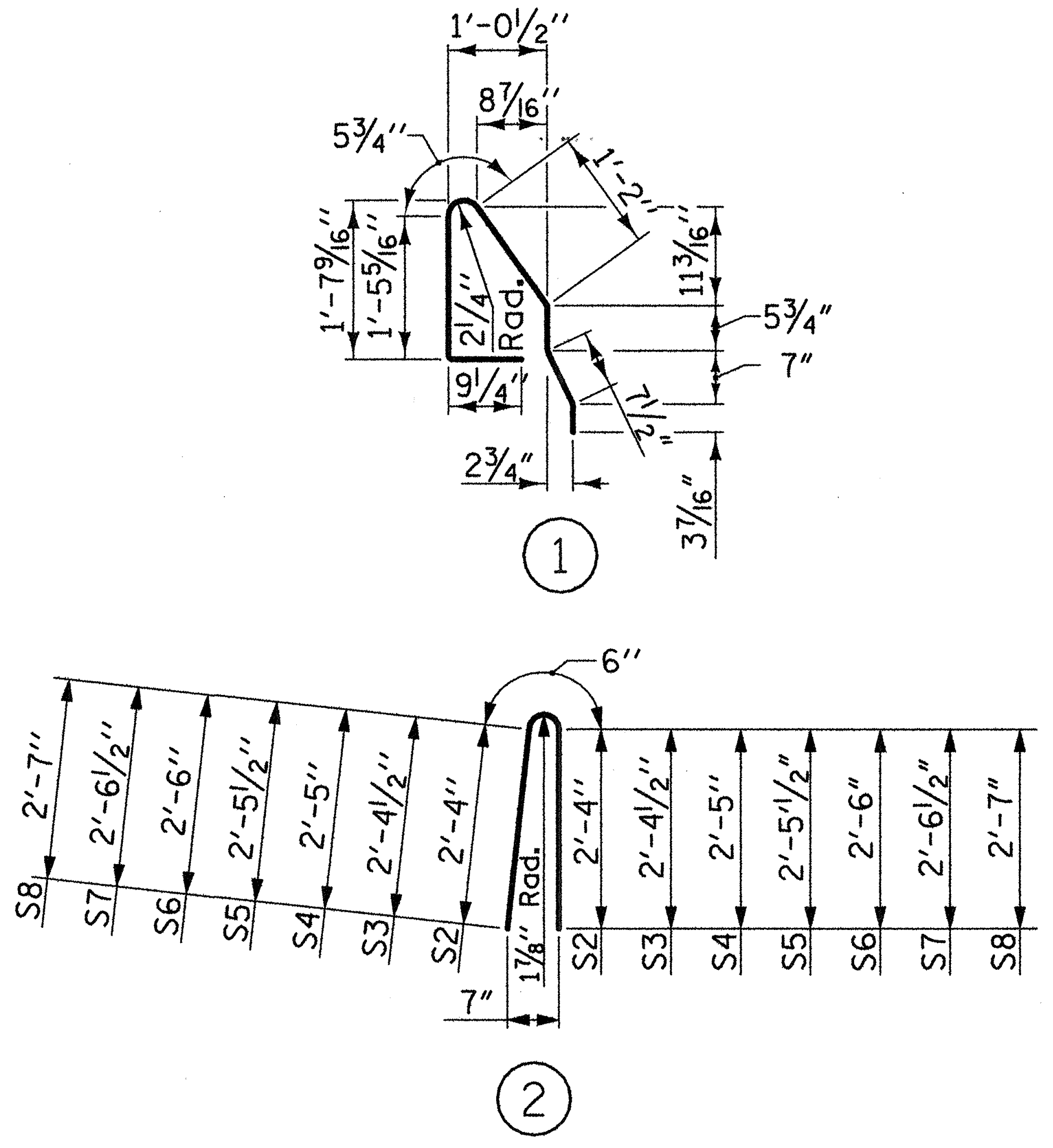
✻ INDICATES EPOXY COATED REINFORCING STEEL.

FOR SPACING AND LOCATION OF THE #5S1 BARS, SEE "PRESTRESSED CORED SLAB, 60' SPAN", SHEET 3 OF 3.

#5 "S" BARS MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE ½" EXPANSION JOINT MATERIAL IN THE BARRIER RAIL AND GROUTED RECESS FOR TRANSVERSE STRANDS IN THE CORED SLABS.

THE HEIGHT OF THE BARRIER RAIL VARIES. THE TOP OF THE RAIL IS TO FOLLOW THE PROFILE OF THE GUTTER LINE.

BAR TYPES



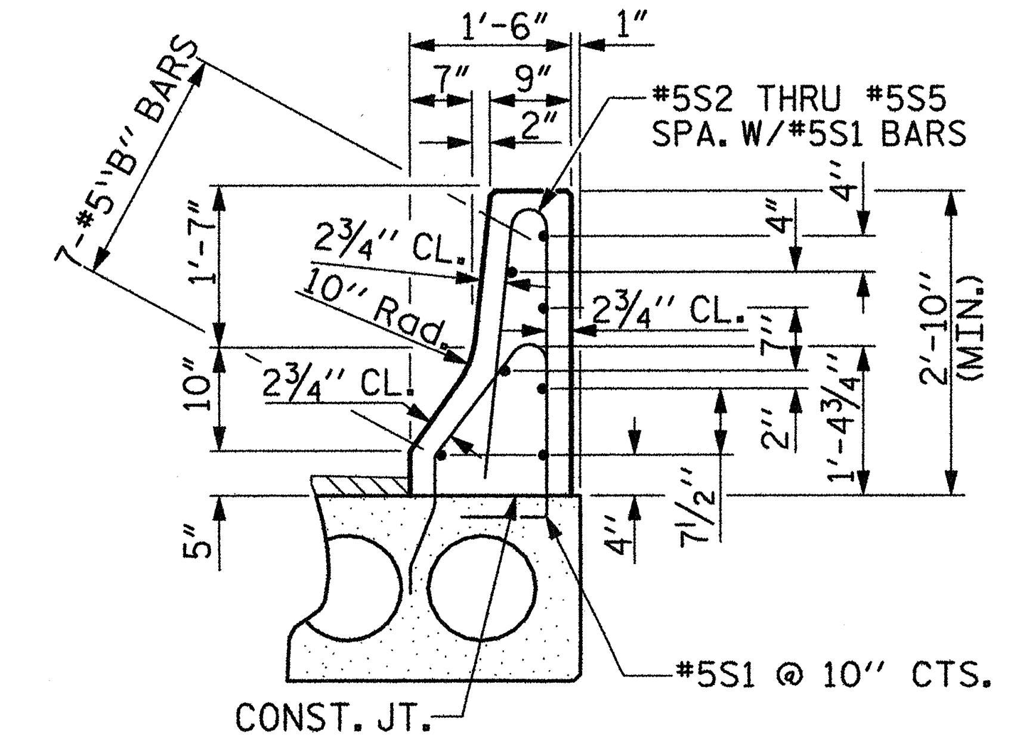
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

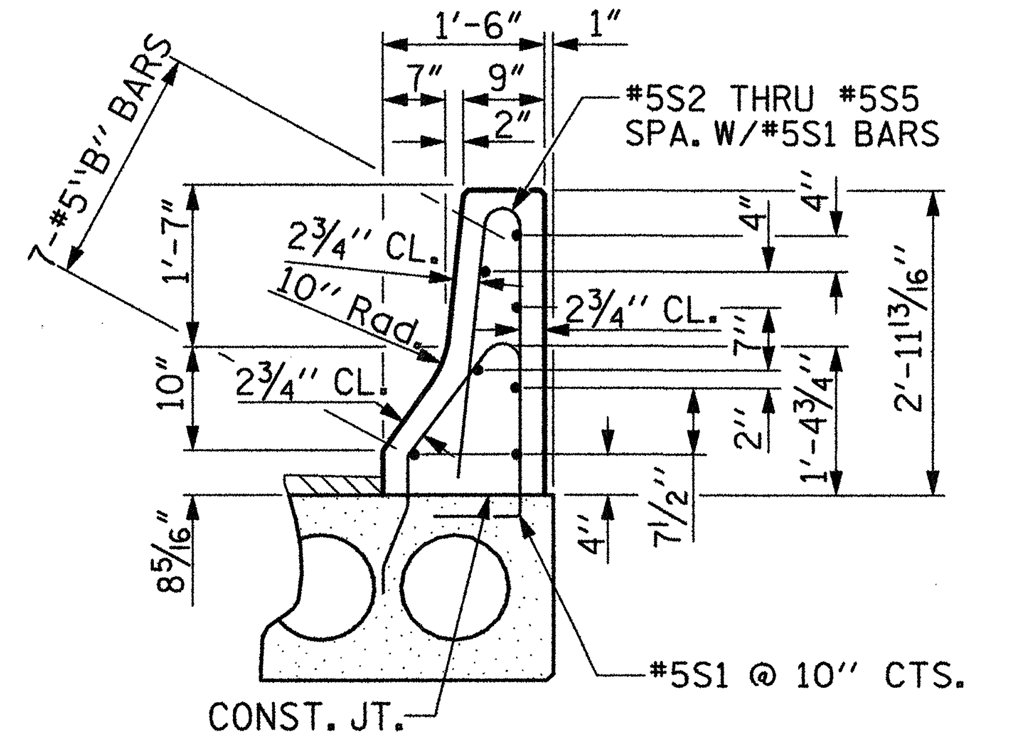
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✻B2	28	#5	STR	29'-7"	864
✻S1	120	#5	1	5'-3"	657
✻S2	40	#5	2	5'-2"	216
✻S3	20	#5	2	5'-3"	110
✻S4	16	#5	2	5'-4"	89
✻S5	12	#5	2	5'-5"	68
✻S6	12	#5	2	5'-6"	69
✻S7	8	#5	2	5'-7"	47
✻S8	12	#5	2	5'-8"	71

✻ EPOXY COATED REINFORCING STEEL LBS. = 2191

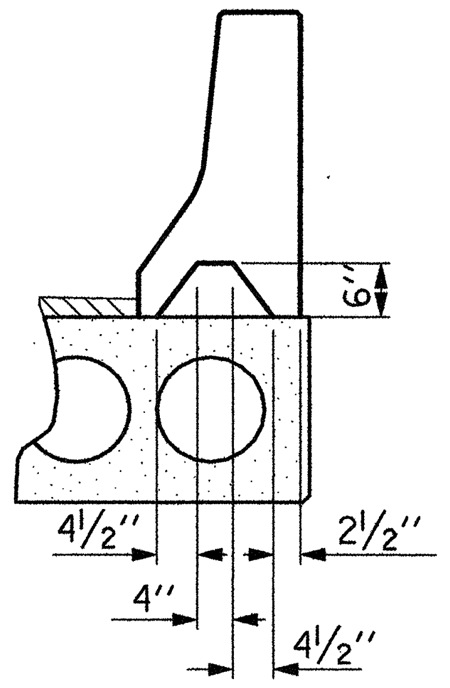
CLASS AA CONCRETE CU. YDS. = 14.1



SECTION THRU RAIL @ MID-SPAN

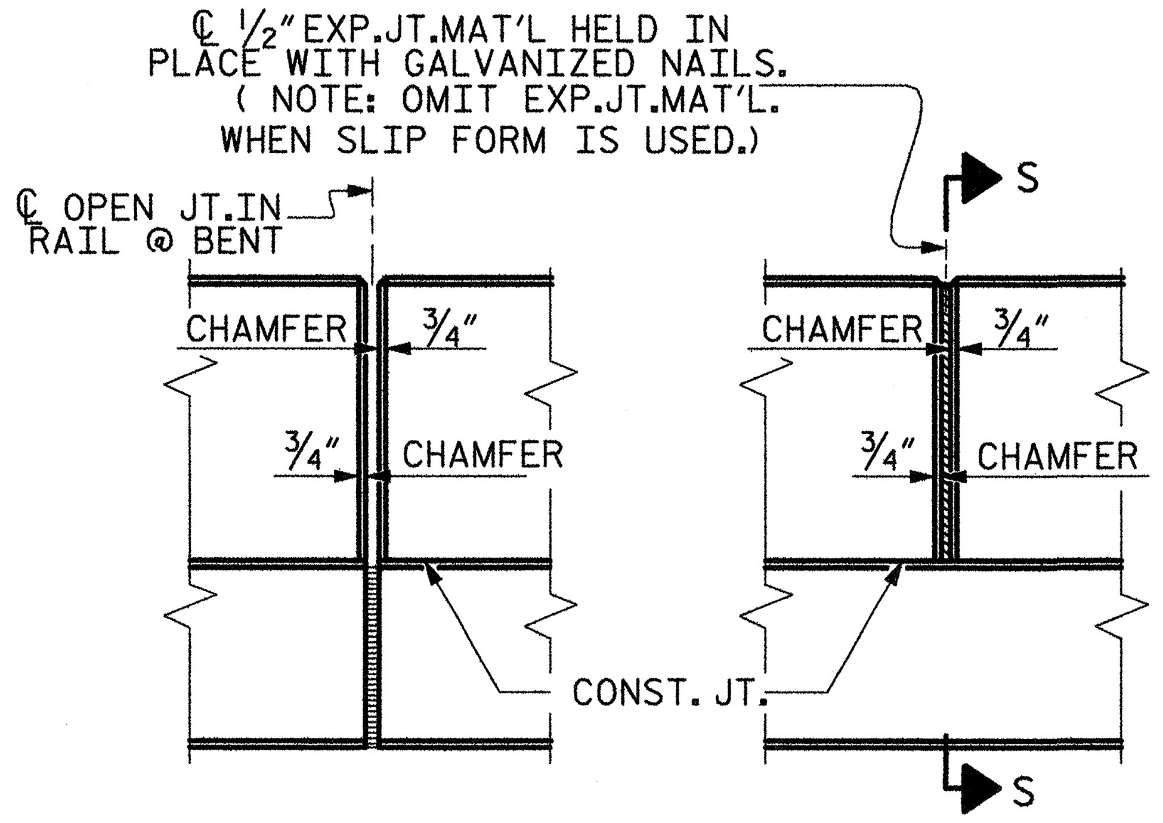


SECTION THRU RAIL @ ℄ BEARING



SECTION S-S

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



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

DRAWN BY : W. B. ALLEN DATE : 2/10
CHECKED BY : L. K. AUSTIN DATE : 8/10

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

L. Kevin Austin
19661
L. KEVIN AUSTIN
8/11/10

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(919) 851-1918 (FAX)
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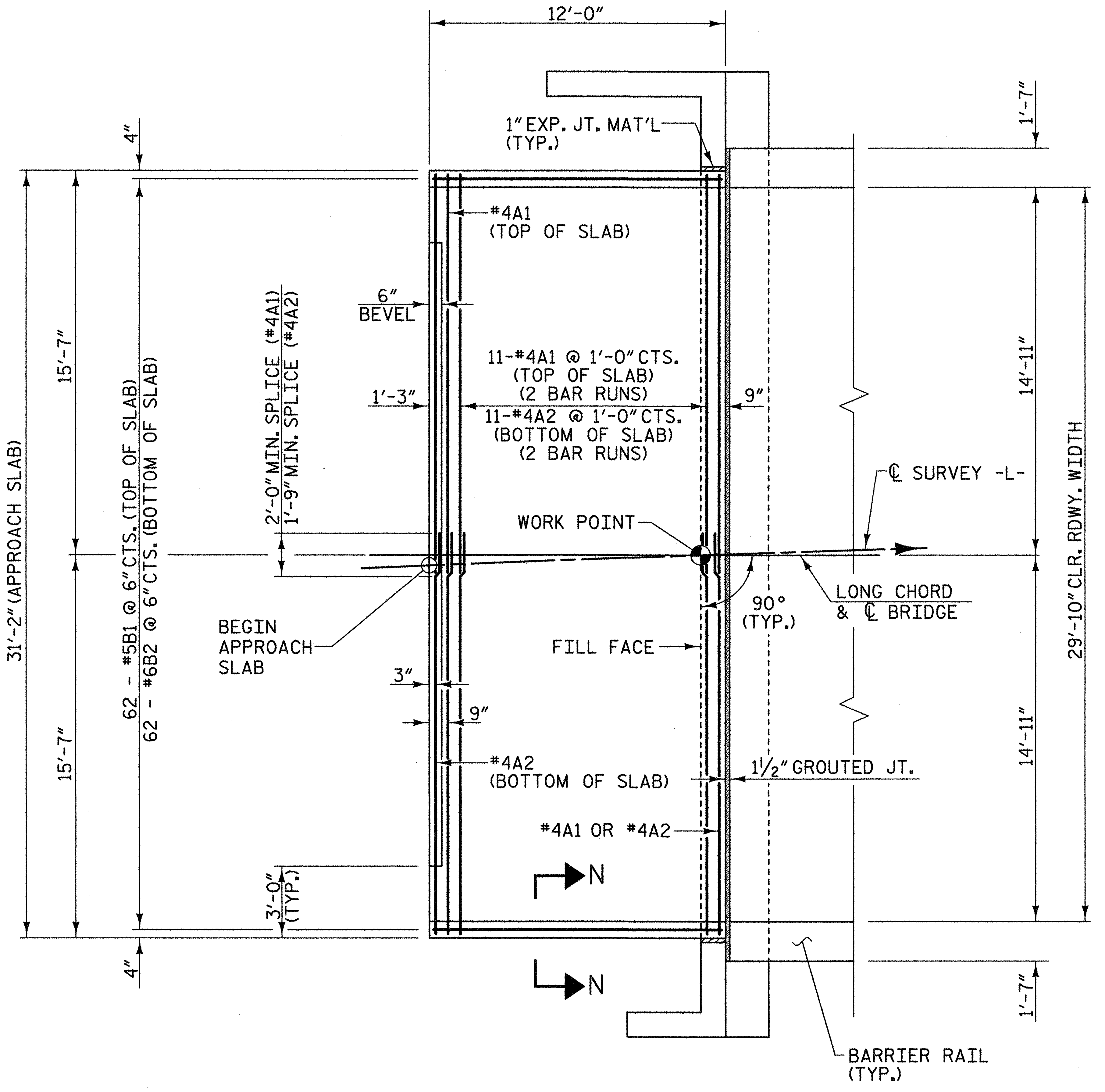
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE BARRIER RAIL

29'-10" CLEAR ROADWAY - 90° SKEW

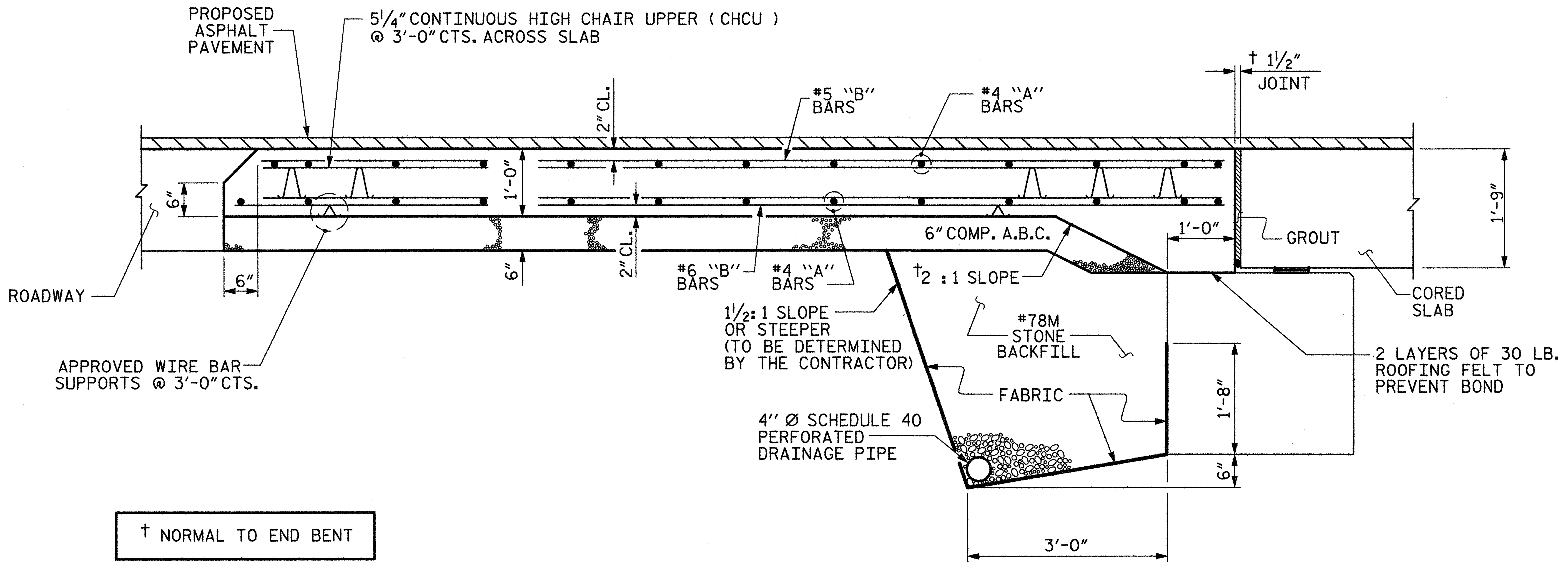
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. 11
TOTAL SHEETS 22



PLAN OF APPROACH SLAB

END BENT 1 APPROACH SLAB SHOWN
END BENT 2 APPROACH SLAB SIMILAR



SECTION THRU SLAB

ASSEMBLED BY :	W. B. ALLEN	DATE :	2/10
CHECKED BY :	L. K. AUSTIN	DATE :	8/10

DRAWN BY : KMM 3-08
CHECKED BY : GM 3-08

NOTES

REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SHALL BE INCLUDED IN THE LUMP SUM CONTRACT BID PRICE FOR BRIDGE APPROACH SLABS.

FABRIC SHALL BE TYPE 1 ENGINEERING FABRIC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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.

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

FOR JOINT DETAILS, SEE "PRESTRESSED CORED SLAB, 60' SPAN" SHEET.

THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

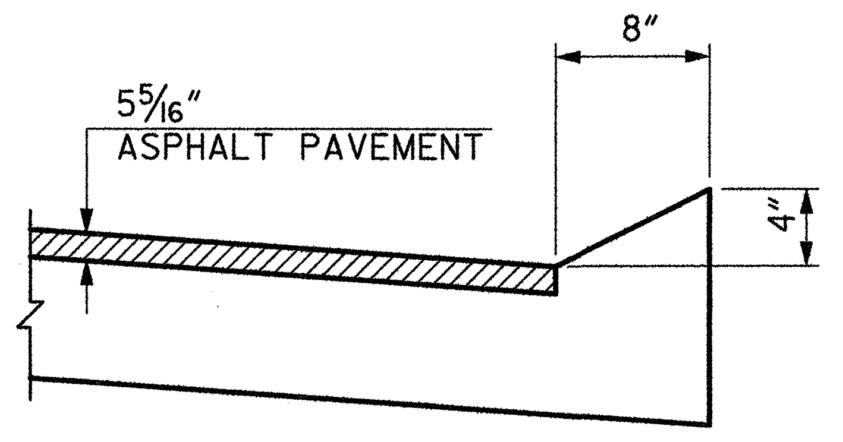
BILL OF MATERIAL

APPROACH SLAB AT EB #1

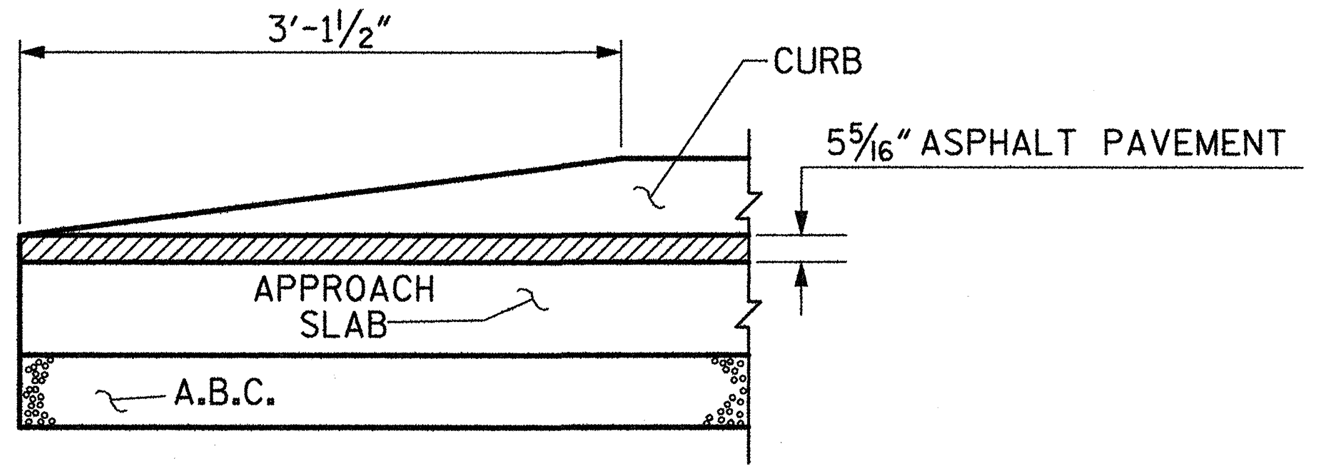
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	26	#4	STR	16'-5"	285
A2	26	#4	STR	16'-4"	284
✱ B1	62	#5	STR	11'-3"	727
B2	62	#6	STR	11'-8"	1086
REINFORCING STEEL				LBS.	1370
✱ EPOXY COATED REINFORCING STEEL				LBS.	1012
CLASS AA CONCRETE				C. Y.	15.3

APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	26	#4	STR	16'-5"	285
A2	26	#4	STR	16'-4"	284
✱ B1	62	#5	STR	11'-3"	727
B2	62	#6	STR	11'-8"	1086
REINFORCING STEEL				LBS.	1370
✱ EPOXY COATED REINFORCING STEEL				LBS.	1012
CLASS AA CONCRETE				C. Y.	15.3



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

L. Kevin Austin
19661
L. KEVIN AUSTIN
8/11/10

PLANS PREPARED BY:
MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
Raleigh, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
STD. NO. BAS13

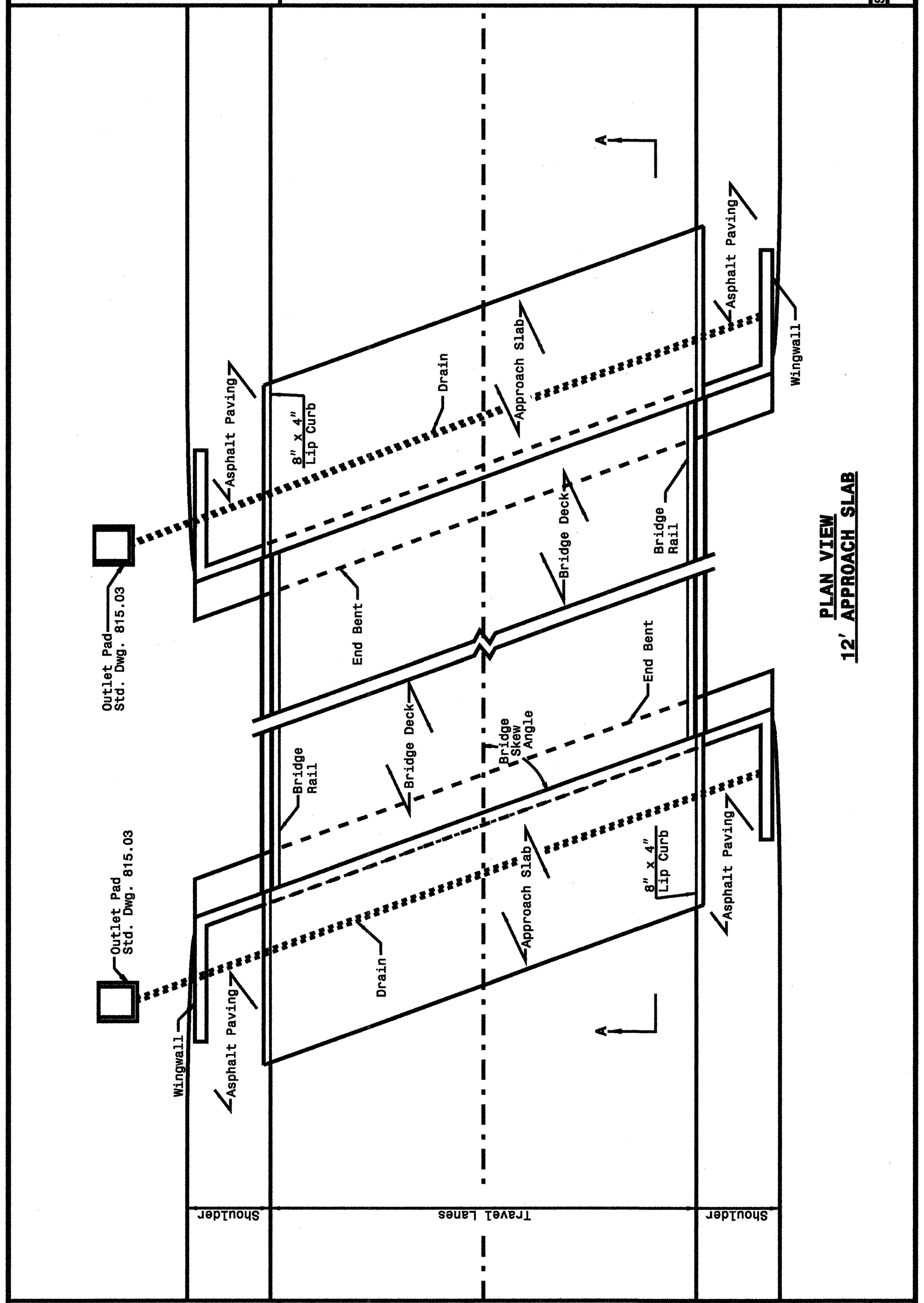
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. 12
TOTAL SHEETS 22

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2
422D11



PLAN VIEW
12' APPROACH SLAB

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

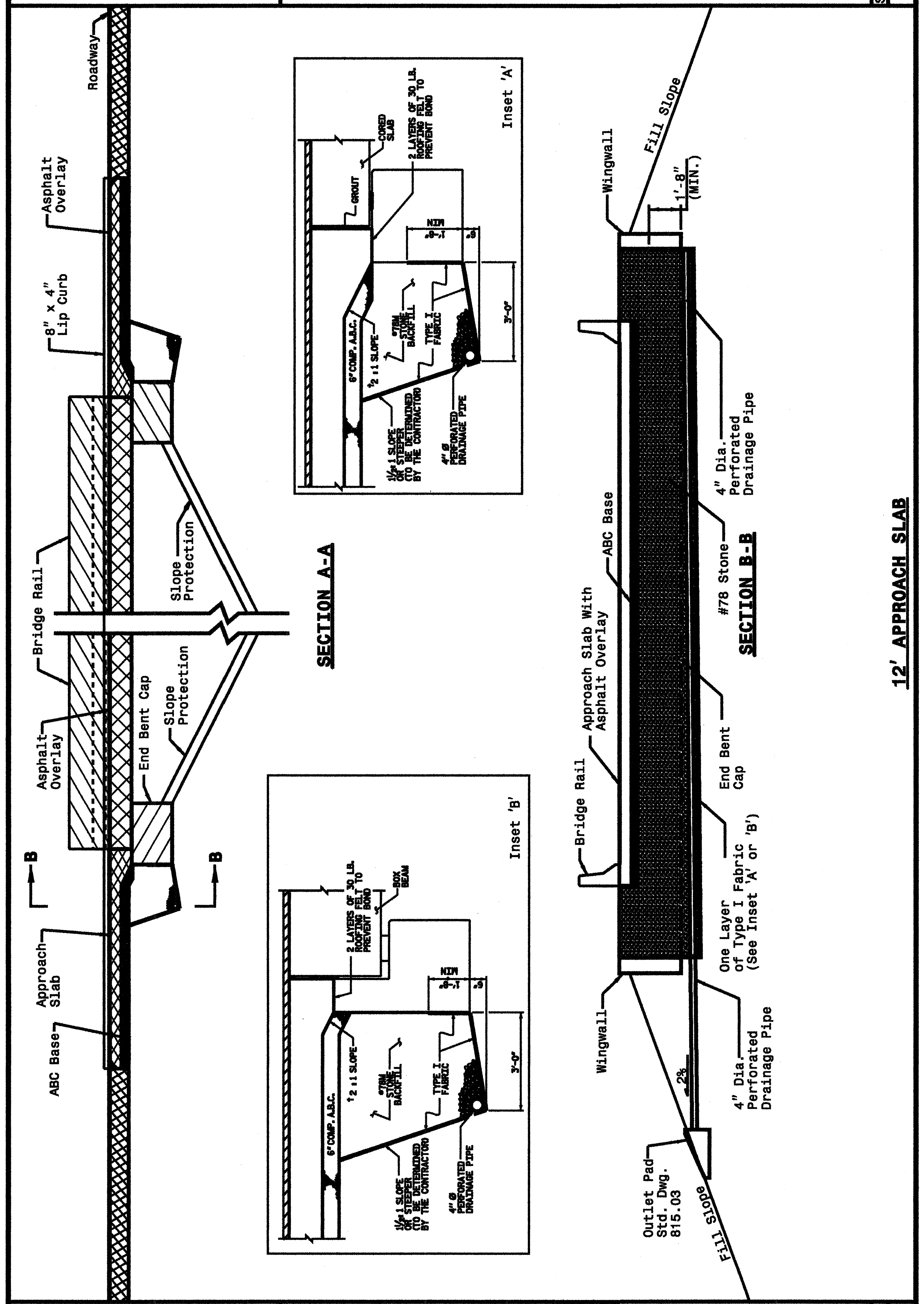
ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2
422D11

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 2 OF 2
422D11



SECTION A-A

SECTION B-B

12' APPROACH SLAB

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

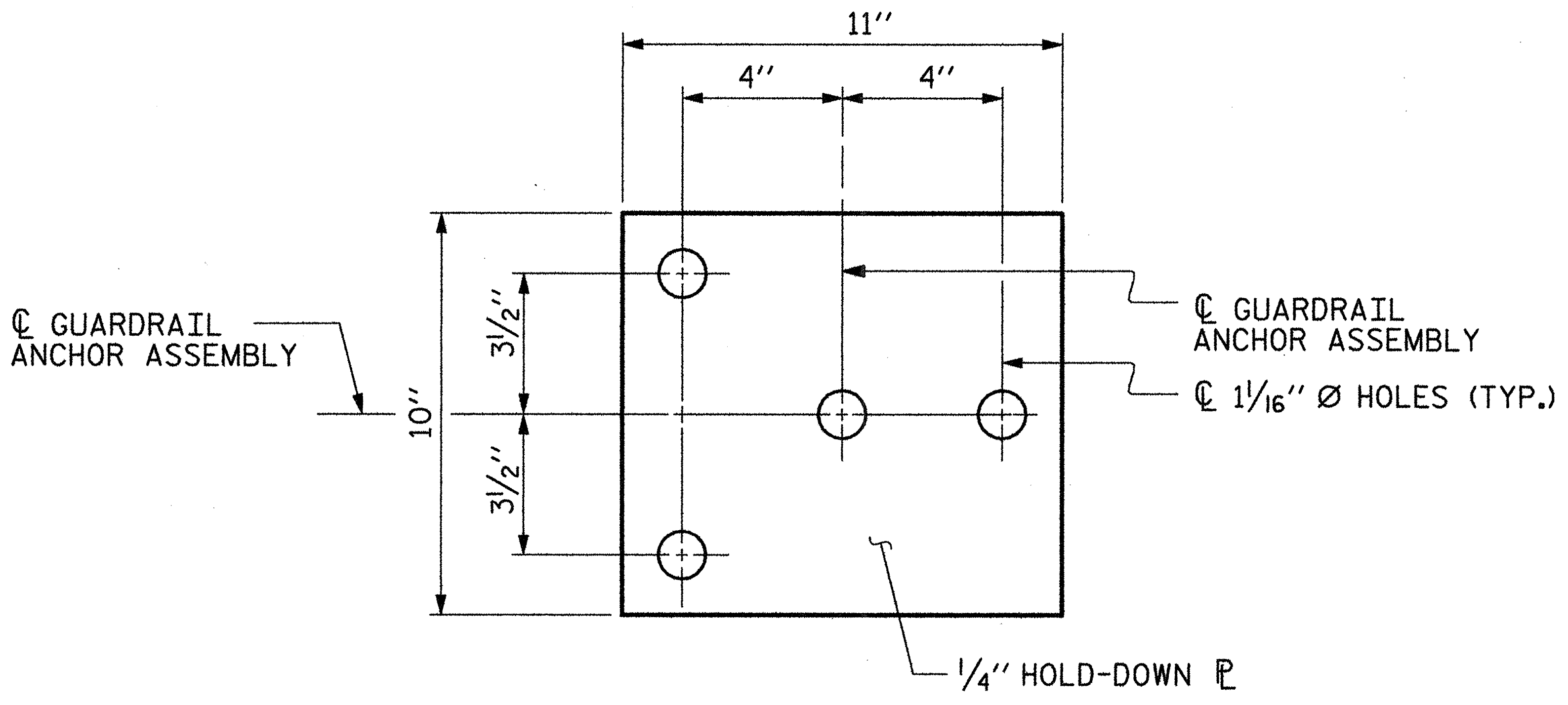
SHEET 2 OF 2
422D11

PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

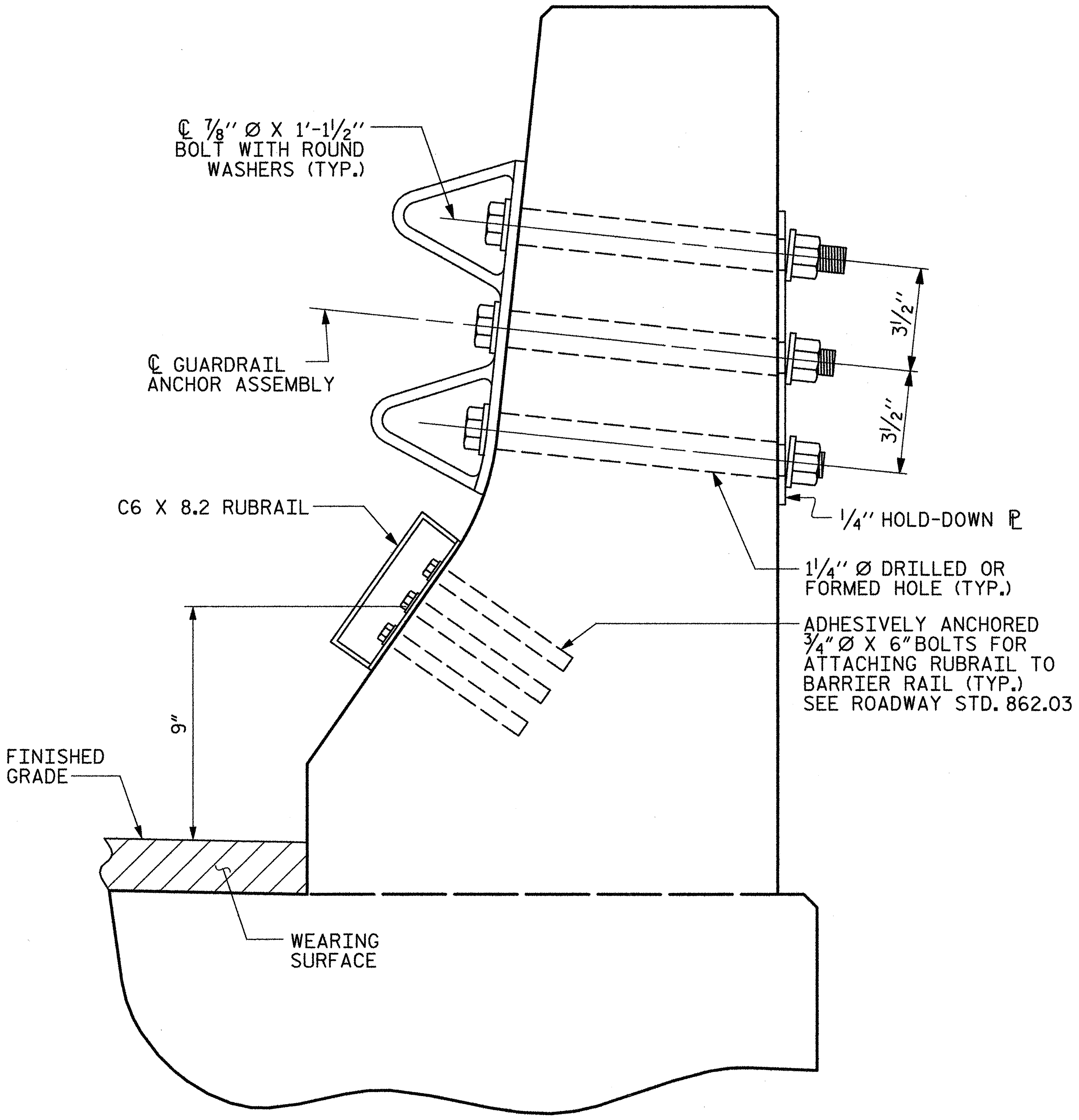
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

ORIGINAL BY: K. A. Kempf DATE: 6-10-08
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: kkempf\english\bridge approach fills.dgn

01-JUN-2009 14:15
s:\contracts\contracts\special details\ericward\stds\06' stds to special details\4221\bridge approach fil sub reg tier.dgn
jhowerton AT PS23750I

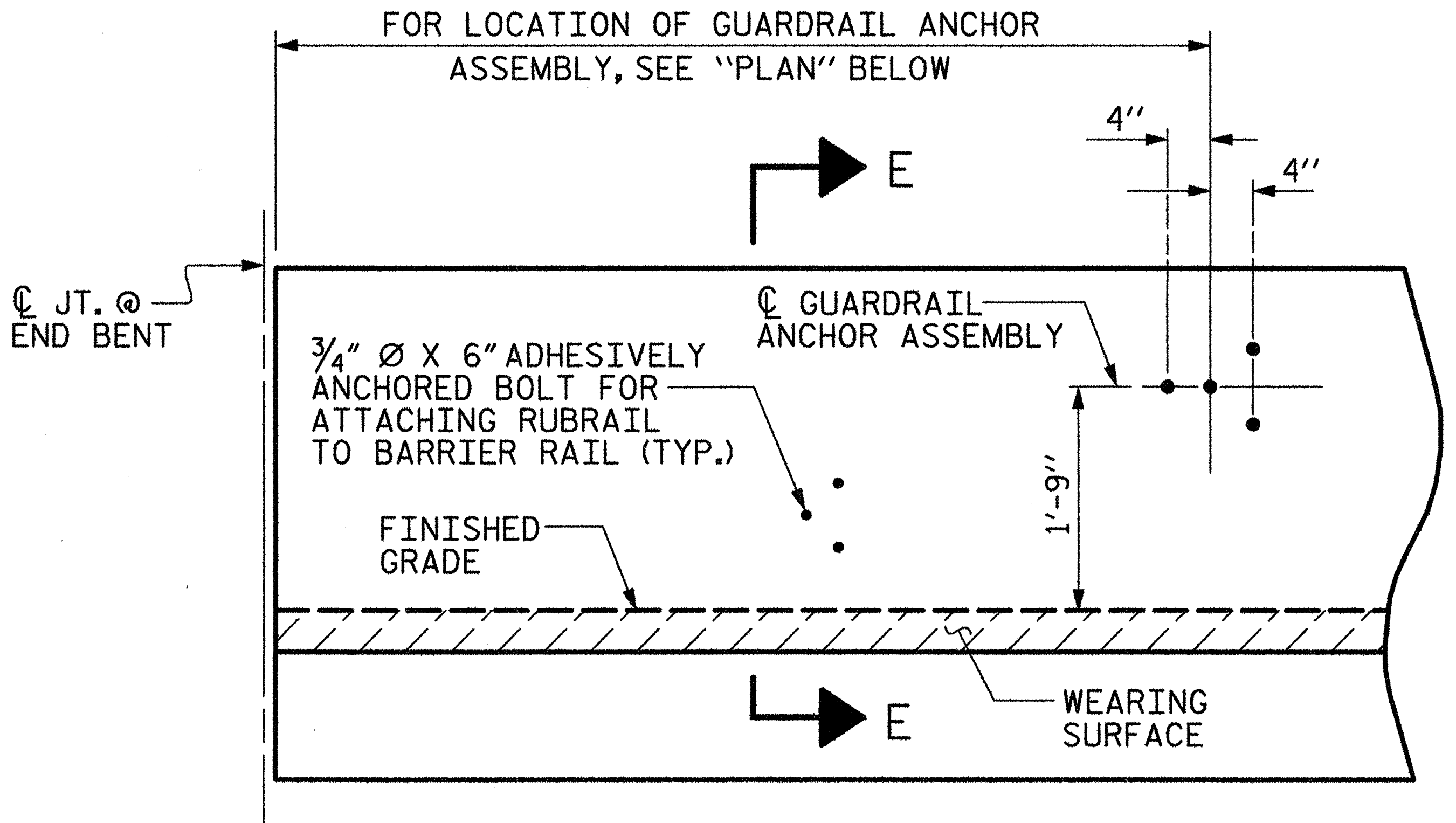


PLAN



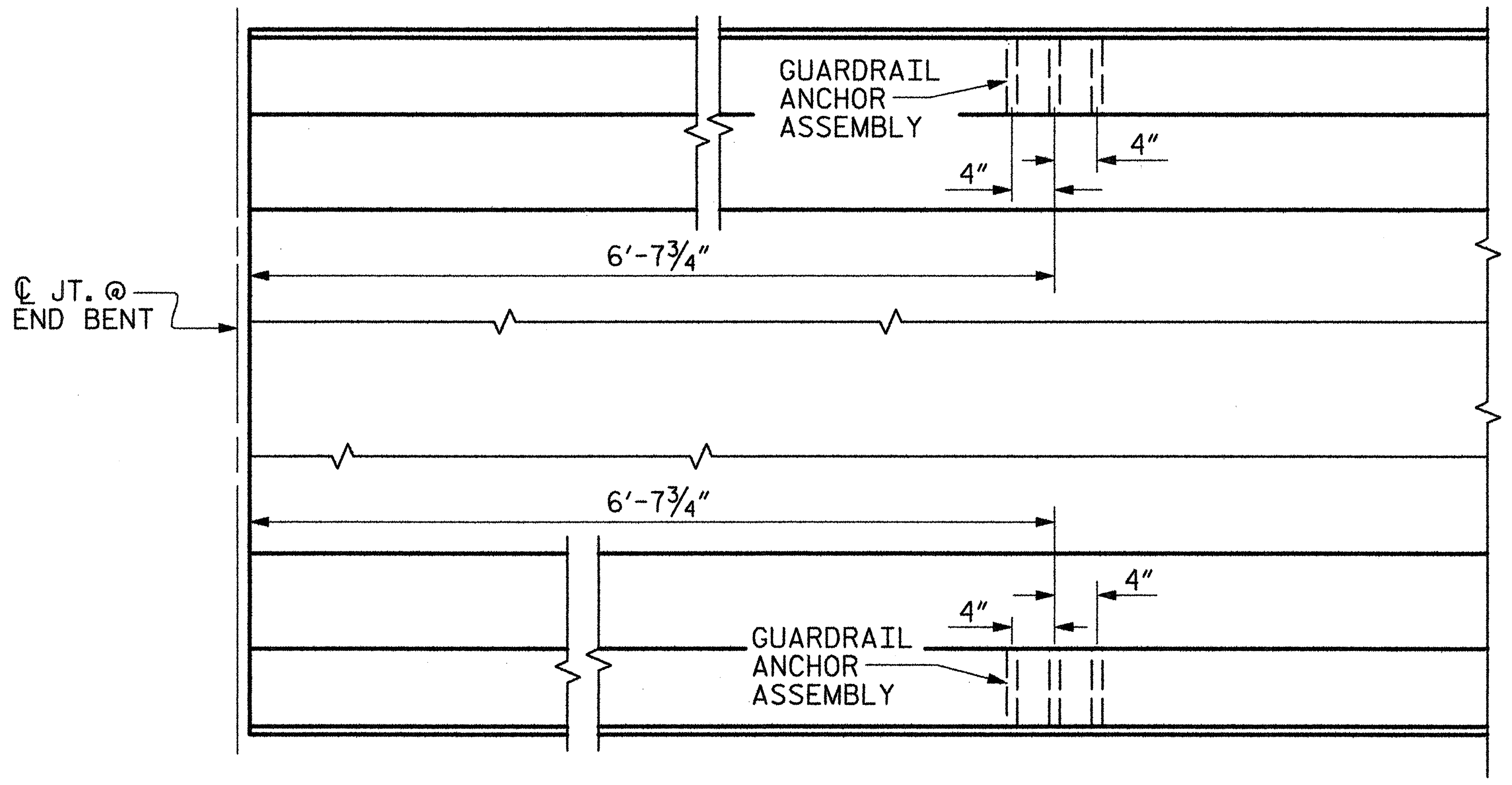
SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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

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.)

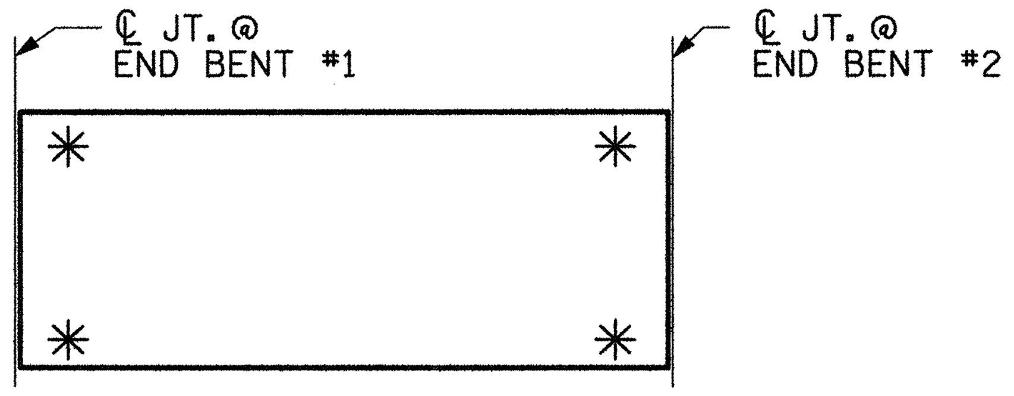
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 LUMP SUM BID PRICE FOR STEEL BEAM GUARDRAIL.

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 FIELD TESTING IS REQUIRED, AND 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.



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

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

STD. NO. GRA2

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

L. Kevin Austin
19661
L. KEVIN AUSTIN
8/11/10

PLANS PREPARED BY:
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RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

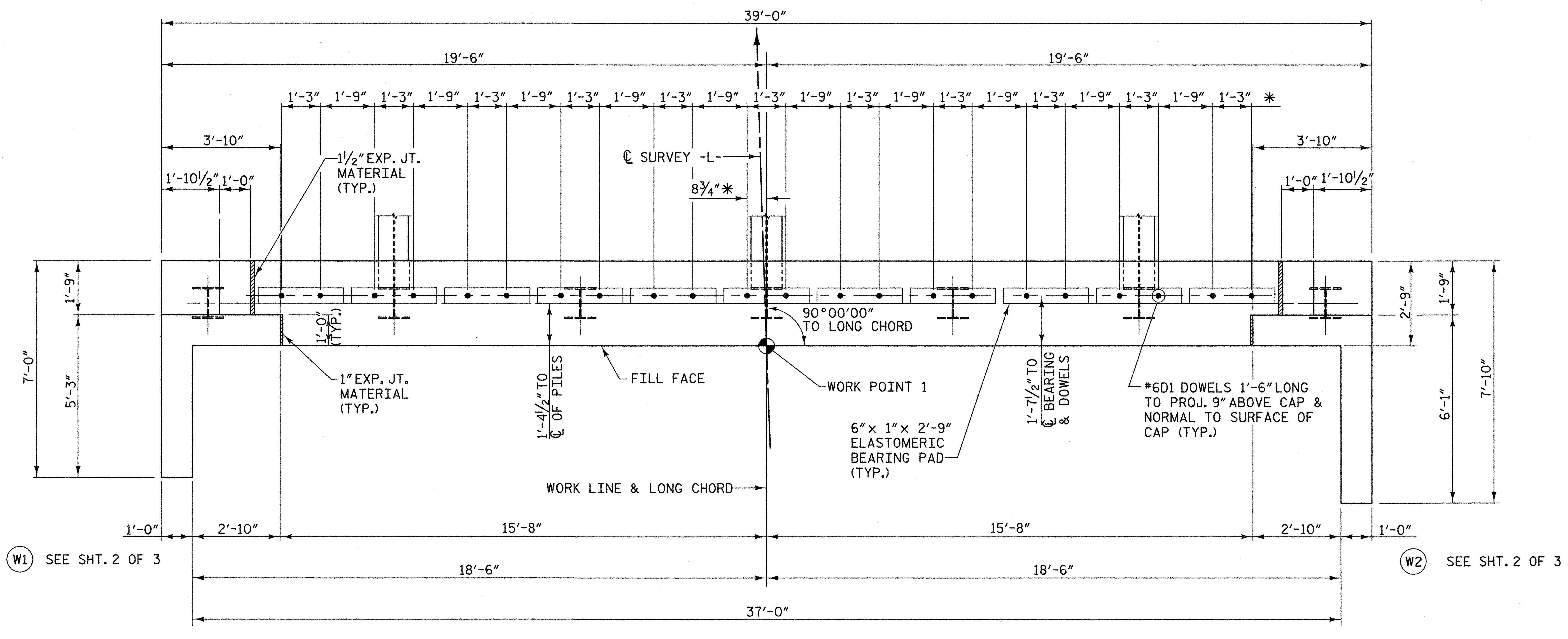
REVISIONS

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

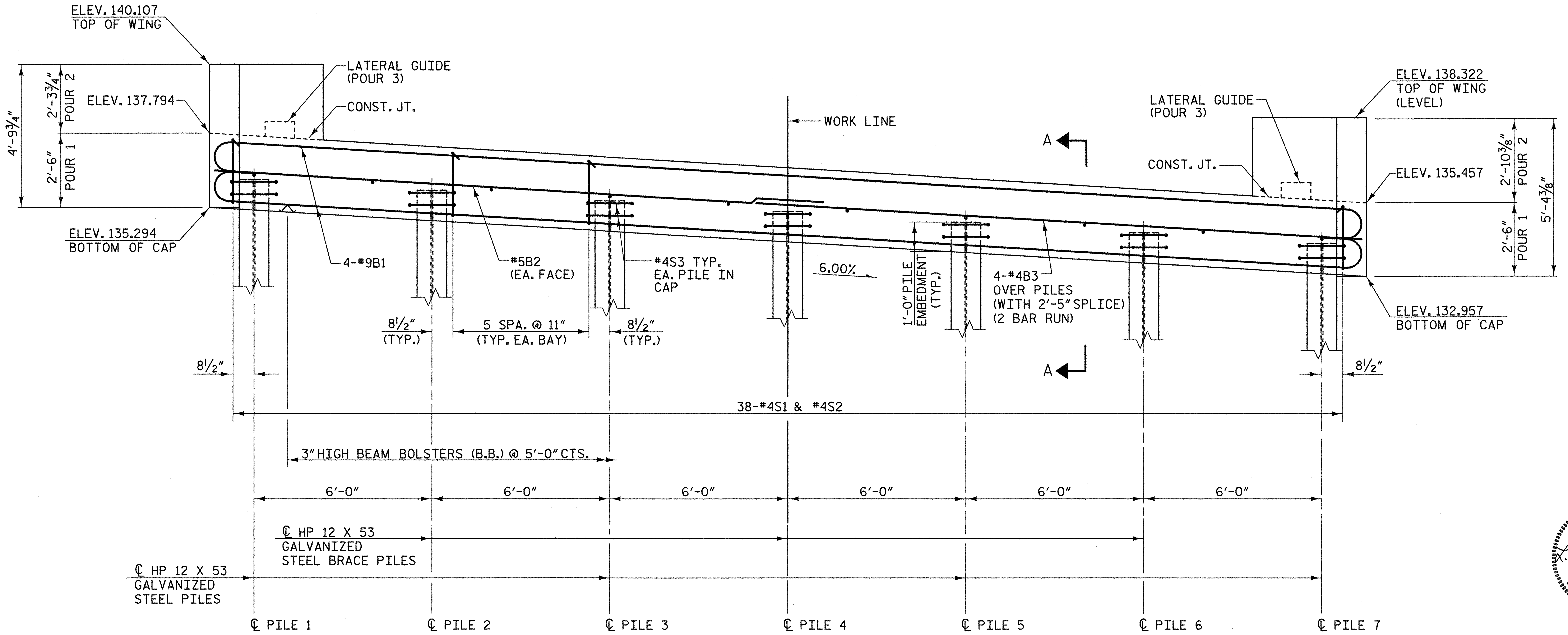
SHEET NO. 14
TOTAL SHEETS 22

ASSEMBLED BY : W. B. ALLEN DATE : 1/10
CHECKED BY : L. K. AUSTIN DATE : 8/10
DRAWN BY : TLA 5/06
CHECKED BY : GM 5/06
ADDED 5/1/06R KMM/GM

8/12/2010 7:10:49 AM R:\Structures\BK5III_SD_GR_01.dgn



PLAN



ELEVATION

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

FOR DOWEL DETAIL, SEE SHEET 3 OF 3.

* MEASURED ALONG SURFACE OF CAP

PILE CUT OFF ELEVATIONS

PILE	ELEVATION
1	136.234
2	135.875
3	135.515
4	135.155
5	134.796
6	134.436
7	134.077

PROJECT NO. 42562

ROBESON COUNTY

STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

SHEET 1 OF 3

L. KEVIN AUSTIN
1966l
8/11/10

PLANS PREPARED BY:

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

29'-10" CLEAR ROADWAY - 90° SKEW

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

SHEET NO.
15

TOTAL SHEETS
22

DRAWN BY : W. B. ALLEN DATE : 2/10
CHECKED BY : L. K. AUSTIN DATE : 8/10

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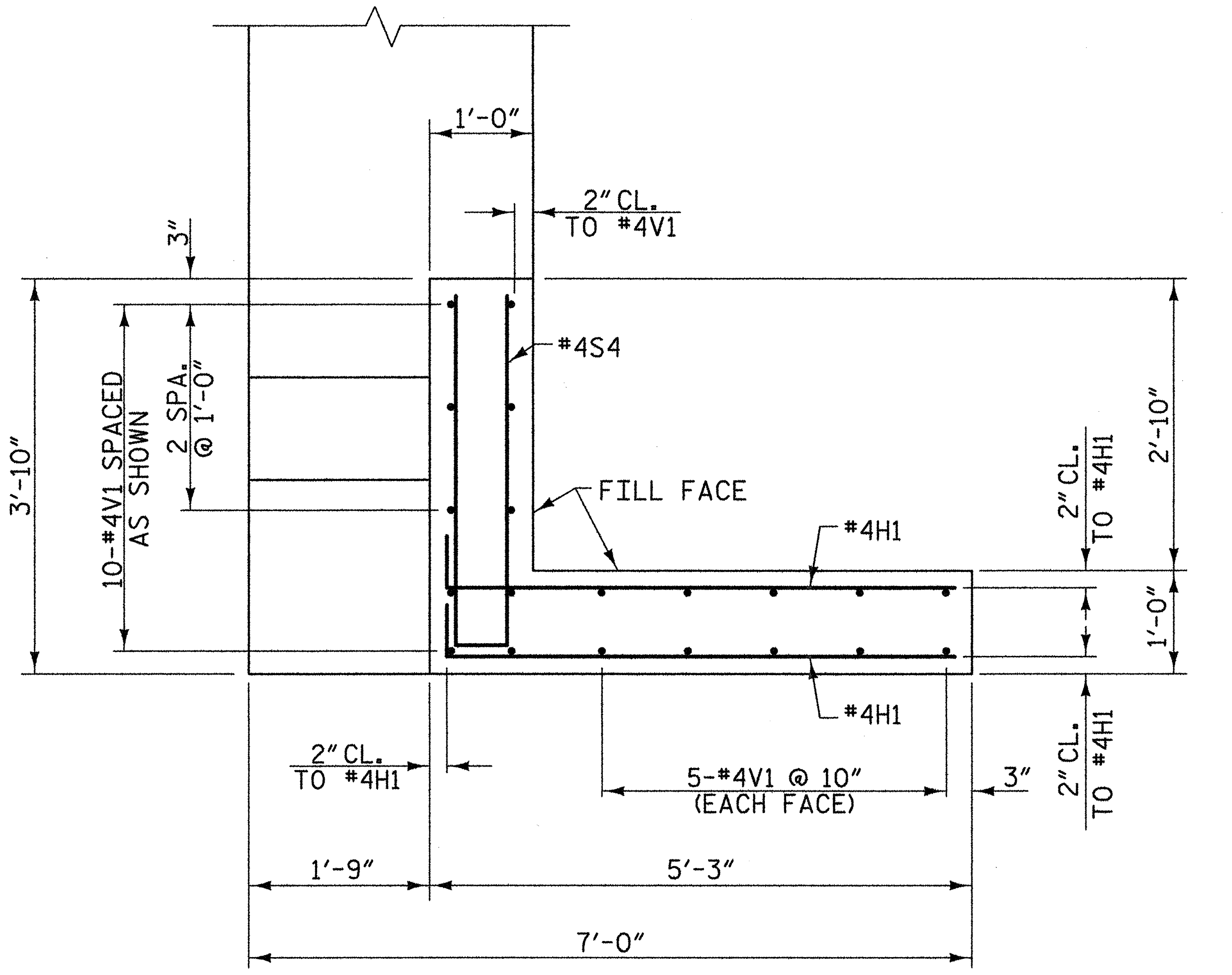
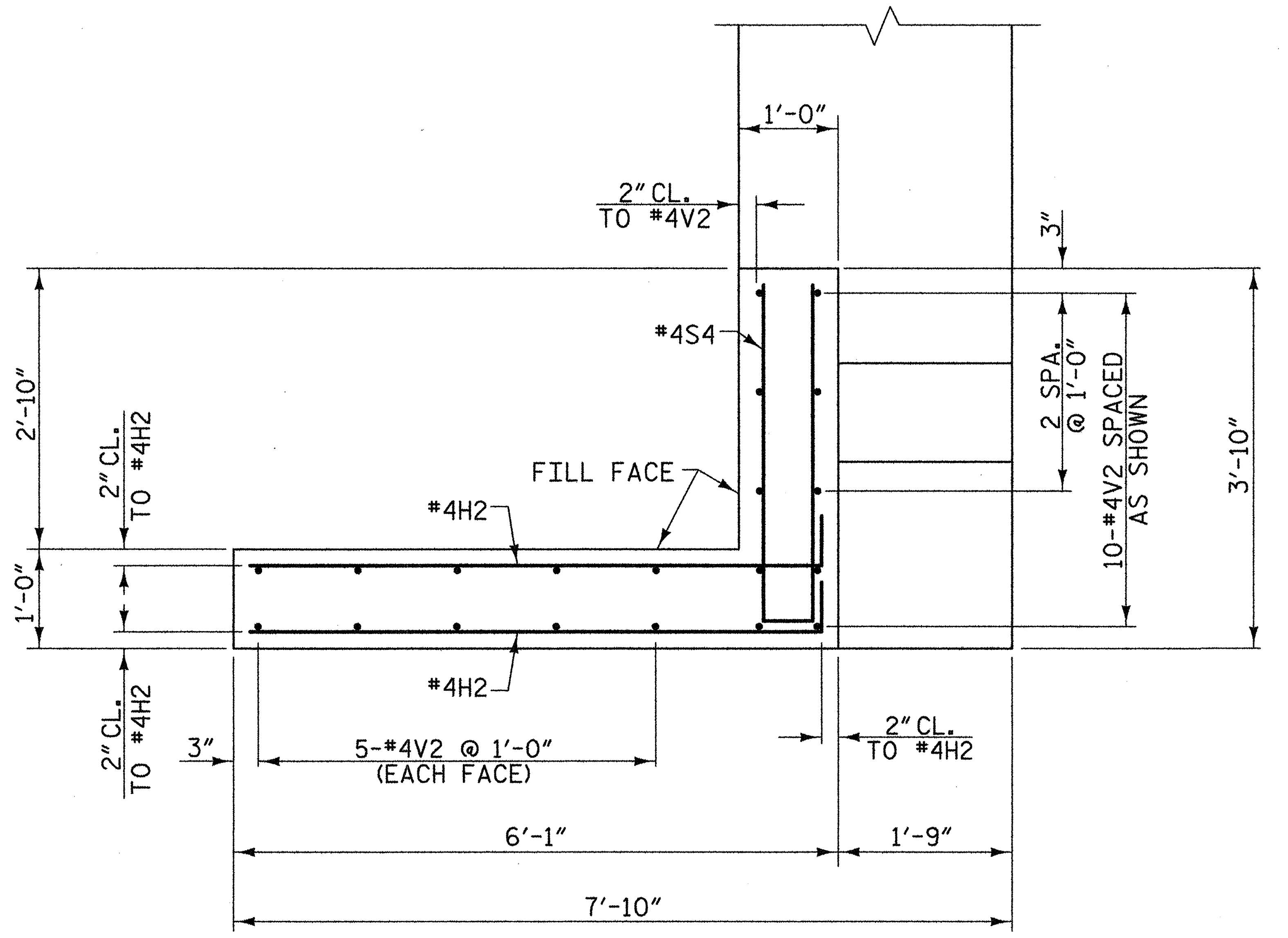
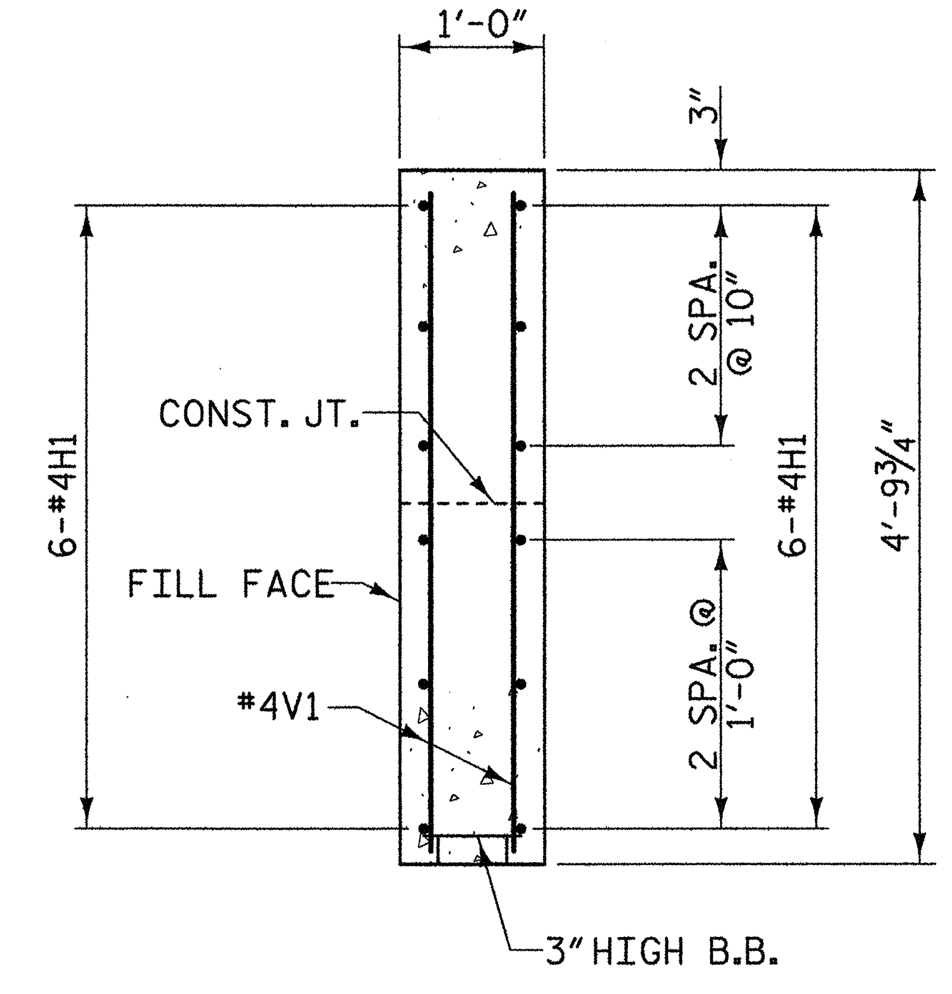


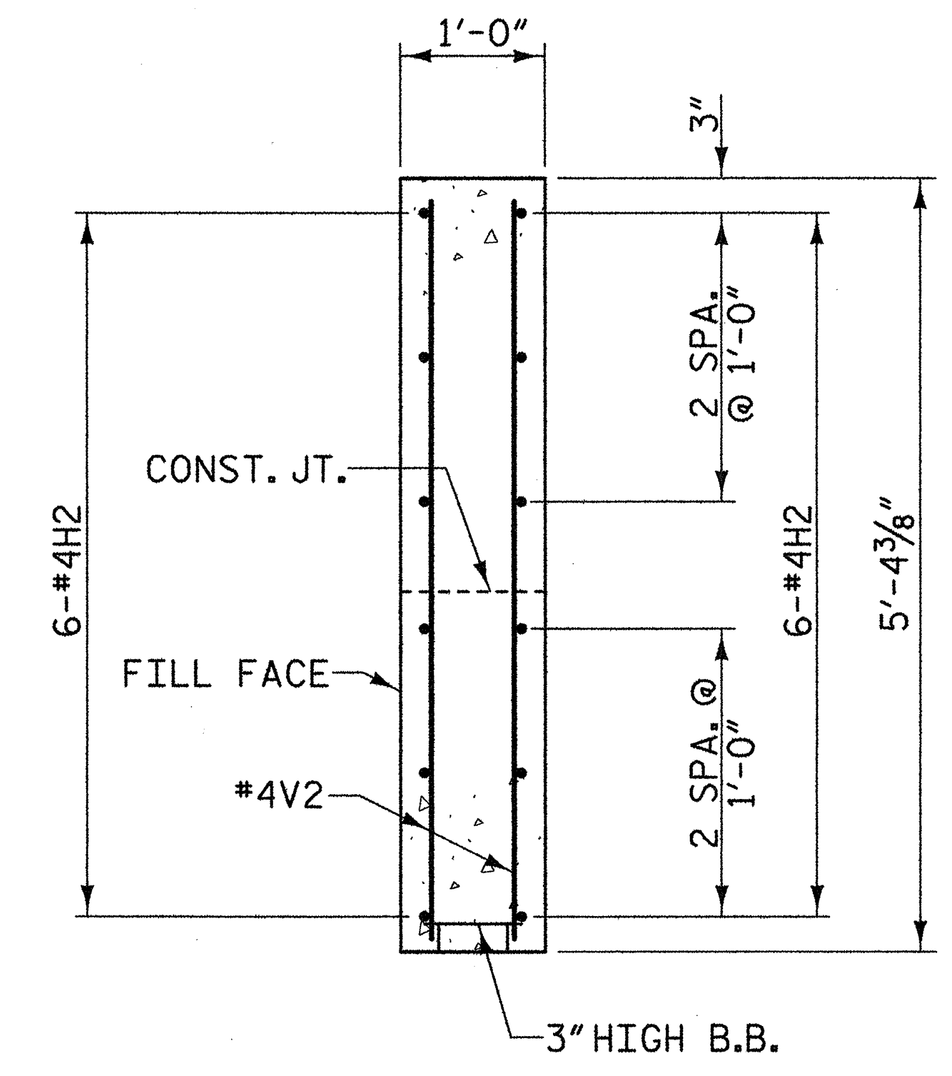
W1 PLAN OF LEFT WING



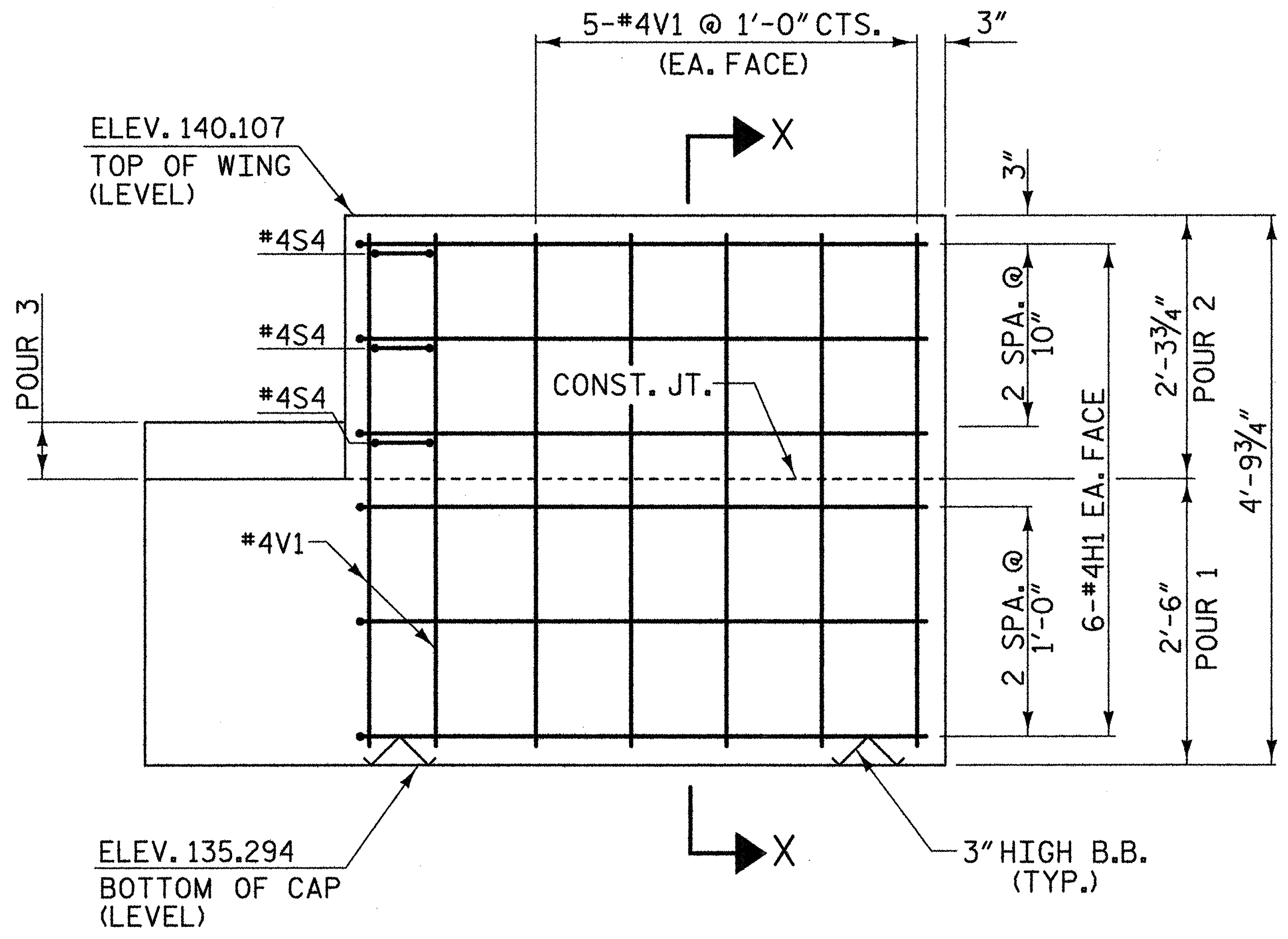
W2 PLAN OF RIGHT WING



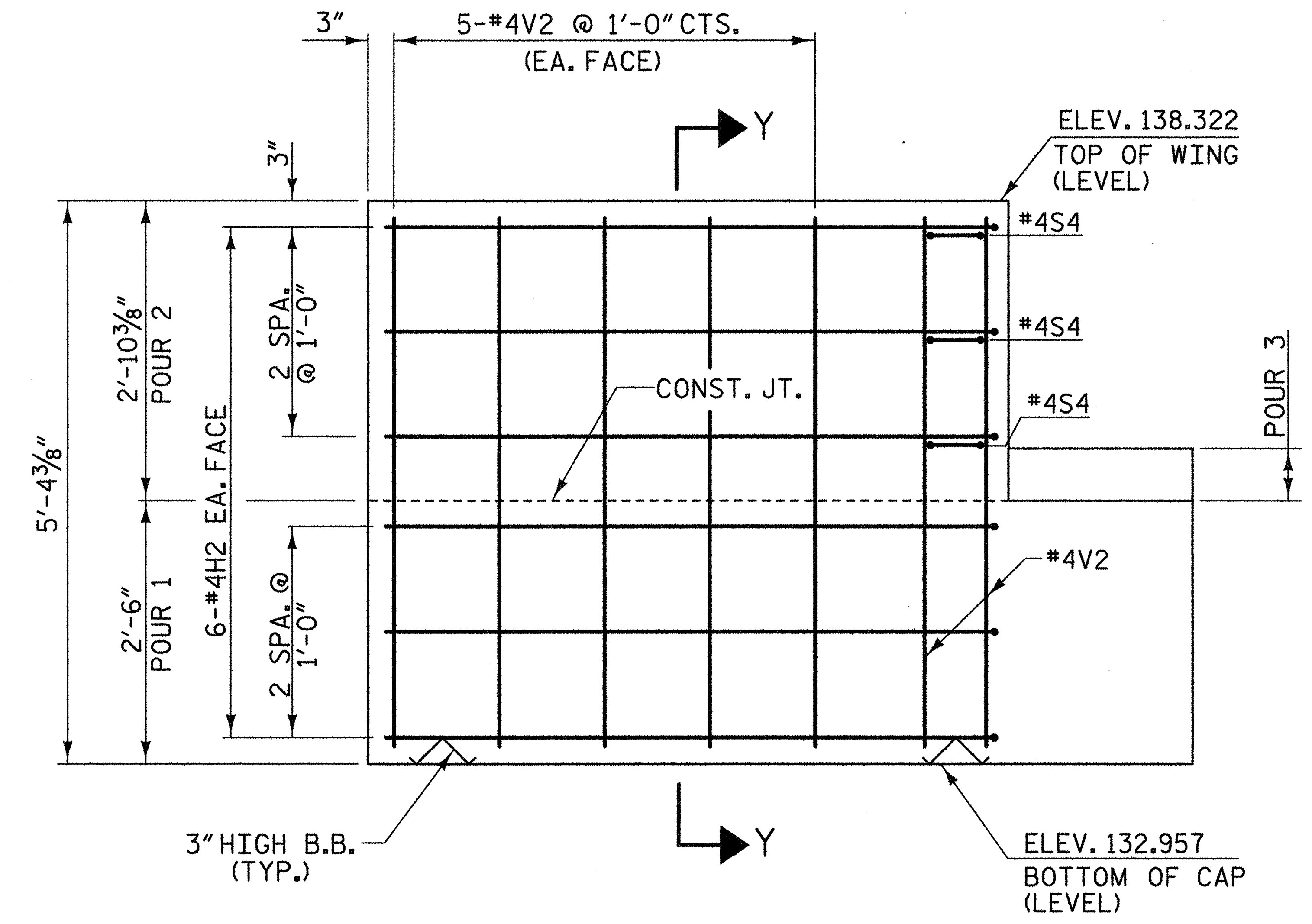
SECTION X-X



SECTION Y-Y



W1 ELEVATION OF LEFT WING



W2 ELEVATION OF RIGHT WING

PROJECT NO. 42562

ROBESON COUNTY

STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380   SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

29'-10" CLEAR ROADWAY - 90° SKEW

REVISIONS

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

SHEET NO. 16

TOTAL SHEETS 22

SEAL 19661
L. KEVIN AUSTIN
L. Kevin Austin 8/11/10

PLANS PREPARED BY:
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Raleigh, N.C. 27636
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(919) 851-1918 (FAX)
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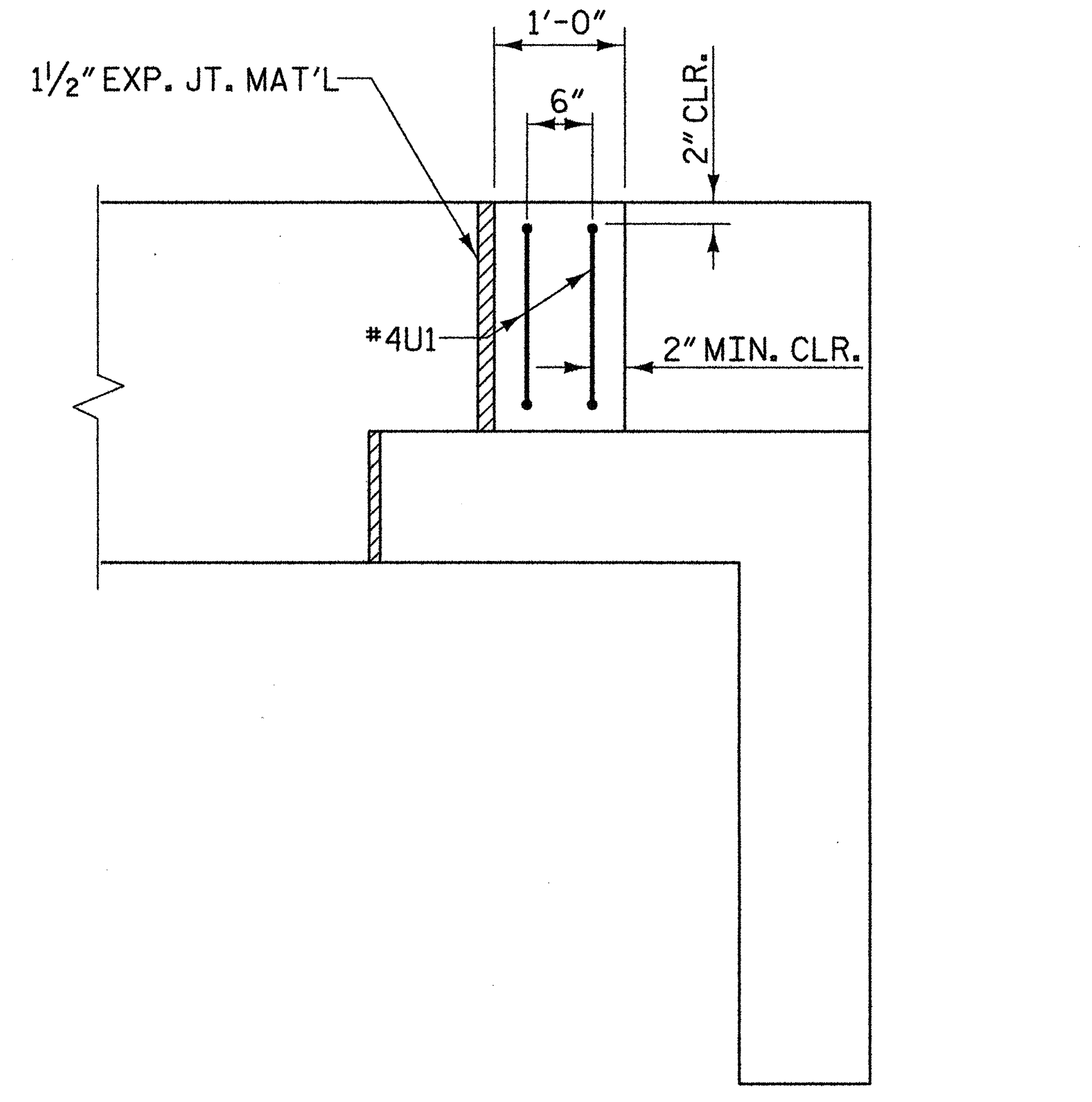
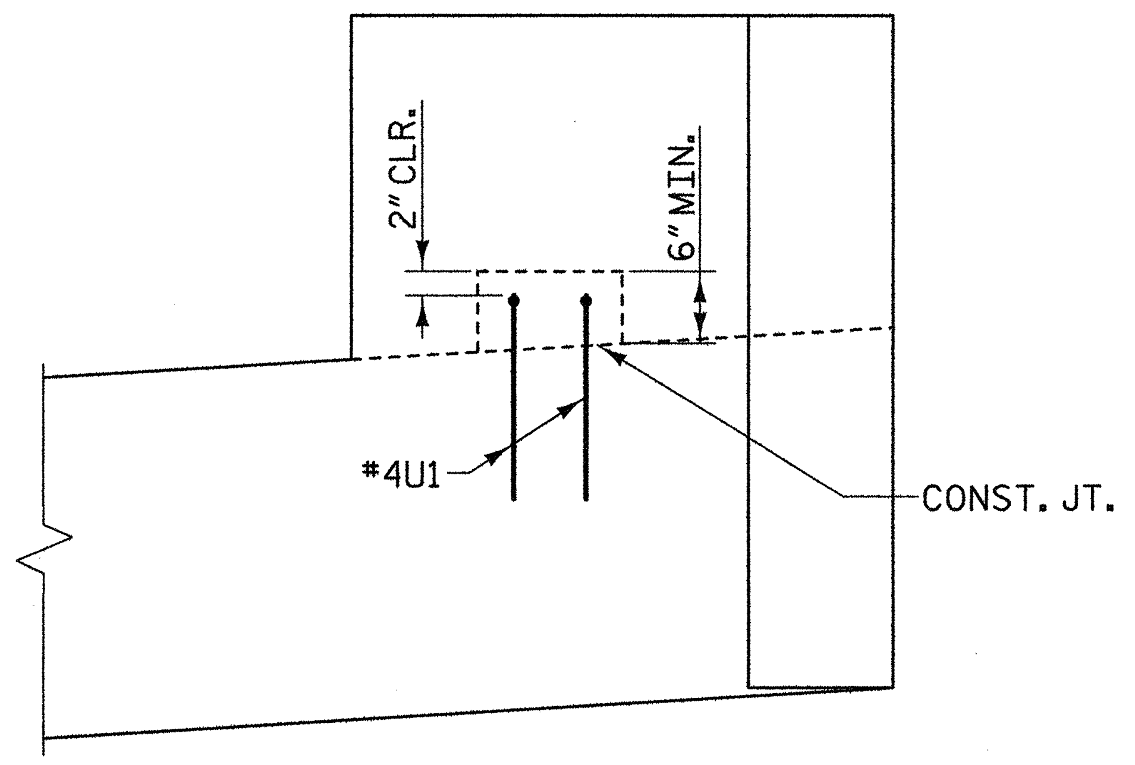
DRAWN BY : W. B. ALLEN DATE : 2/10
CHECKED BY : L. K. AUSTIN DATE : 8/10

8/10/2010 2:27:46 PM R:\Structures\BK5III_SD_EL02.dgn

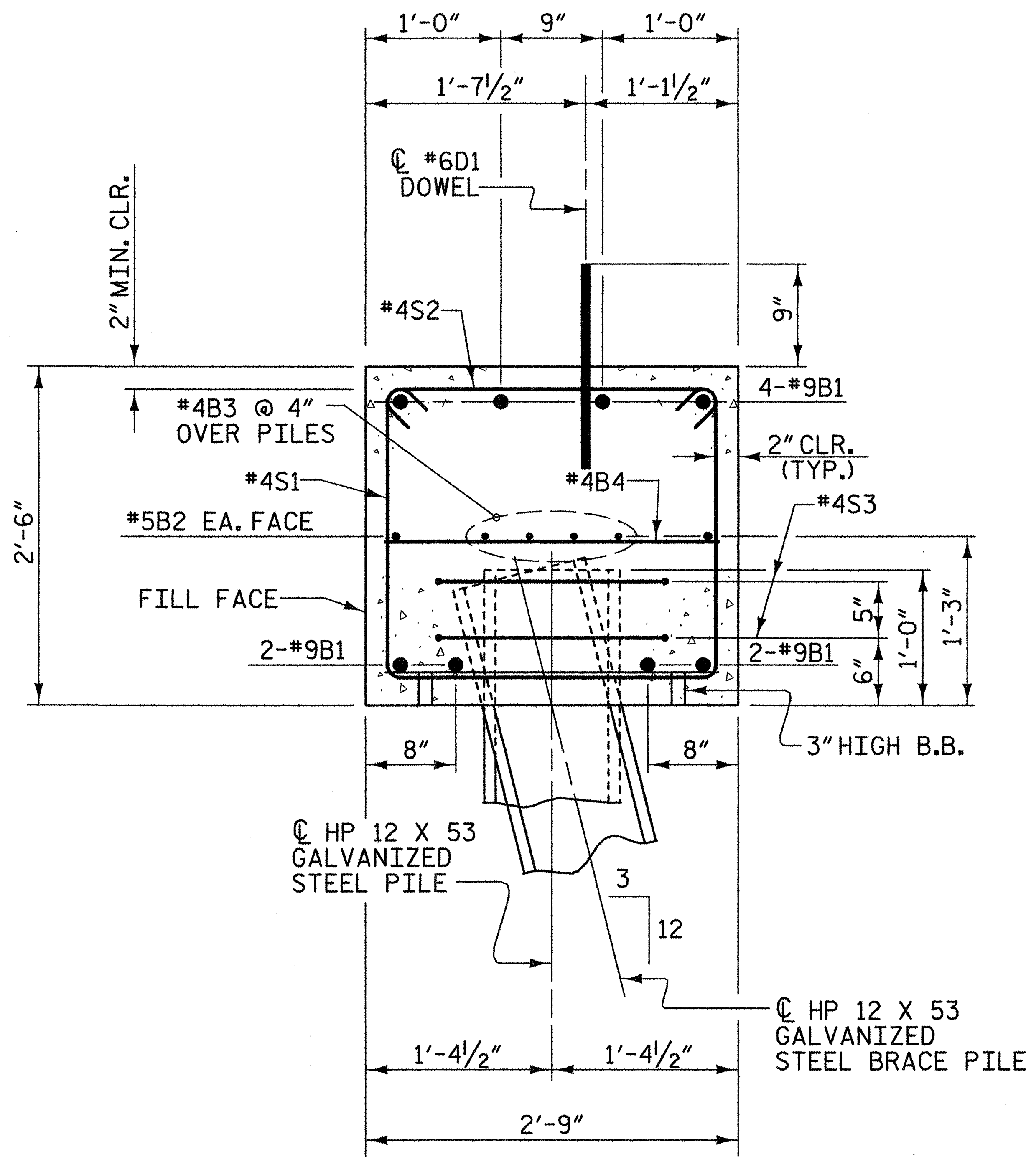


PLAN



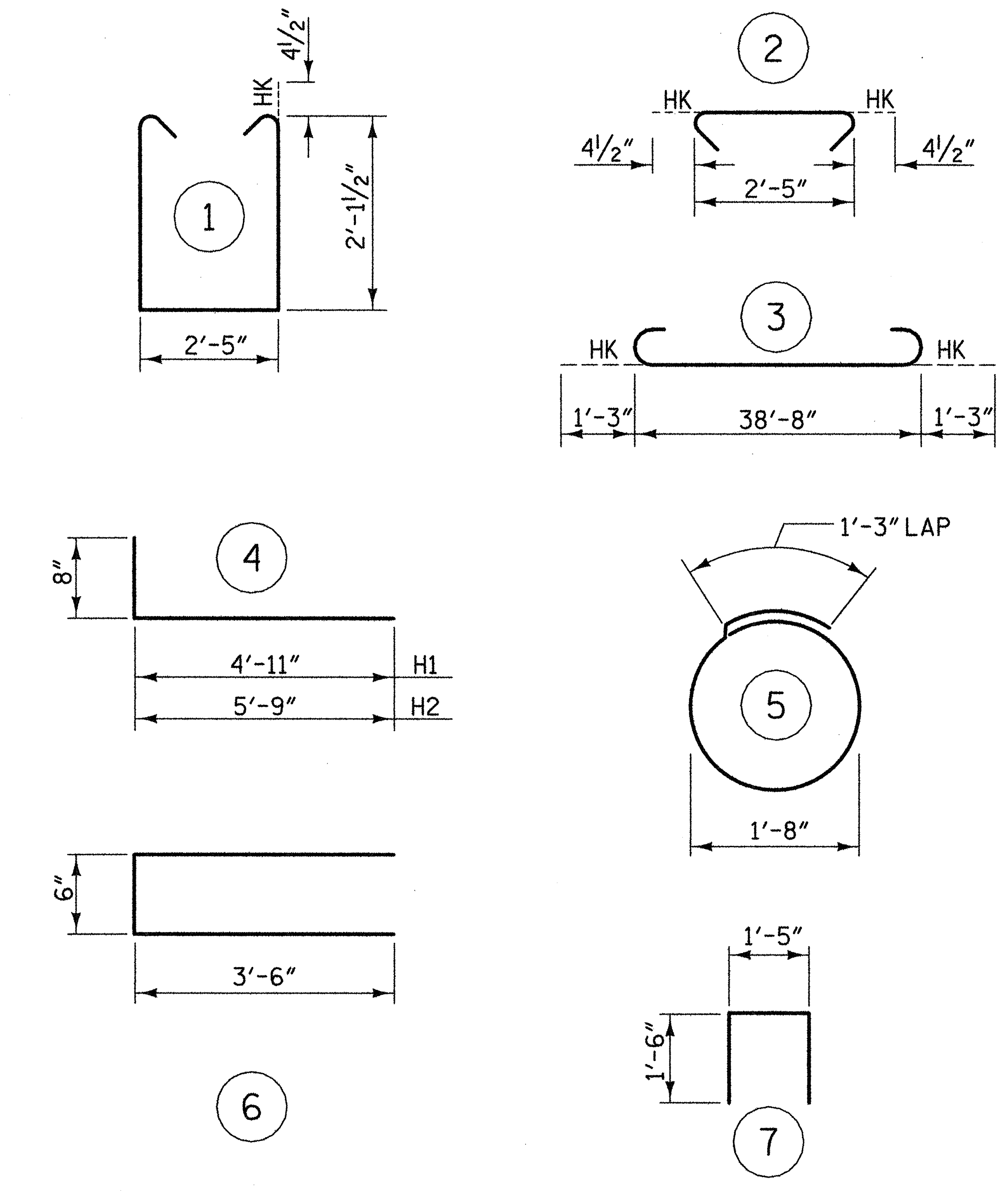
ELEVATION

LATERAL GUIDE DETAIL



SECTION A-A

BAR TYPES



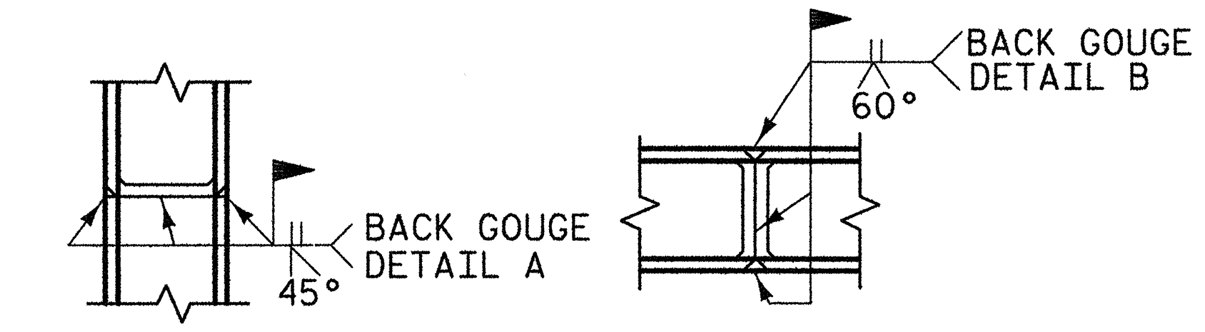
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR END BENT 1

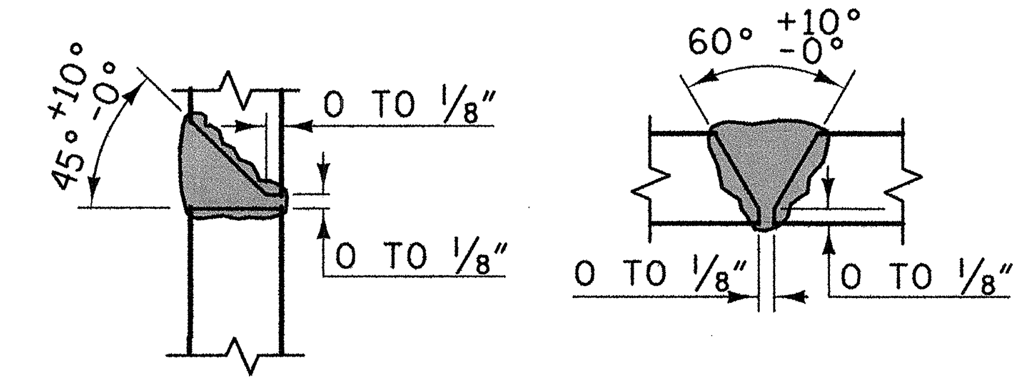
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	3	41'-2"	1120
B2	2	#5	STR	38'-8"	81
B3	8	#4	STR	20'-7"	110
B4	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	12	#4	4	5'-7"	45
H2	12	#4	4	6'-5"	51
S1	38	#4	1	7'-5"	188
S2	38	#4	2	3'-2"	80
S3	14	#4	5	6'-6"	61
S4	6	#4	6	7'-6"	30
U1	4	#4	7	4'-5"	12
V1	20	#4	STR	4'-5"	59
V2	20	#4	STR	5'-0"	67

TOTAL REINFORCING STEEL =		1970 lbs.
CLASS "A" CONCRETE - CU. YARDS		
	POUR 1	10.8 cu. yds.
	POUR 2	1.6 cu. yds.
	POUR 3	0.1 cu. yds.
	TOTAL	12.5 cu. yds.
HP 12 X 53 GALVANIZED STEEL PILES		
7 PILES REQUIRED - LIN. FEET		420



*PILE VERTICAL

*PILE HORIZONTAL OR VERTICAL

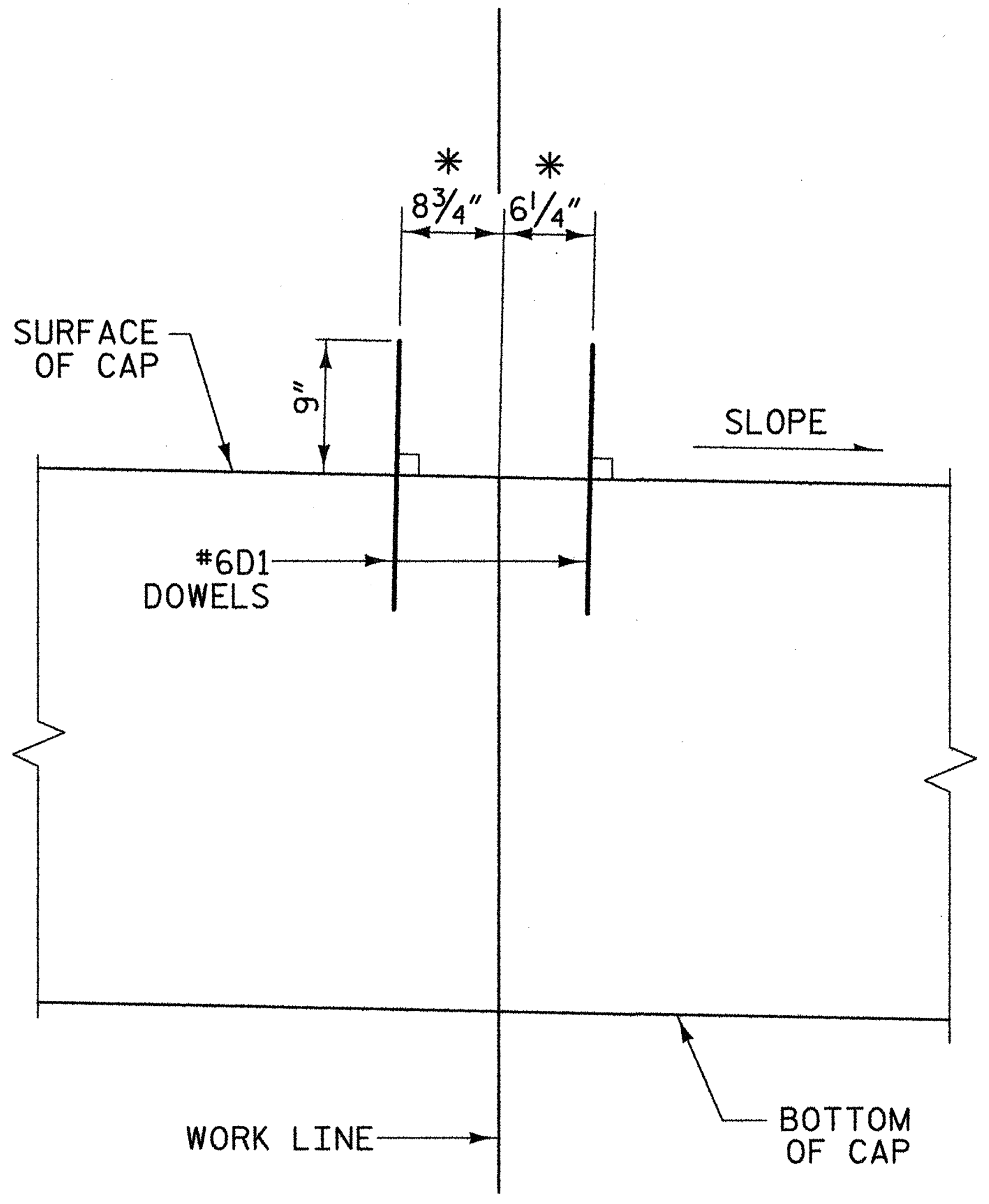


DETAIL A

DETAIL B

PILE SPLICE DETAILS

*POSITION OF PILE DURING WELDING.



DOWEL DETAIL

*MEASURED ALONG CAP SURFACE

PROJECT NO. 42562

ROBESON COUNTY

STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380 SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

29'-10" CLEAR ROADWAY - 90° SKEW

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

19661
L. KEVIN AUSTIN
L. Kevin Austin
8/11/10

PLANS PREPARED BY:
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(919) 851-1918 (FAX)
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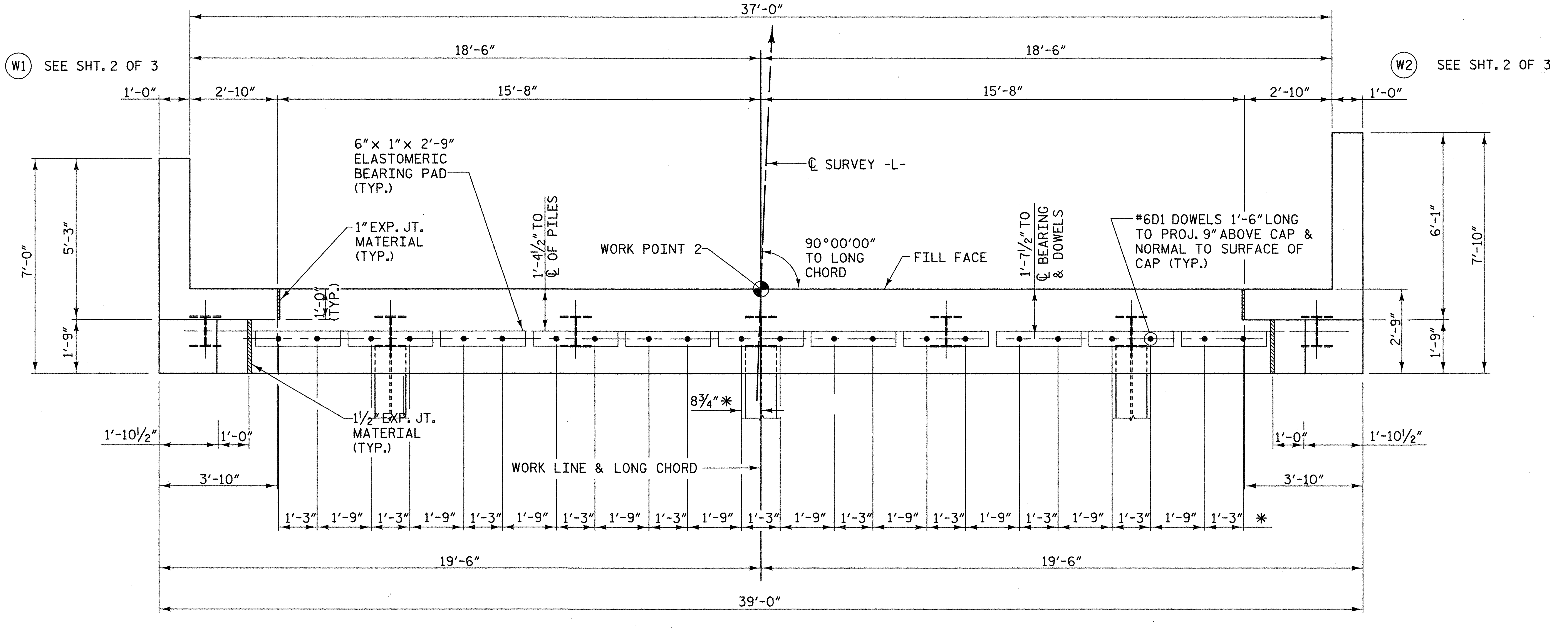
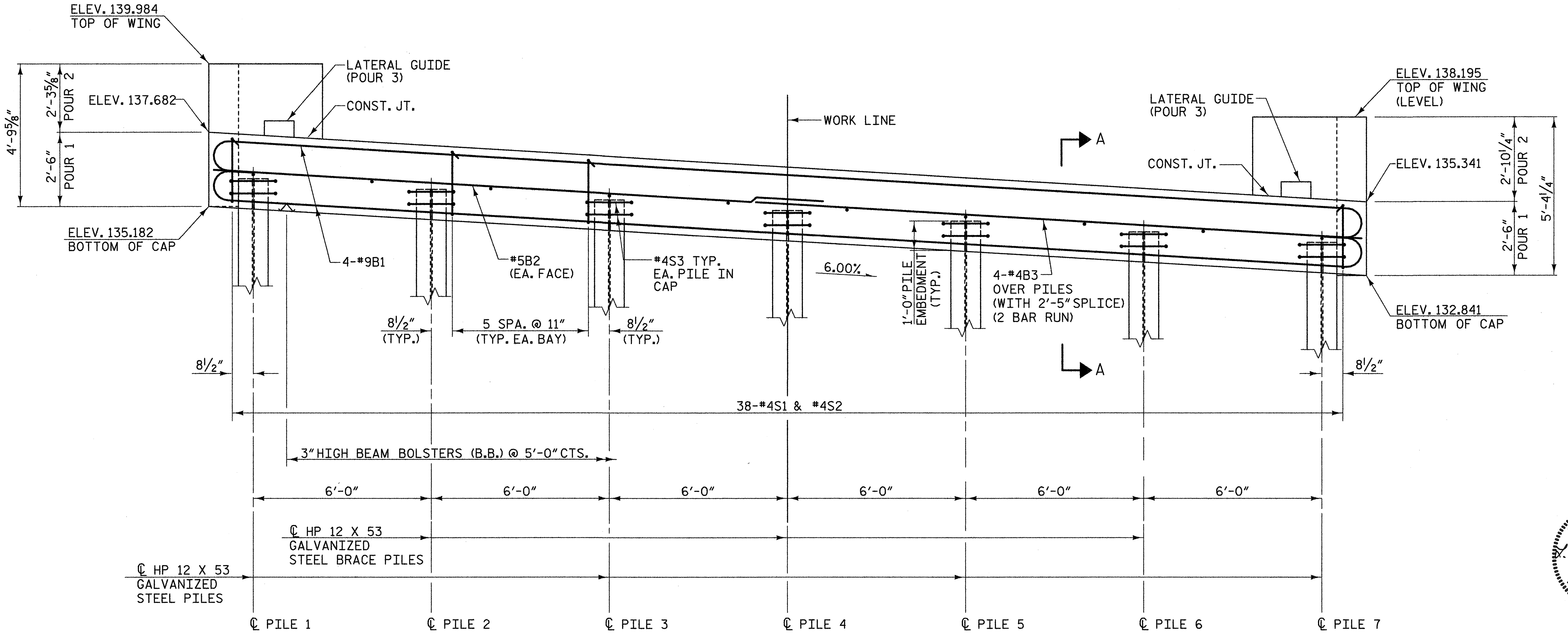
DRAWN BY : W. B. ALLEN DATE : 12/09
CHECKED BY : L. K. AUSTIN DATE : 8/10

8/10/2010 2:28:04 PM R:\Structures\BK5ll_SD_El_03.dgn



PLAN



ELEVATION

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

FOR PILE SPLICE DETAILS, SEE END BENT 1 SHEET 3 OF 3.

FOR DOWEL DETAIL, SEE END BENT 1 SHEET 3 OF 3.

* MEASURED ALONG SURFACE OF CAP

PILE CUT OFF ELEVATIONS

PILE	ELEVATION
1	136.122
2	135.762
3	135.402
4	135.042
5	134.681
6	134.321
7	133.961

PROJECT NO. 42562

ROBESON COUNTY

STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

29'-10" CLEAR ROADWAY - 90° SKEW

NORTH CAROLINA PROFESSIONAL ENGINEER
19661
L. KEVIN AUSTIN
8/11/10

PLANS PREPARED BY:

MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
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REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

SHEET NO. 18

TOTAL SHEETS 22

DRAWN BY : W. B. ALLEN DATE : 2/10
CHECKED BY : L. K. AUSTIN DATE : 8/10

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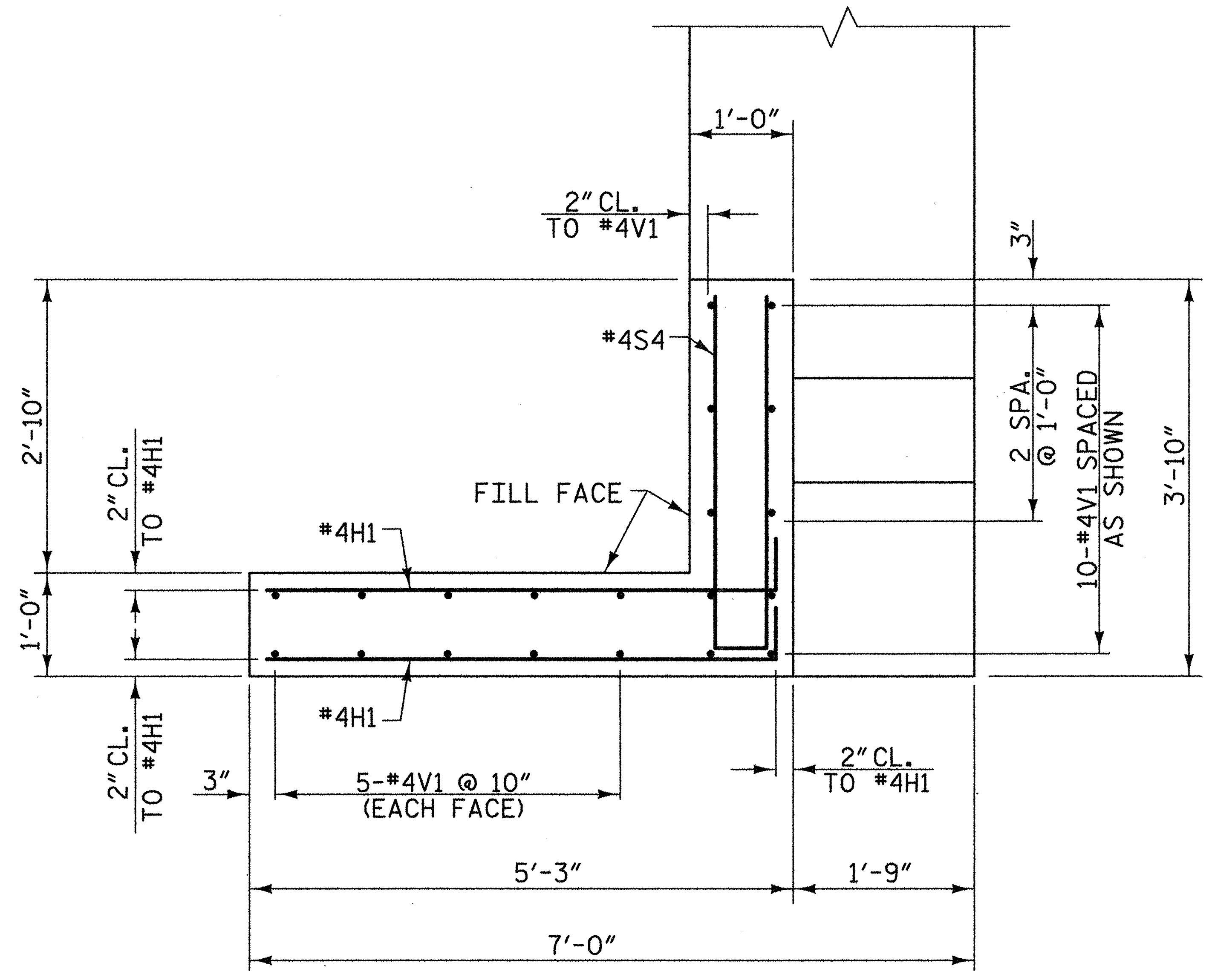
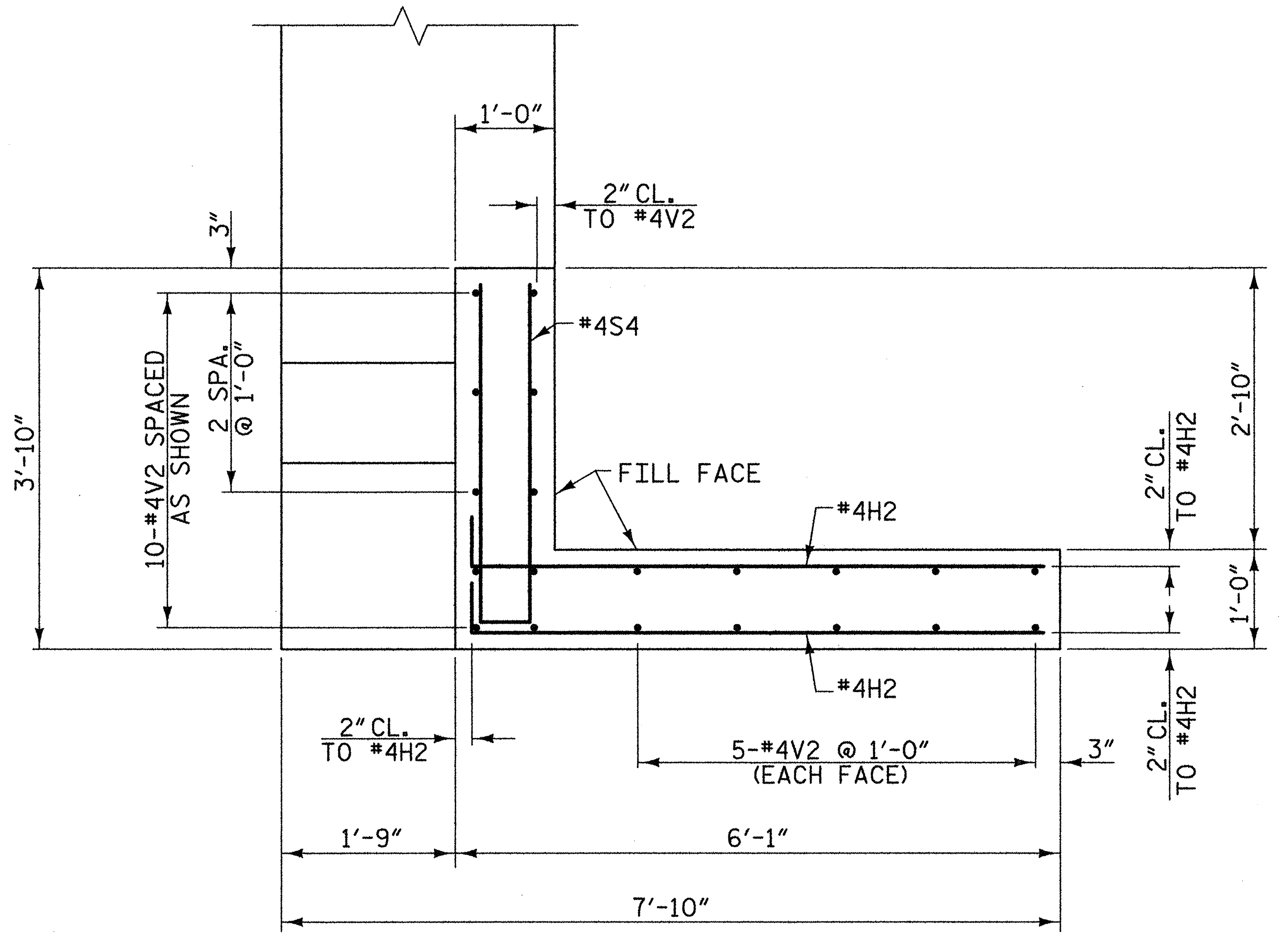
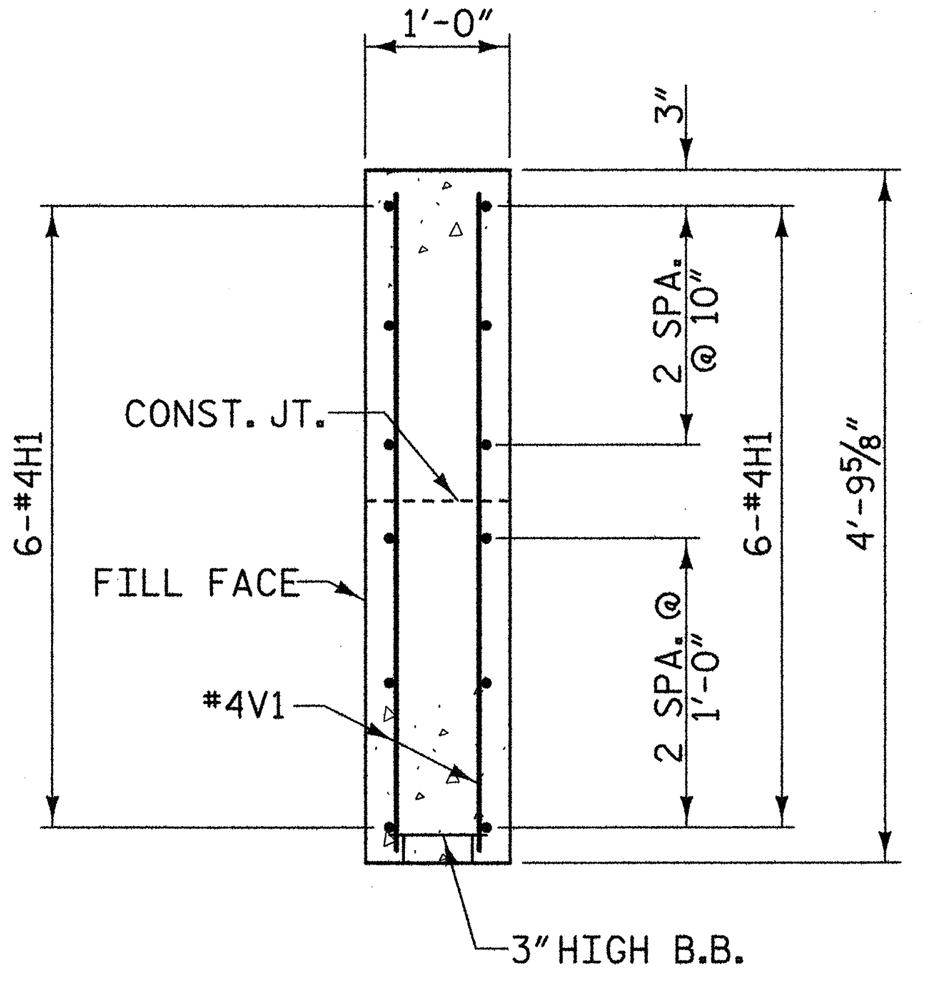


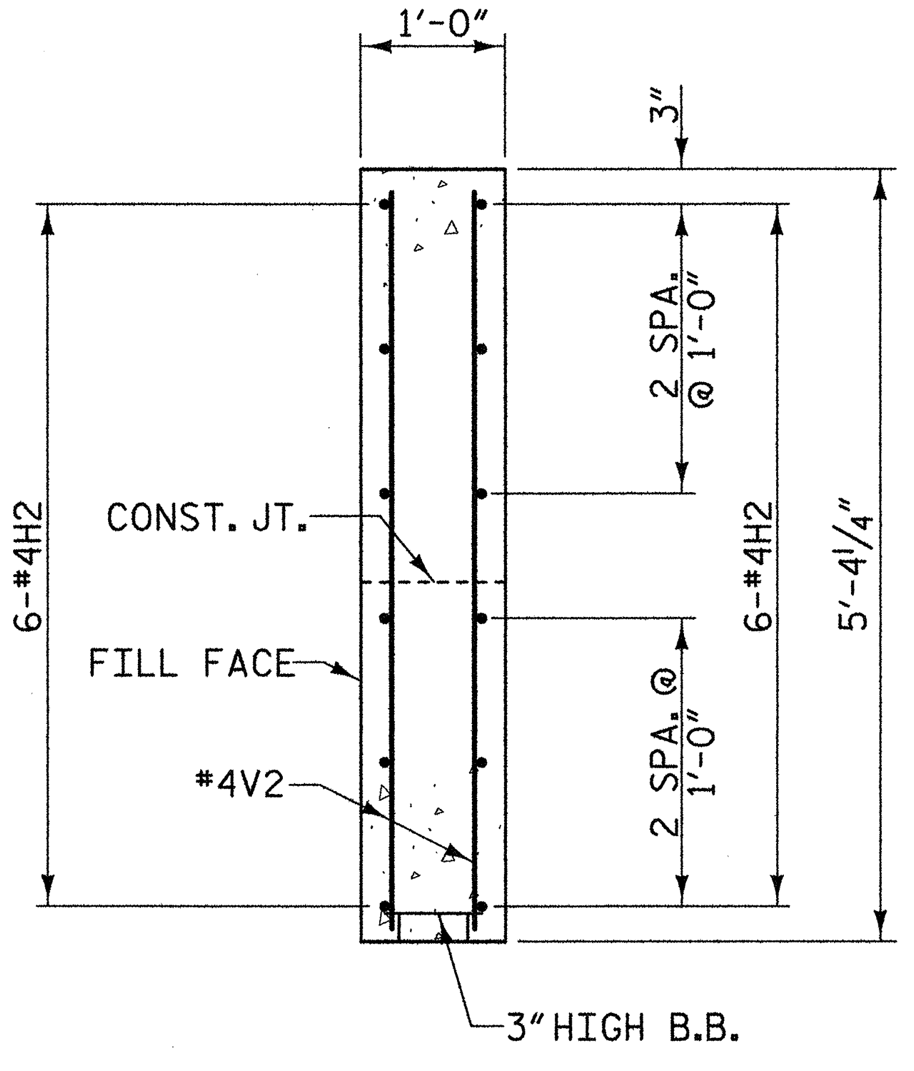
W1 PLAN OF LEFT WING



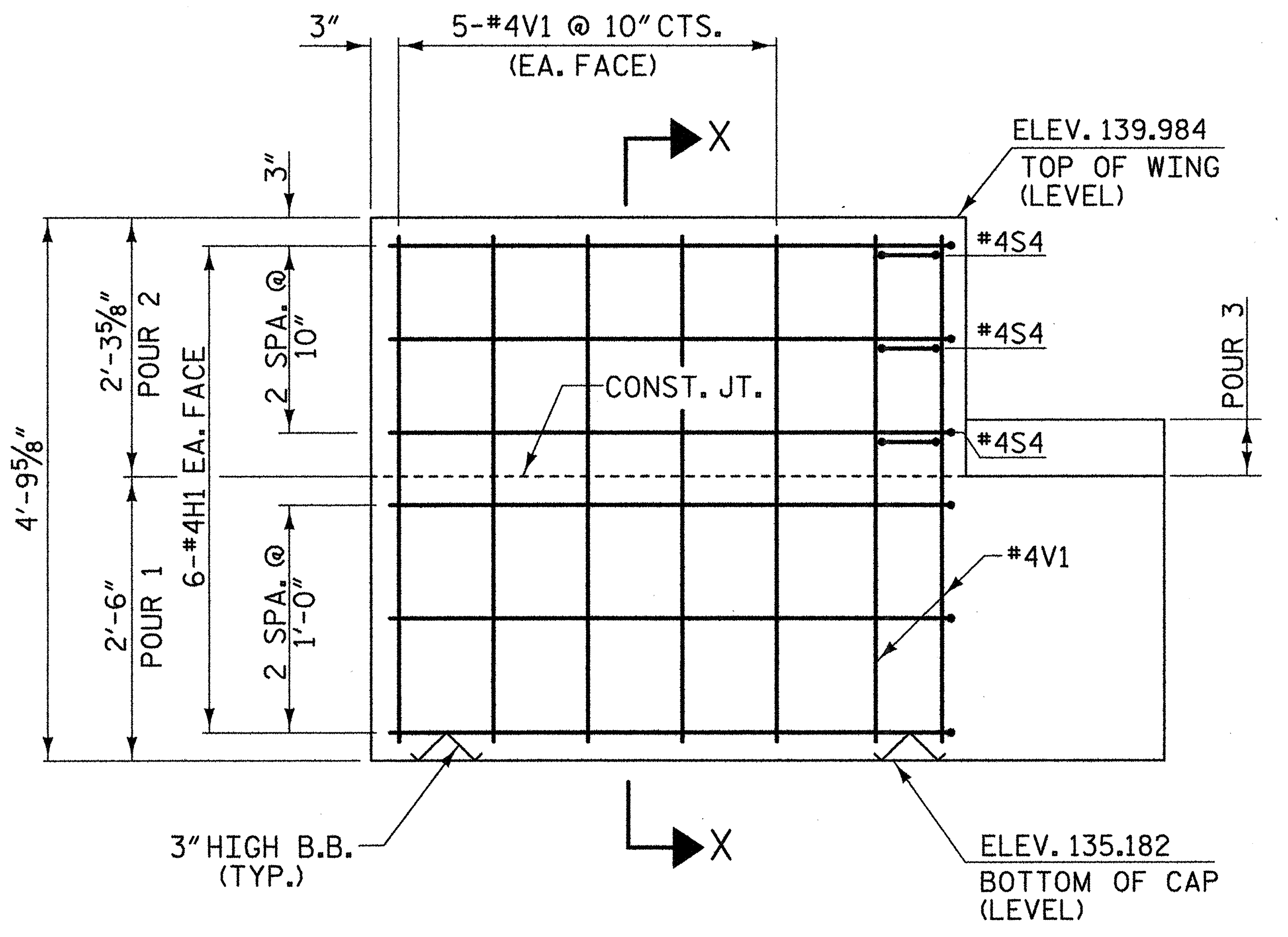
W2 PLAN OF RIGHT WING



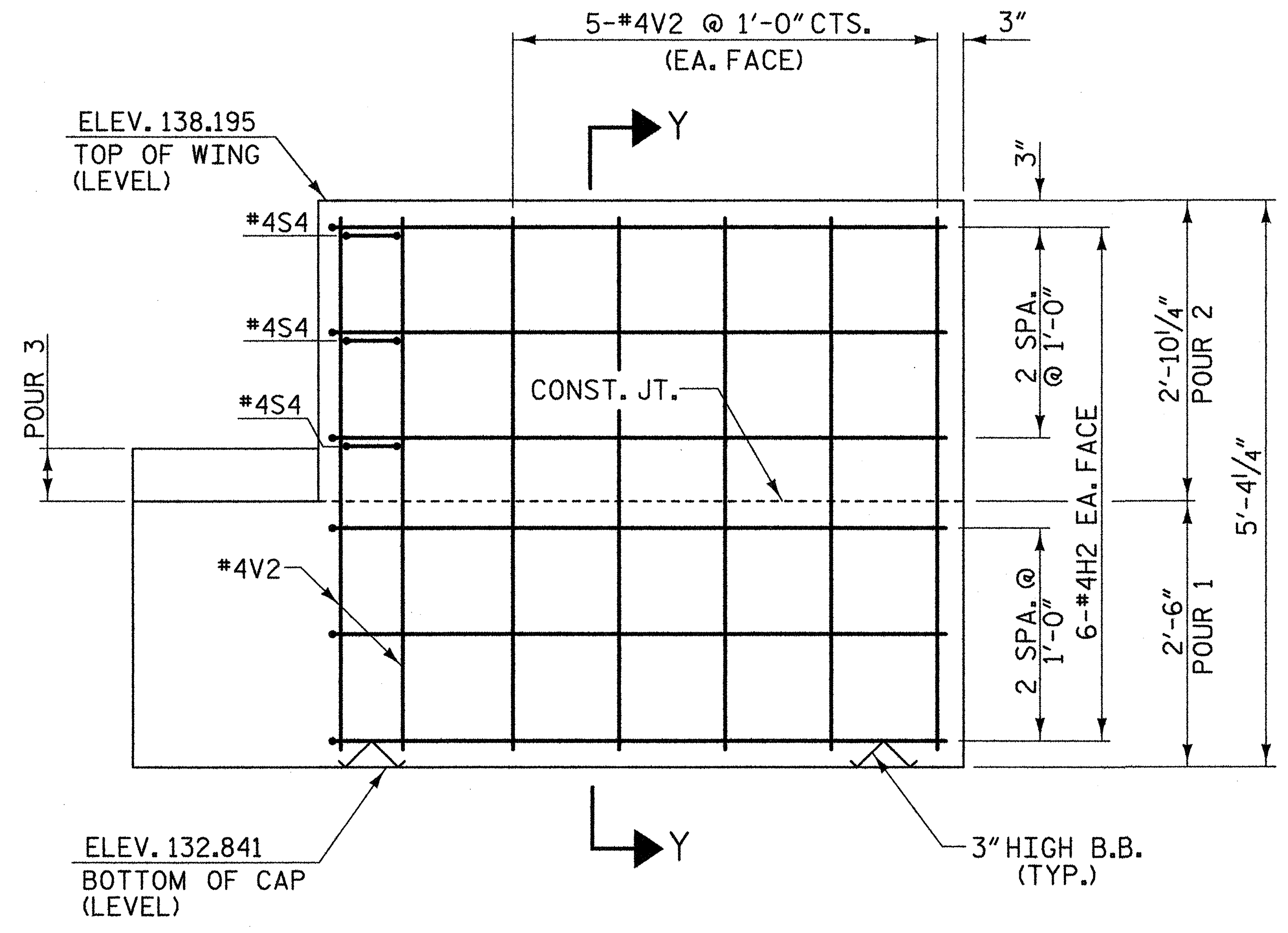
SECTION X-X



SECTION Y-Y



W1 ELEVATION OF LEFT WING



W2 ELEVATION OF RIGHT WING

PROJECT NO. 42562

ROBESON COUNTY

STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380 SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19661 L. KEVIN AUSTIN
L. Kevin Austin 8/11/10

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

29'-10" CLEAR ROADWAY - 90° SKEW

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

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CHECKED BY : L. K. AUSTIN DATE : 8/10

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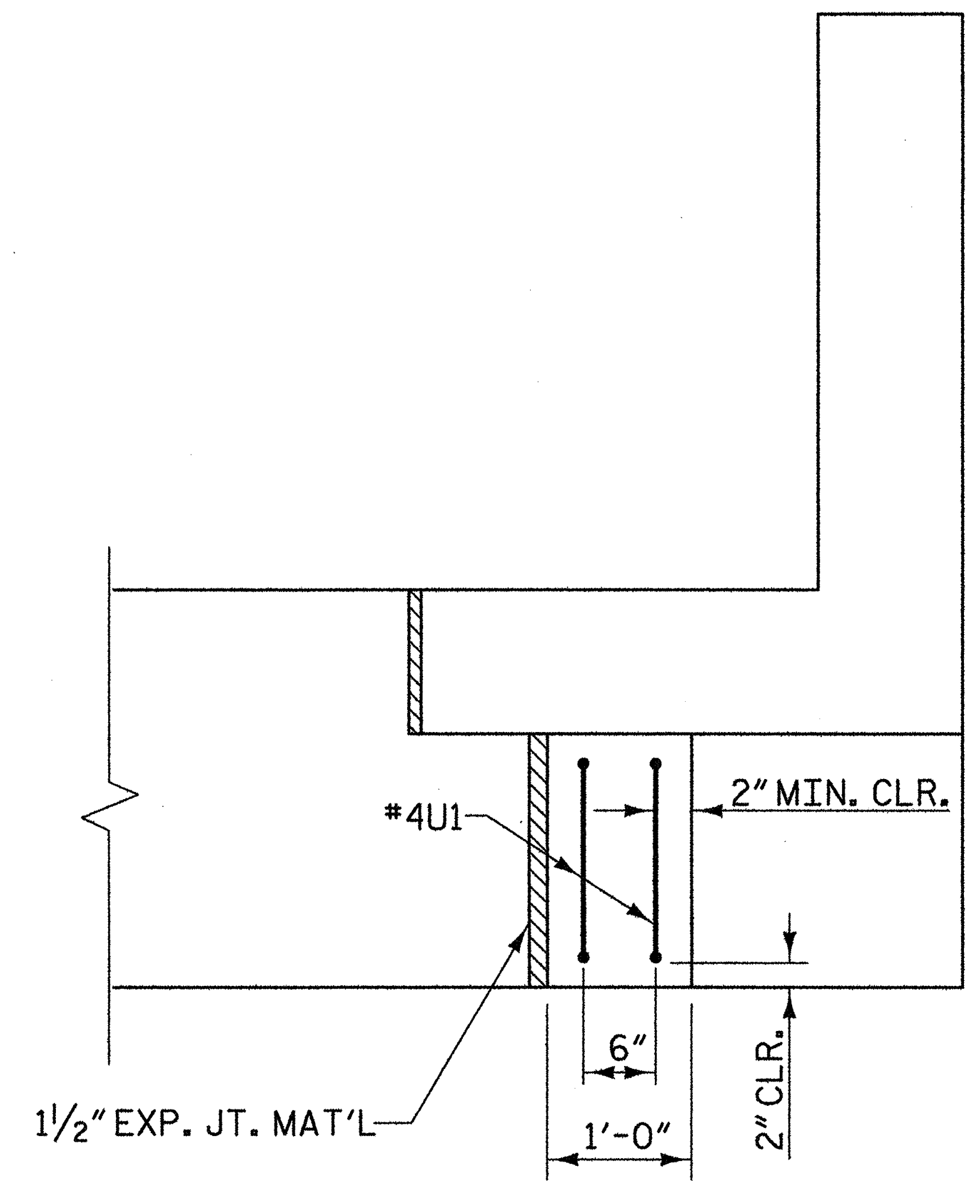
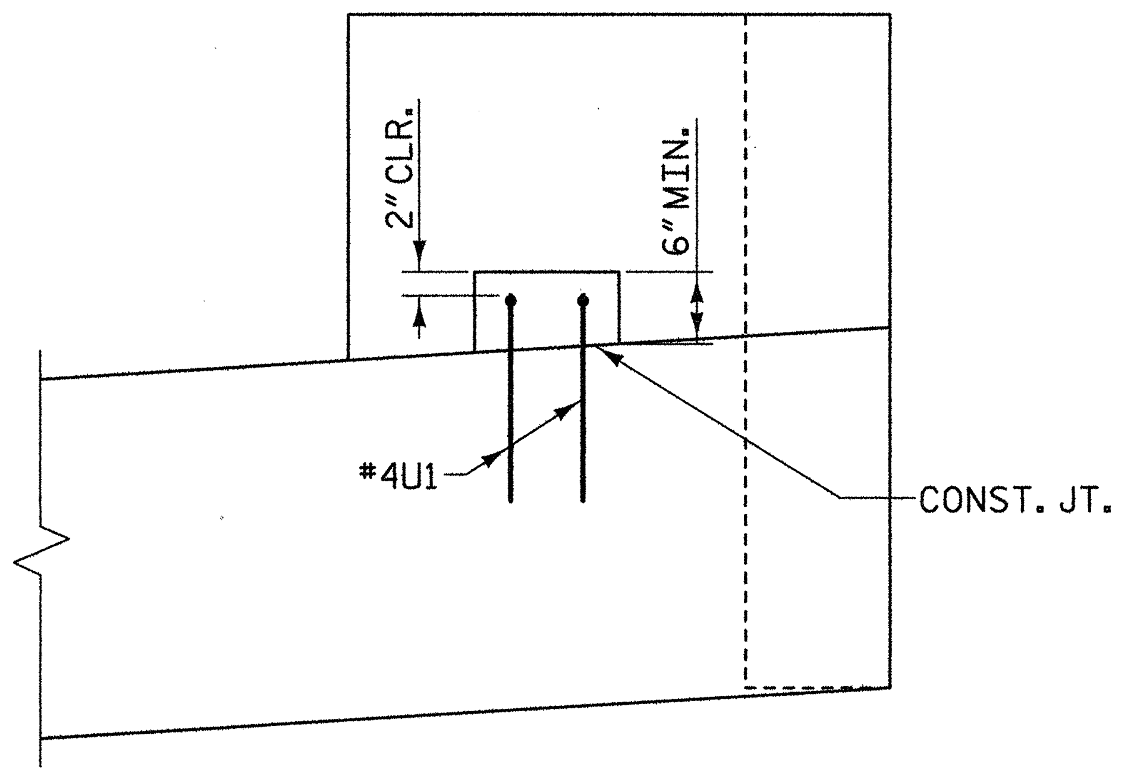
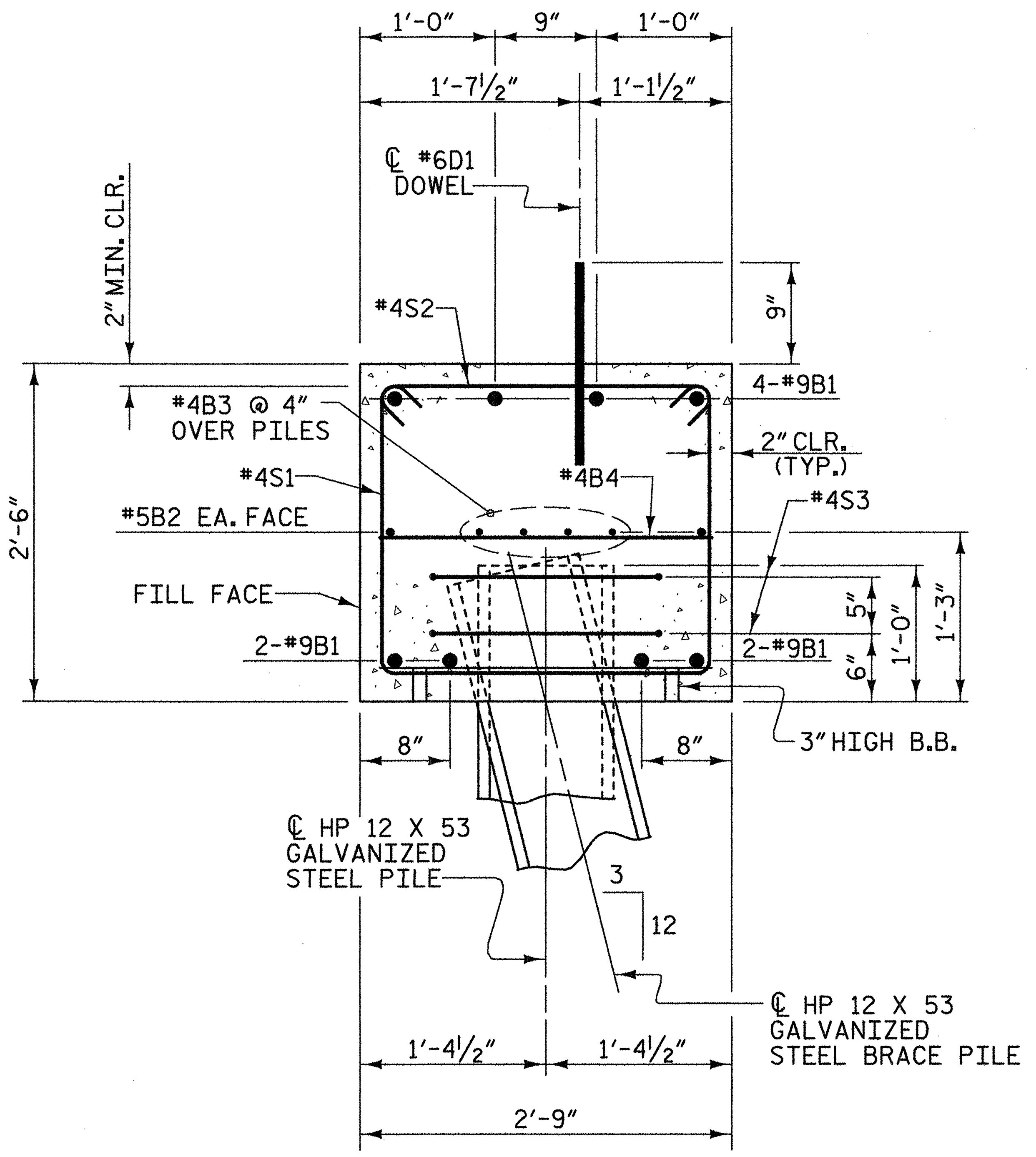


PLAN



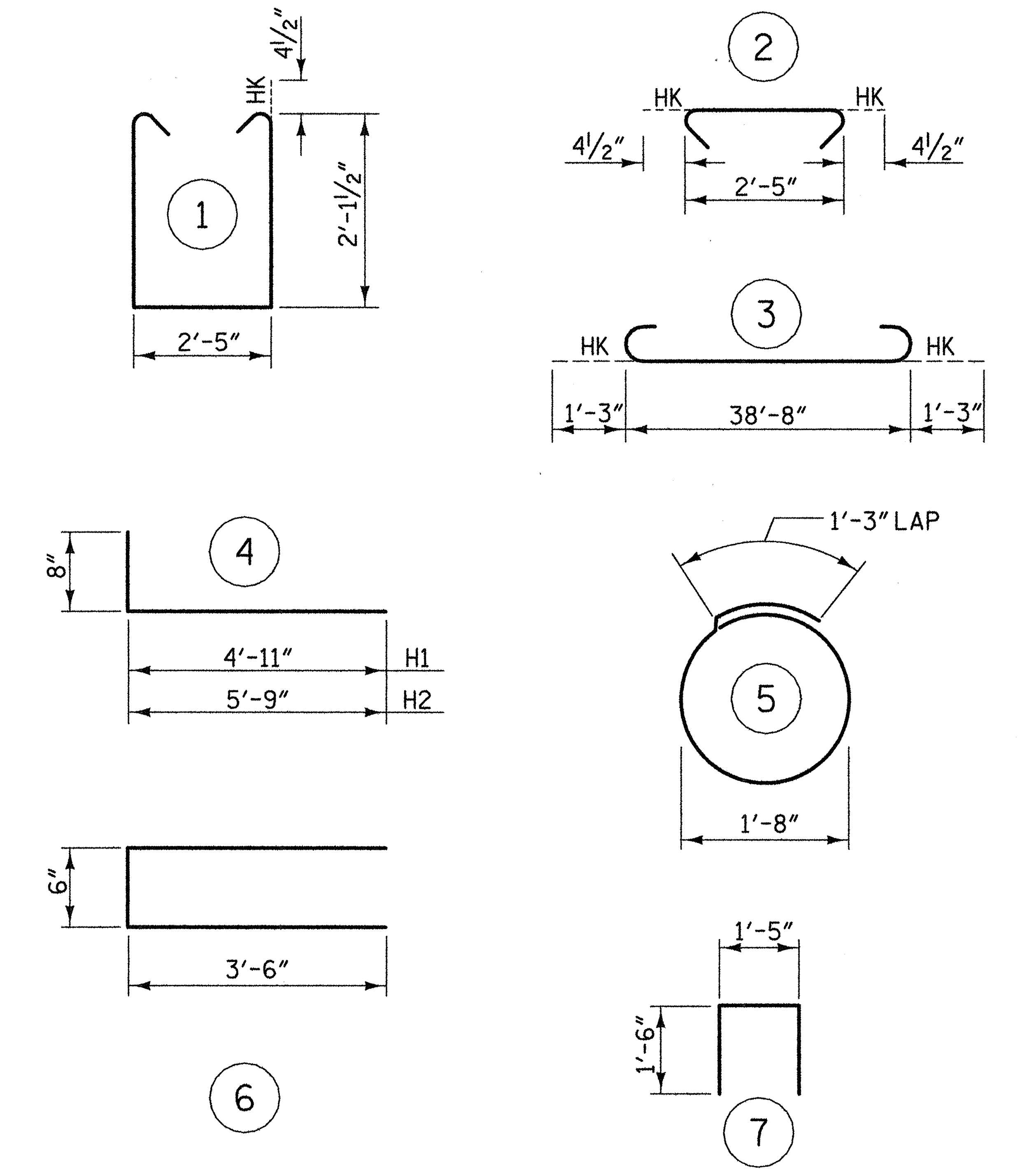
ELEVATION

LATERAL GUIDE DETAIL



SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	3	41'-2"	1120
B2	2	#5	STR	38'-8"	81
B3	8	#4	STR	20'-7"	110
B4	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	12	#4	4	5'-7"	45
H2	12	#4	4	6'-5"	51
S1	38	#4	1	7'-5"	188
S2	38	#4	2	3'-2"	80
S3	14	#4	5	6'-6"	61
S4	6	#4	6	7'-6"	30
U1	4	#4	7	4'-5"	12
V1	20	#4	STR	4'-5"	59
V2	20	#4	STR	5'-0"	67

TOTAL REINFORCING STEEL =		1970 lbs.
CLASS "A" CONCRETE - CU. YARDS		
	POUR 1	10.8 cu. yds.
	POUR 2	1.6 cu. yds.
	POUR 2	0.1 cu. yds.
	TOTAL	12.5 cu. yds.
HP 12 X 53 GALVANIZED STEEL PILES		
7 PILES REQUIRED - LIN. FEET		455

PROJECT NO. 42562

ROBESON COUNTY

STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380 SHEET 3 OF 3

L. Kevin Austin
19661
8/11/10

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

29'-10" CLEAR ROADWAY - 90° SKEW

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

SHEET NO.
20
TOTAL SHEETS
22

DRAWN BY : W. B. ALLEN DATE : 12/09
CHECKED BY : L. K. AUSTIN DATE : 8/10

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EROSION CONTROL PLAN

Std. #	**Description**	**Symbol**
1605.01	Temporary Silt Fence	—|||—|||—|||—
1606.01	Special Sediment Control Fence	╱╲╱╲╱╲
1607.01	Gravel Construction Entrance	
1622.01	Temporary Berms and Slope Drains	⊤ ← ←
1632.03	Rock Inlet Sediment Trap Type C	▣
1633.01	Temporary Rock Silt Check Type-A	▩

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2006 STANDARD SPECIFICATIONS

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1183
OVER WILKINSON CREEK
BETWEEN SR 1182 & SR 1174

29'-10" CLEAR ROADWAY - 90°SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	21
1			3			TOTAL SHEETS
2			4			22

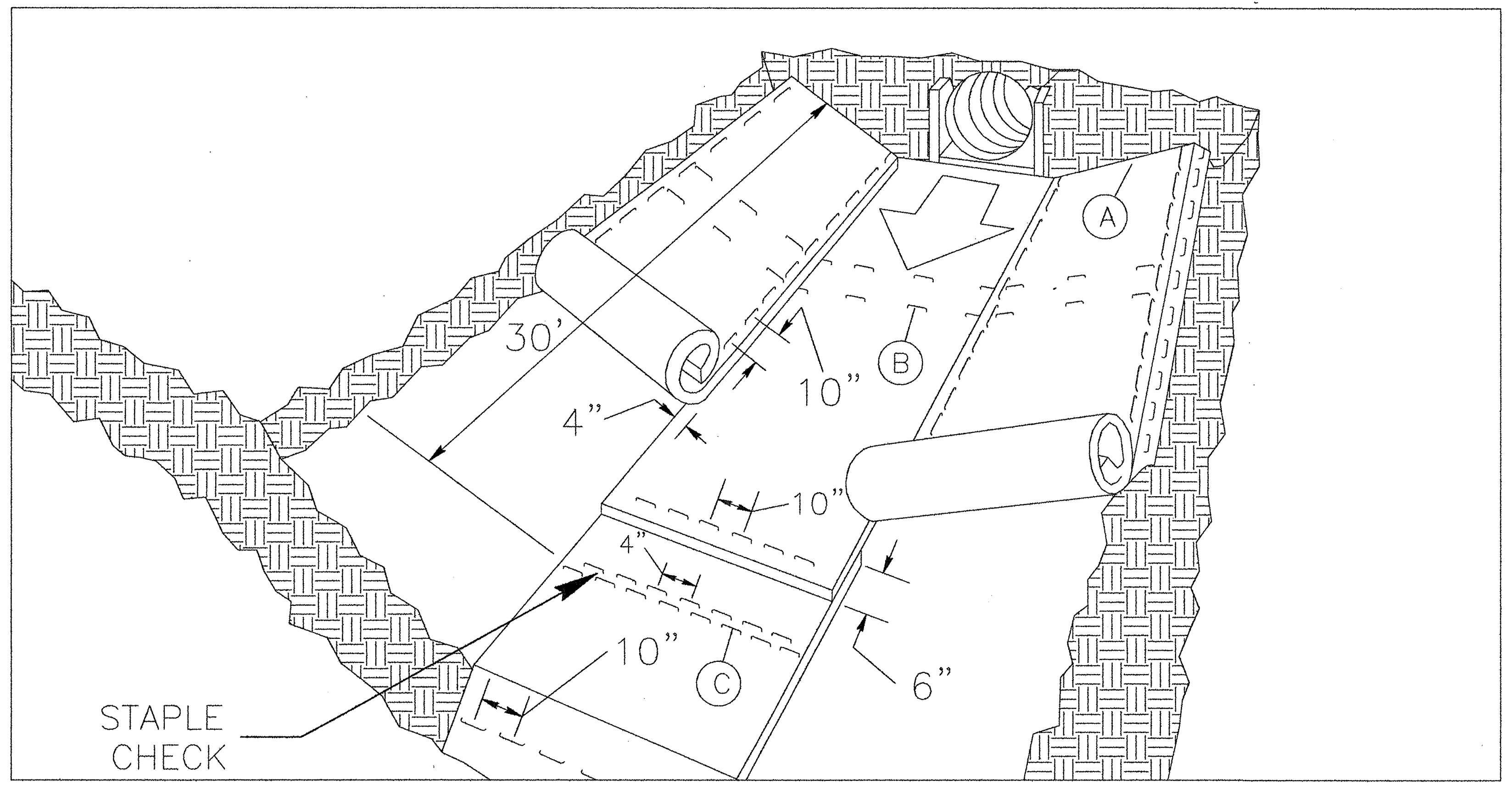
ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2006 STANDARD SPECIFICATIONS

MATTING INSTALLATION DETAIL

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.



MATTING IN DITCHES

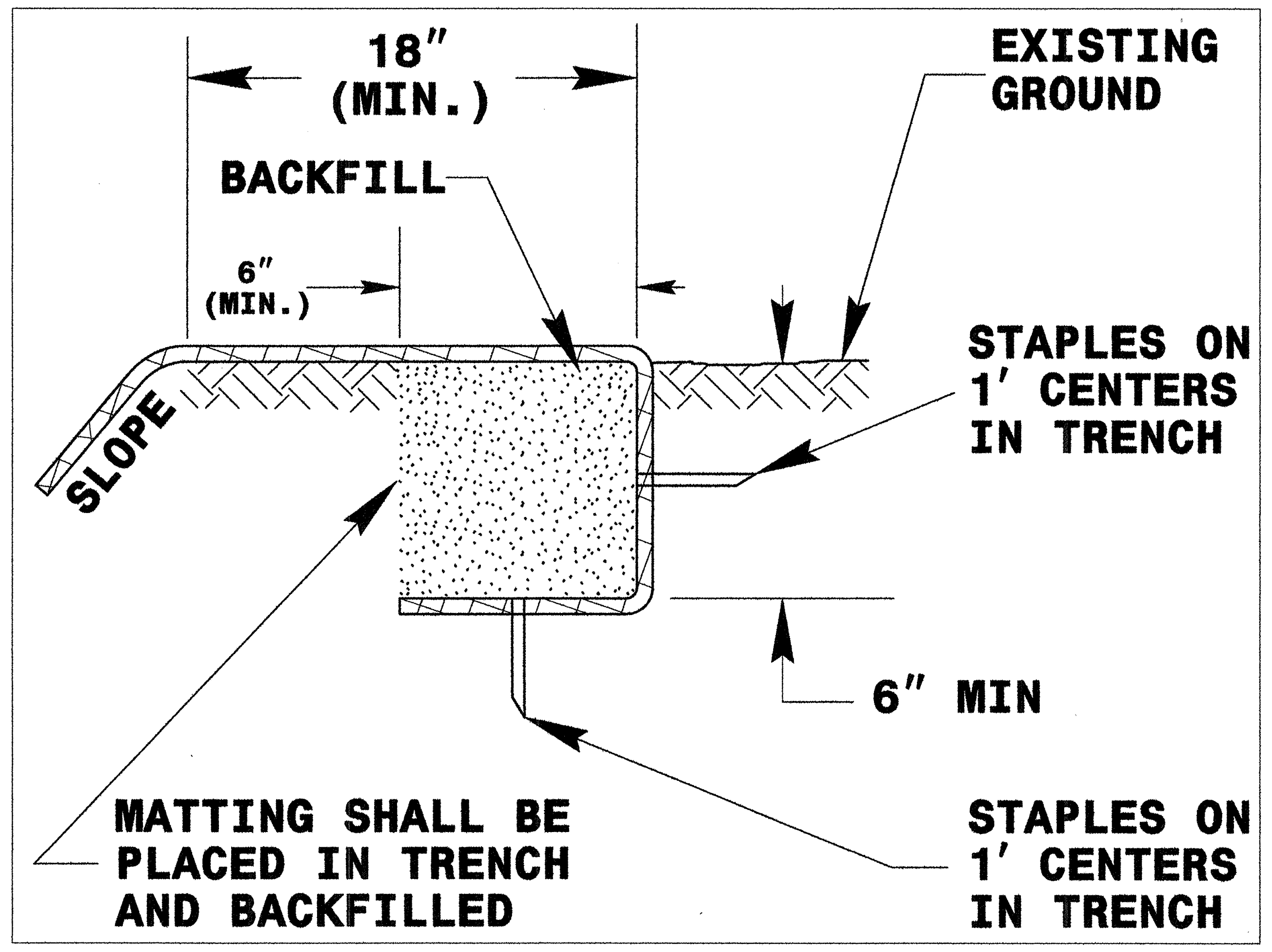
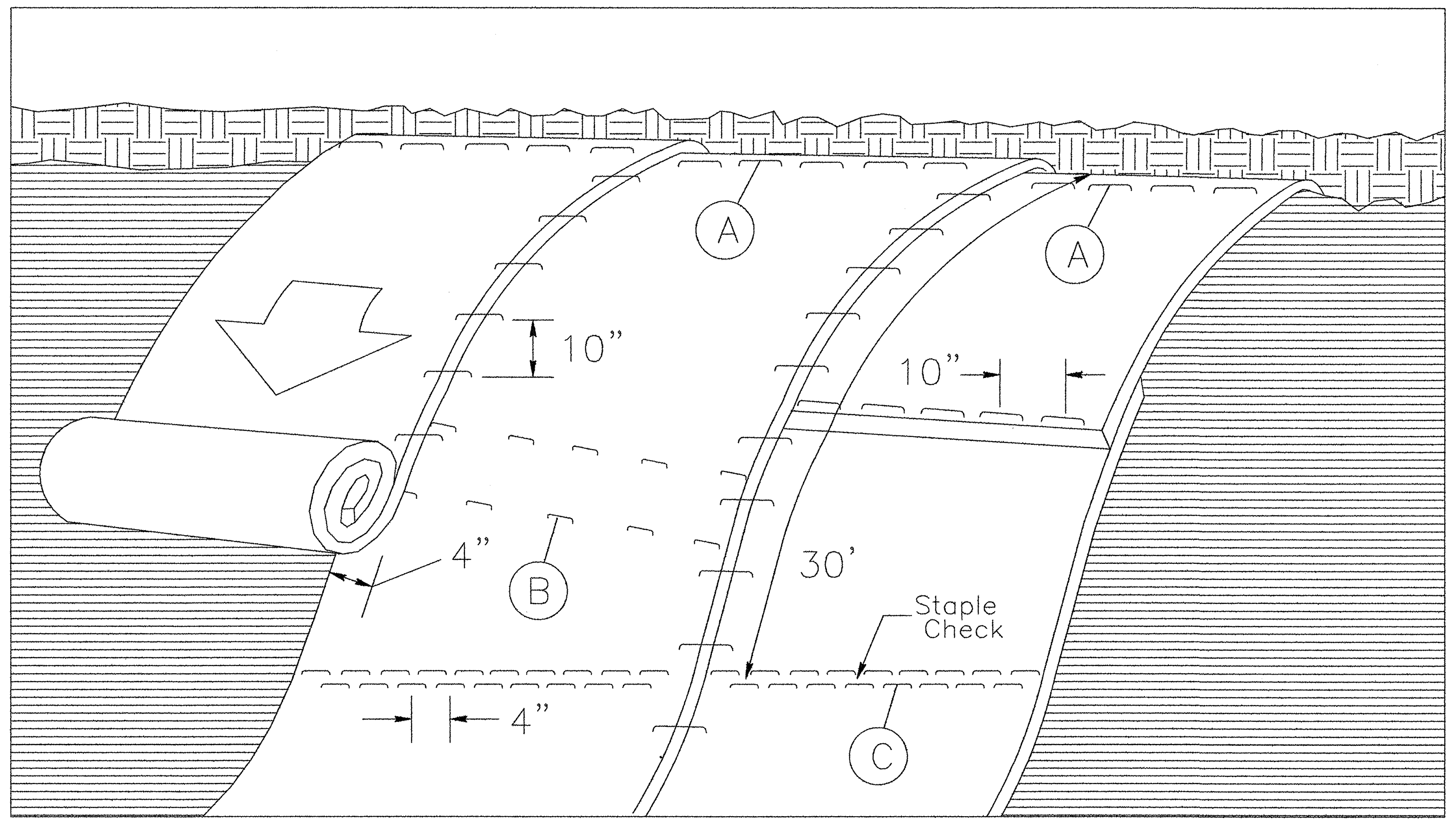


DIAGRAM Ⓐ



MATTING ON SLOPES

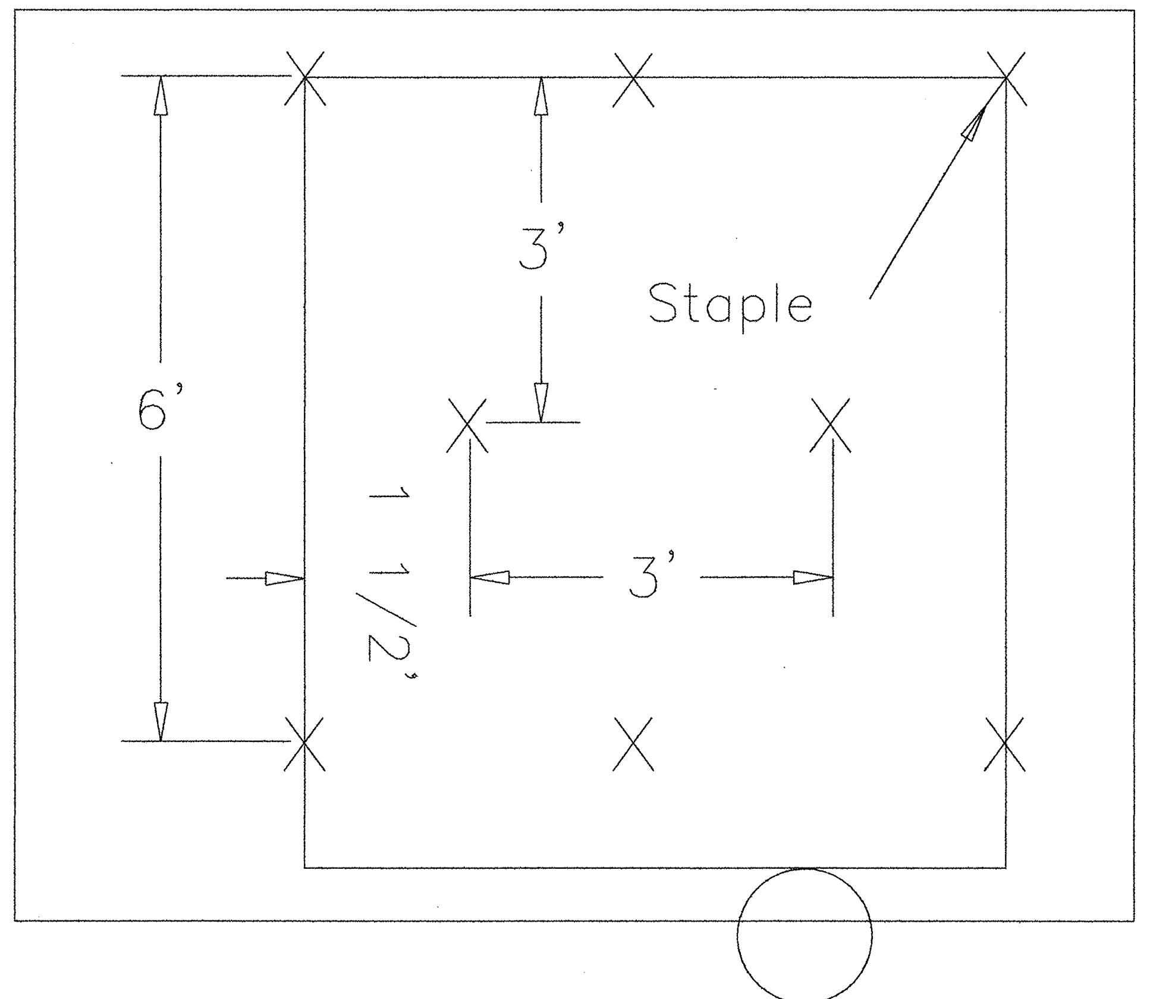


DIAGRAM B

Staple Check Pattern

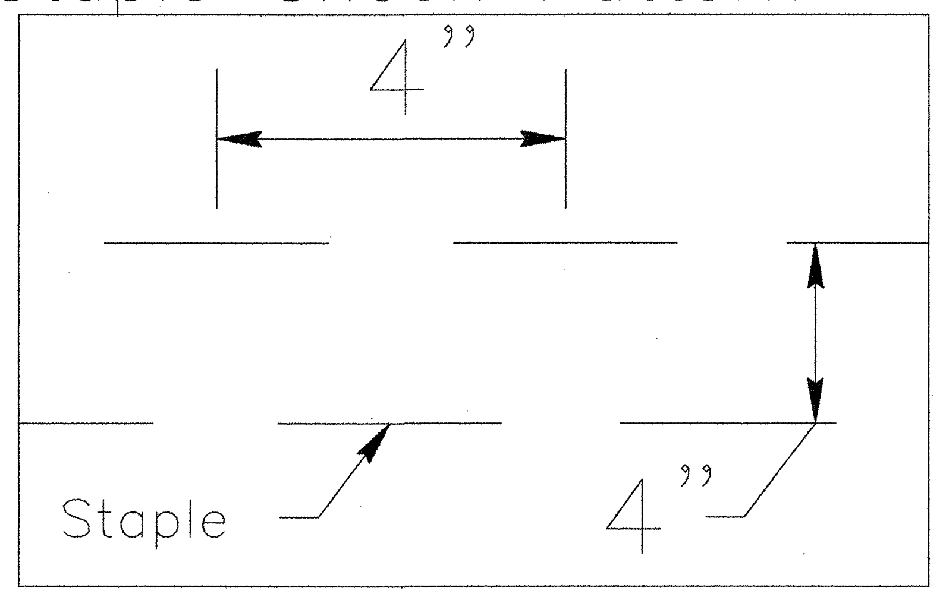


DIAGRAM Ⓒ

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

PROJECT NO. 42562
ROBESON COUNTY
STATION: 15+16.50 -L-

REPLACES BRIDGE NO. 380

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1183
OVER WILKINSON CREEK
BETWEEN SR 1182 & SR 1174

29'-10" CLEAR ROADWAY - 90°SKEW

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