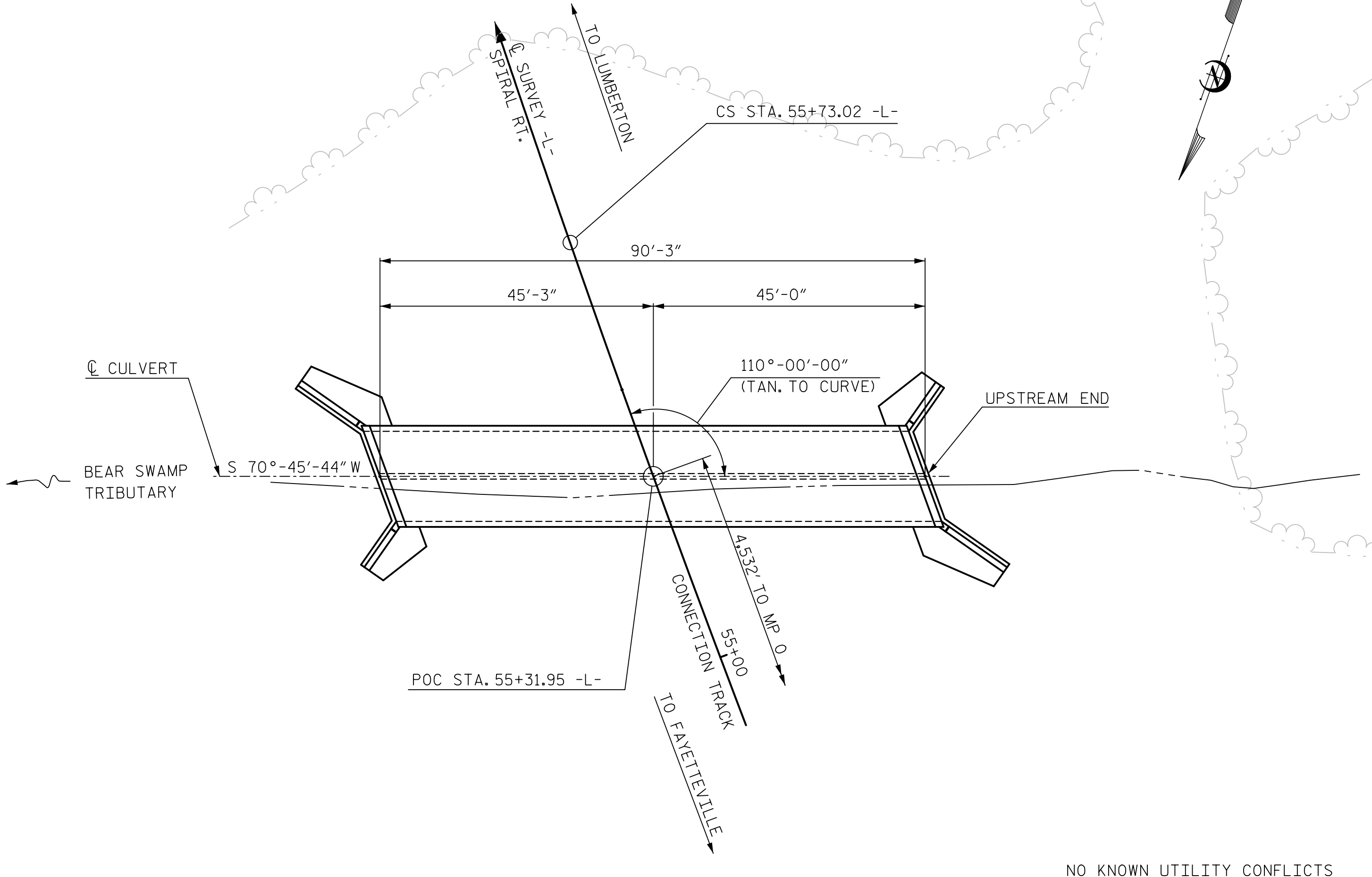


**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

BM - P4900 BY2-12 : -Y1- STA. 19+99.26, 26.34' RT.
N 341486.6412 E 1945040.0808 EL. 165.99



LOCATION SKETCH

GRADE DATA

TOP OF RAIL ELEV. @ POC STA. 55+31.95 -L- = 177.46
CULVERT BED ELEVATION @ POC STA. 55+31.95 -L- = 153.42
TRACKBED SLOPES 2:1

HYDRAULIC DATA

DESIGN DISCHARGE = 310 CFS
FREQUENCY OF DESIGN FLOOD = 100 YR.
DESIGN HIGH WATER ELEV. = 159.51
DRAINAGE AREA = 199 ACRES
BASIC DISCHARGE (Q100) = 310 CFS
BASIC HIGH WATER ELEV. = 159.51

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = N/A
FREQUENCY OF OVERTOPPING FLOOD = >500+ YR.
OVERTOPPING FLOOD ELEV. = 163.3

TOTAL STRUCTURE QUANTITIES	
CAST-IN-PLACE CONCRETE (4,500 PSI)	
BARREL @ 2.25 CY/FT	203.1 C.Y.
WING ETC.	26.8 C.Y.
TOTAL	229.9 C.Y.
REINFORCING STEEL	
BARREL	40,572 LBS.
WINGS ETC.	1,938 LBS.
TOTAL	42,510 LBS.
FOUNDATION CONDITIONING	
MATERIAL, BOX CULVERT	107 TONS
CULVERT EXCAVATION AT STATION POC 55+31.95 -L- LUMP SUM	
PLAIN RIP RAP, CLASS I	64 TONS

NOTES:

ASSUMED LIVE LOAD = AREMA E-80

THIS CULVERT HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF AREMA'S MANUAL FOR RAILWAY ENGINEERING, VOL. 2, STRUCTURES.

DESIGN FILL = 16.1' (BASE OF RAIL TO TOP OF STRUCTURE)

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

FOR OTHER DESIGN DATA AND NOTES SEE STRUCTURE STANDARD NOTE SHEET.

3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. CONSTRUCTION JOINTS SHALL BE A MINIMUM OF 10' FROM THE END OF THE BARREL AND SHALL NOT BE LOCATED WITHIN 14' NORMAL OF PROPOSED TRACK LOCATION.

CULVERT AND WINGS SHALL BE CONSTRUCTED USING CAST-IN-PLACE CONCRETE WITH f'c = 4,500 psi. FOR CONCRETE AND REINFORCING, SEE "CAST-IN-PLACE CONCRETE" SPECIAL PROVISION.

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:

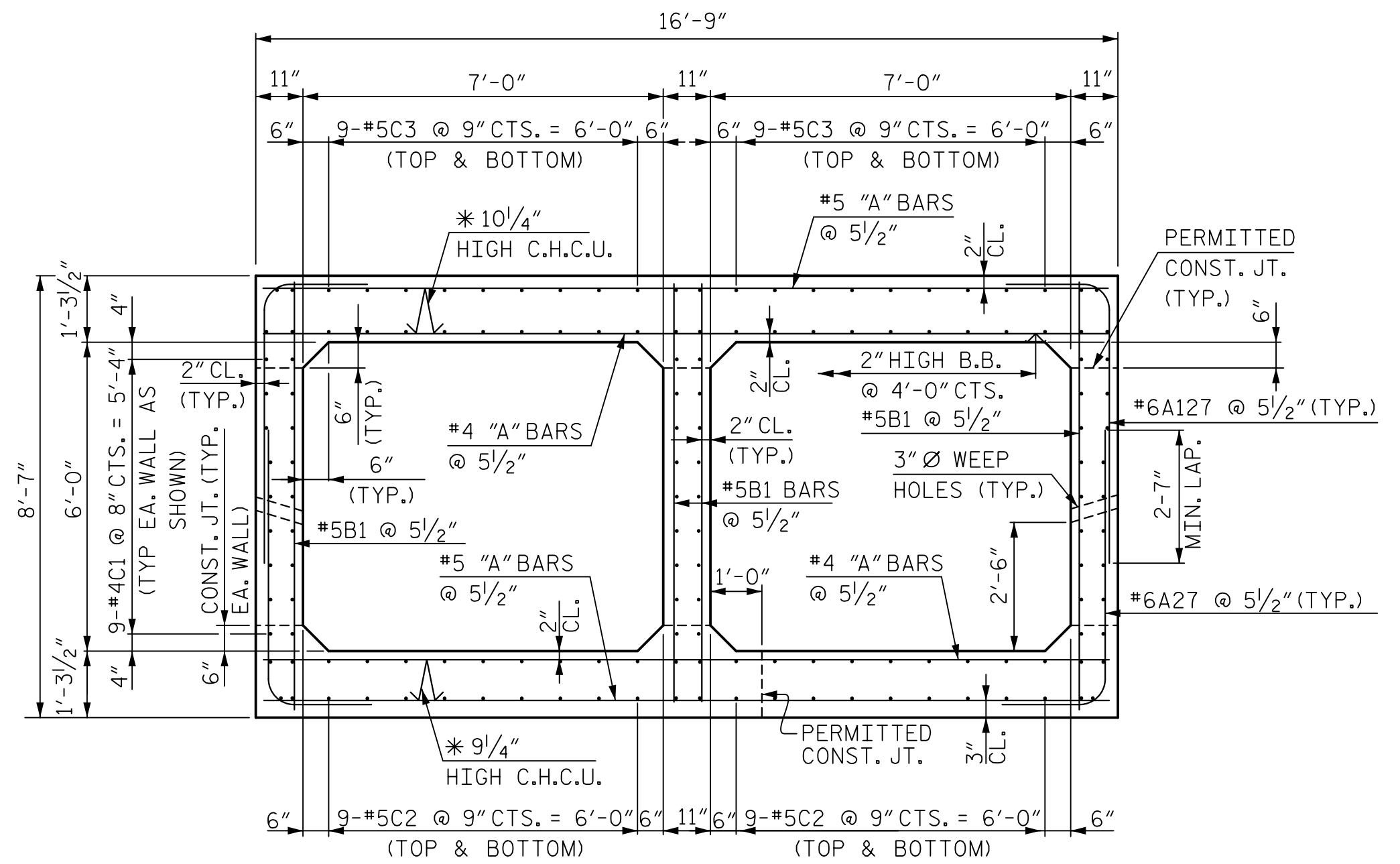
1. WING FOOTINGS AND FLOOR SLAB INCLUDING 6" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

NO BACKFILLING OF EXTERIOR WALLS SHALL BE PERMITTED UNTIL TOP SLAB HAS BEEN PLACED AND CURED. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARILY BRACING WALLS UNTIL TOP SLAB IS COMPLETED.

BED MATERIAL PLACED BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL BETWEEN THE LOWER SILLS. THE MATERIAL SHALL BE NATURAL STONE WITH A GRADATION SIZE SIMILAR TO THAT OF CLASS I RIP RAP. BED MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER.

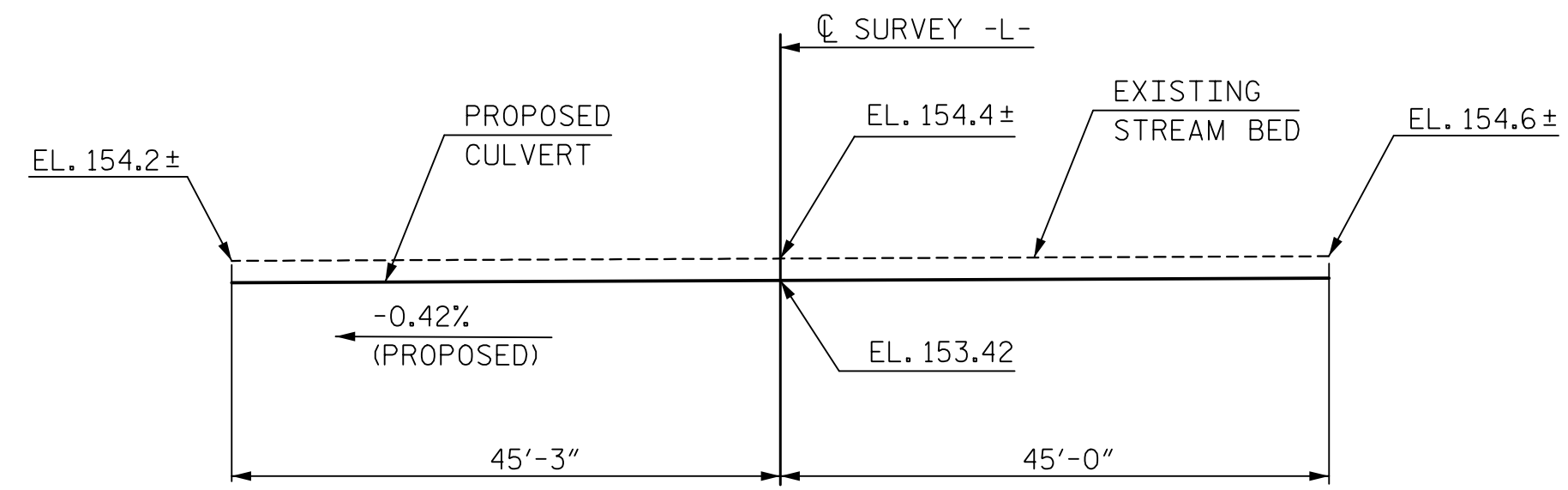
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.



RIGHT ANGLE SECTION OF BARREL

THERE ARE 150 LINES OF "C" BARS IN SECTION OF BARREL

* ALL CONTINUOUS HIGH CHAIR UPPER (CHCU) @ 3'-0" CTS.

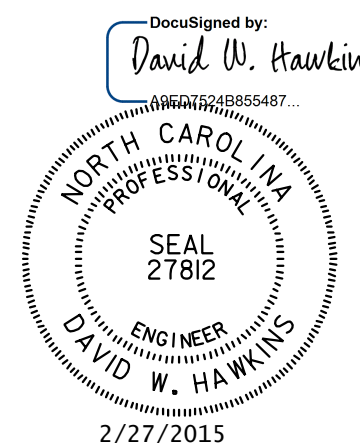
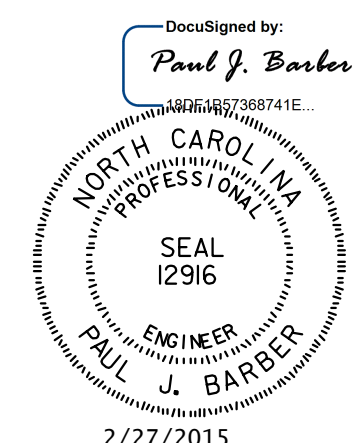


PROFILE ALONG CULVERT

THE AREA CONTAINING THE CULVERT IS TO BE UNDERCUT TO PROVIDE THE NECESSARY STABILITY FOR THE TRACKBED. SEE TRACKWORK PLANS FOR DETAILS. NO UNDERCUT PAY ITEM ASSOCIATED WITH THE CULVERT CONSTRUCTION IS REQUIRED.

PROJECT NO. P-4900A
ROBESON COUNTY
STATION: POC 55+31.95 -L-
MILE POST: 0.86

SHEET 1 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

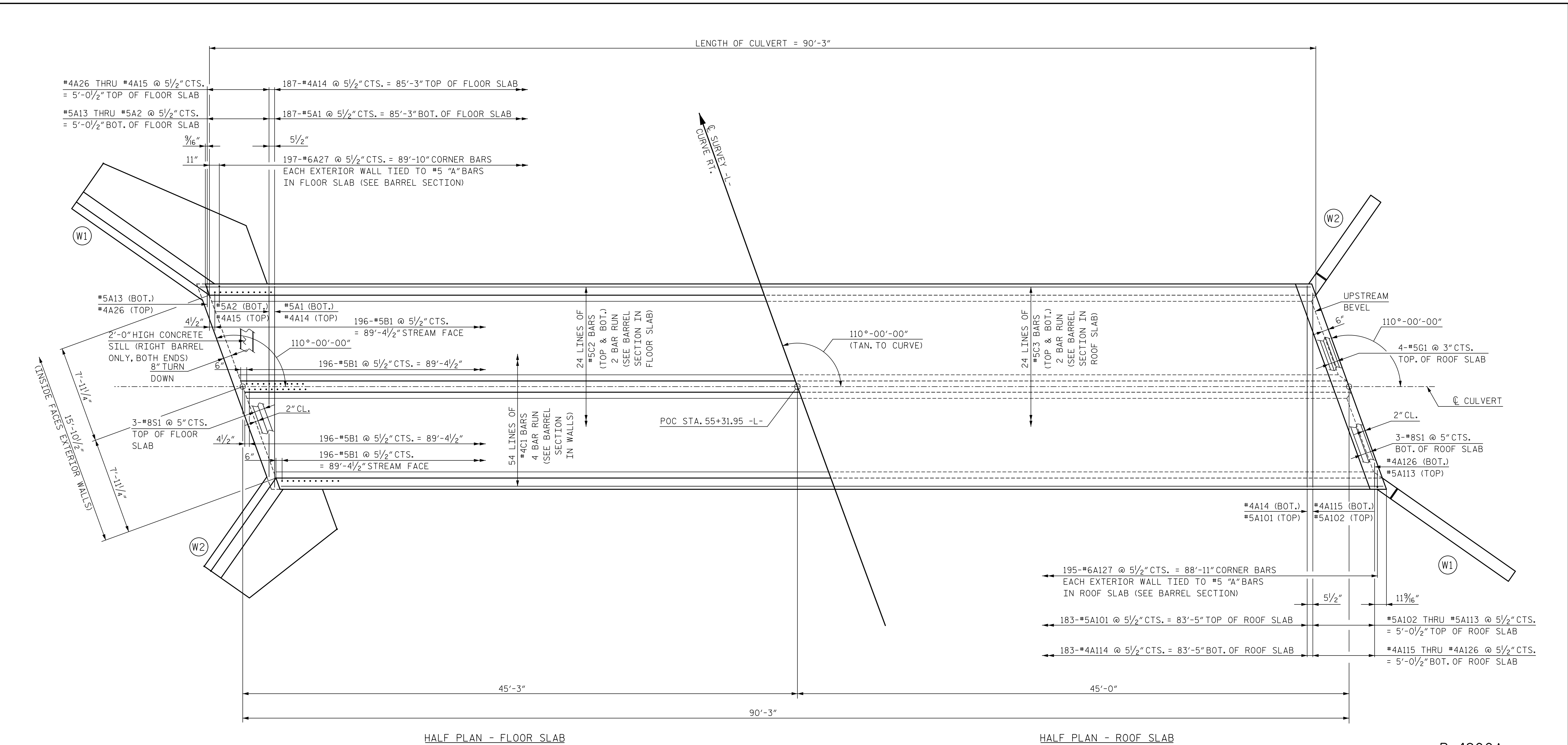
GENERAL DRAWING

DOUBLE 7' X 6'
CONCRETE BOX CULVERT
AT POC STA. 55+31.95 -L-

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1	
1	J. BAYNE	7/14	3			TOTAL SHEETS	
2	P. BARBER	8/14	4			6	

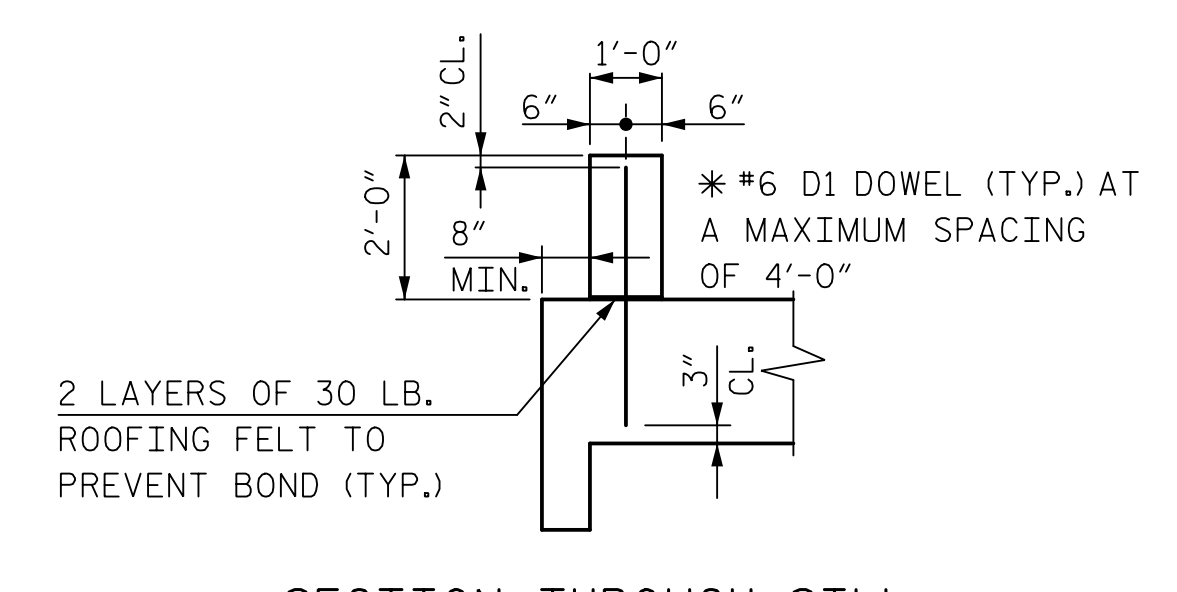
HNTB HNTB NORTH CAROLINA, P.C.
License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY: J. BAYNE DATE: 7/14
CHECKED BY: P. BARBER DATE: 8/14 DWG. NO. 1

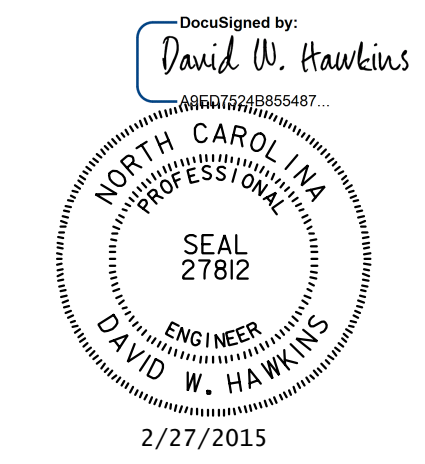
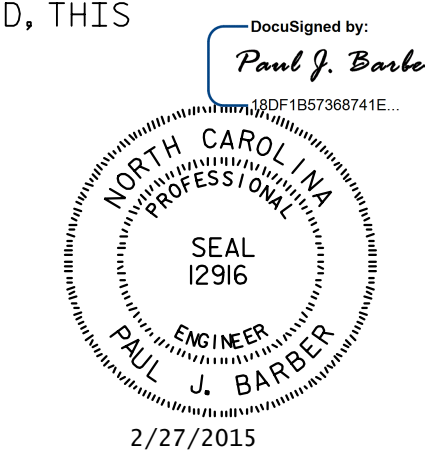
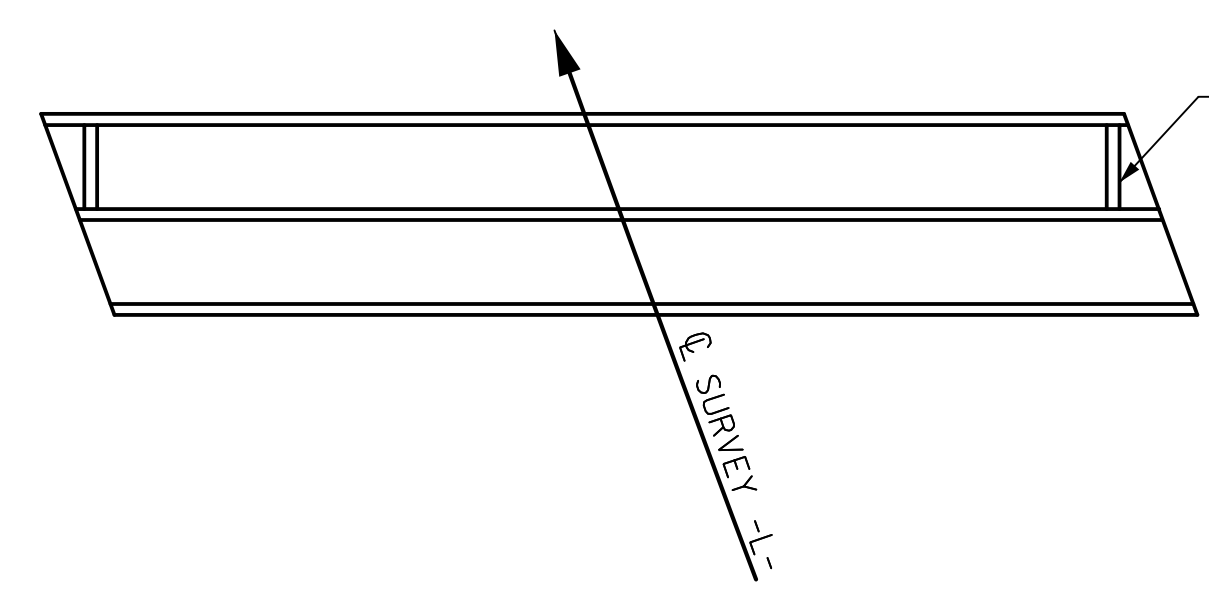
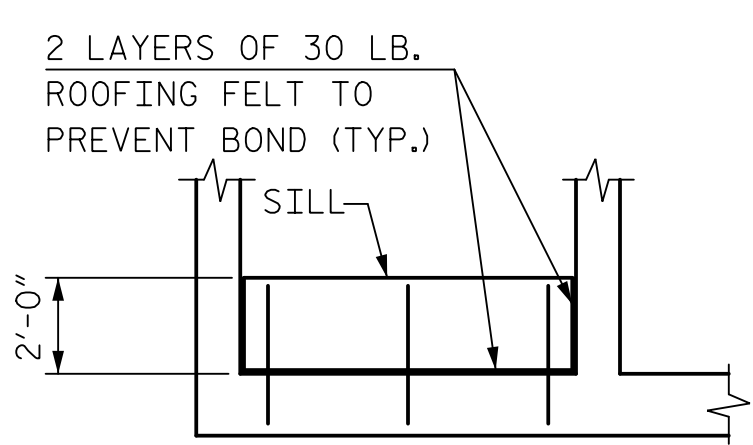


PLAN

PROJECT NO. P-4900A
ROBESON COUNTY
 STATION: POC 55+31.95 -L-
 MILE POST: 0.86
 SHEET 2 OF 6



* DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SLAB HAS BEEN FLOAT FINISHED.



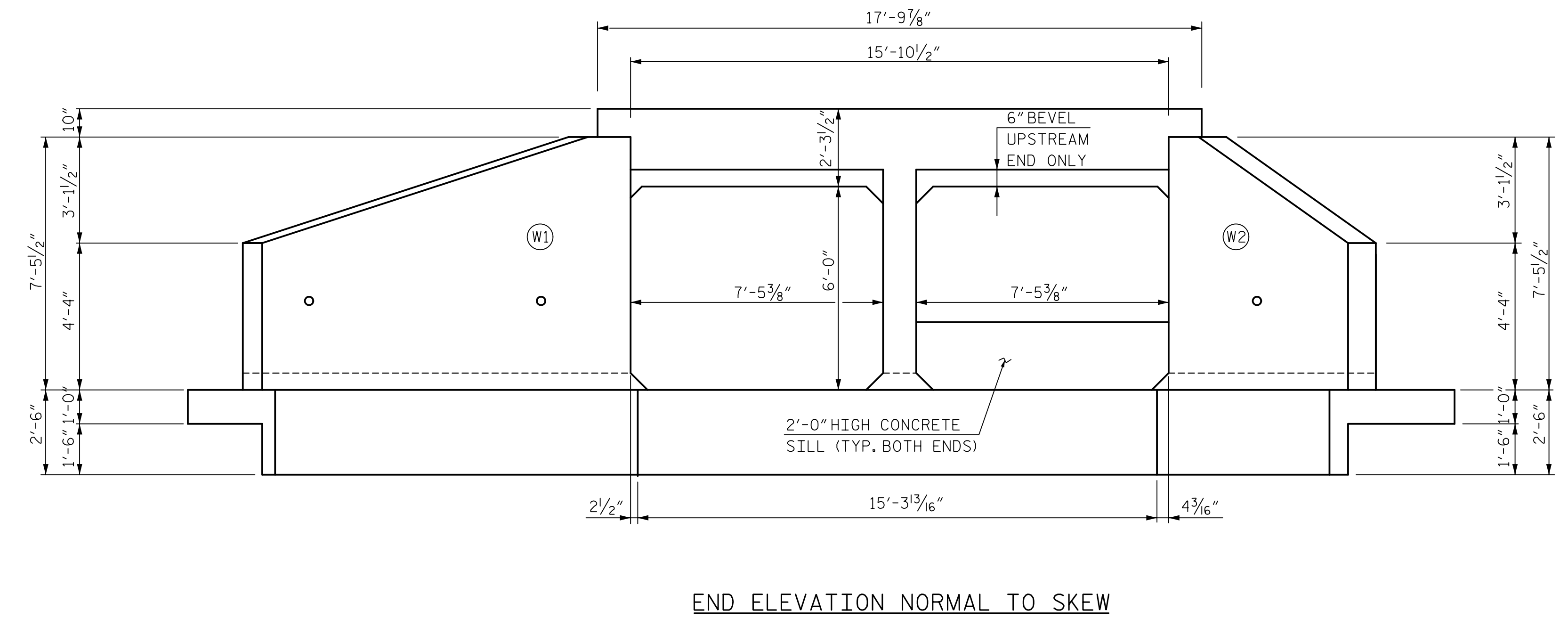
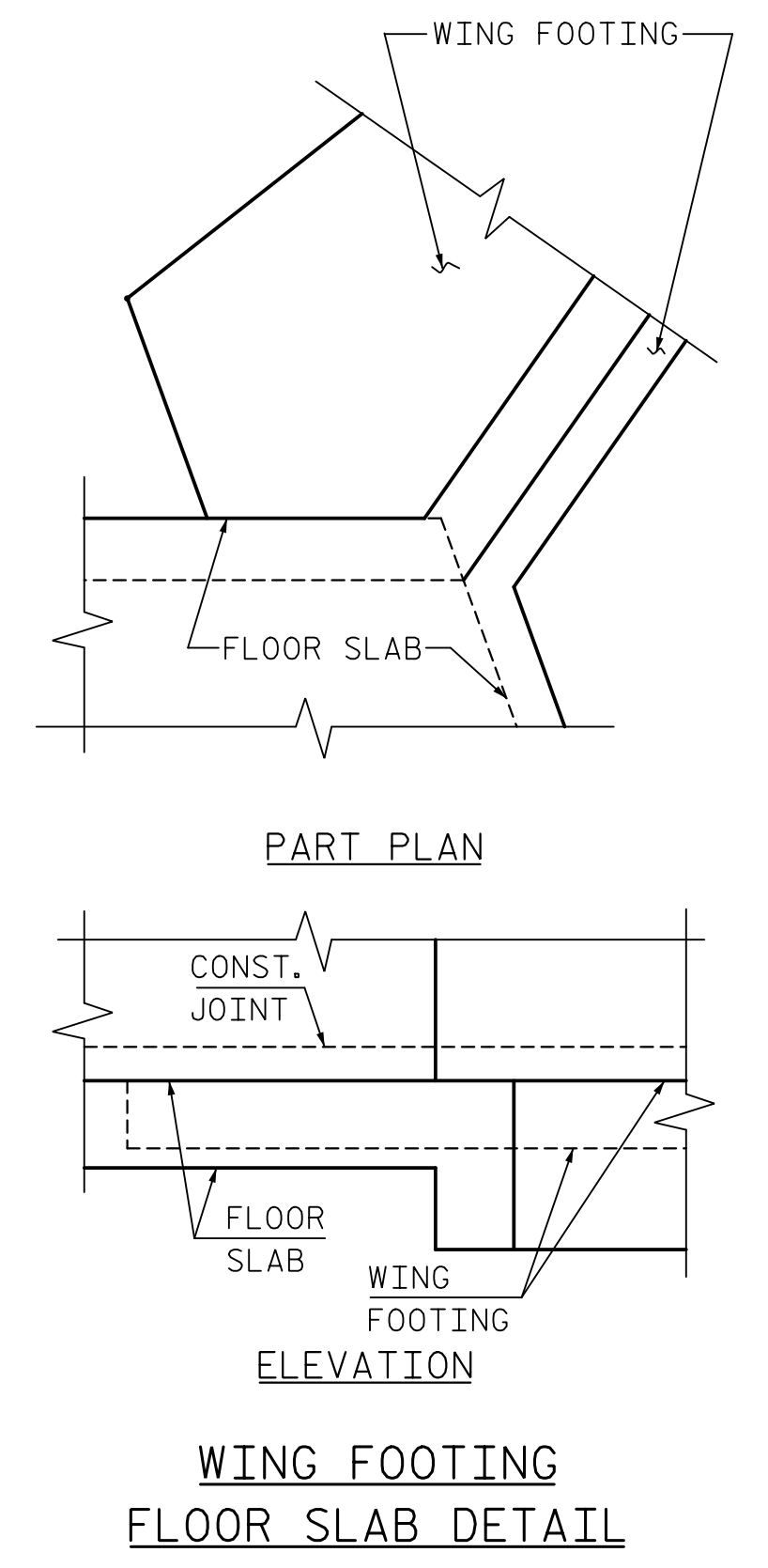
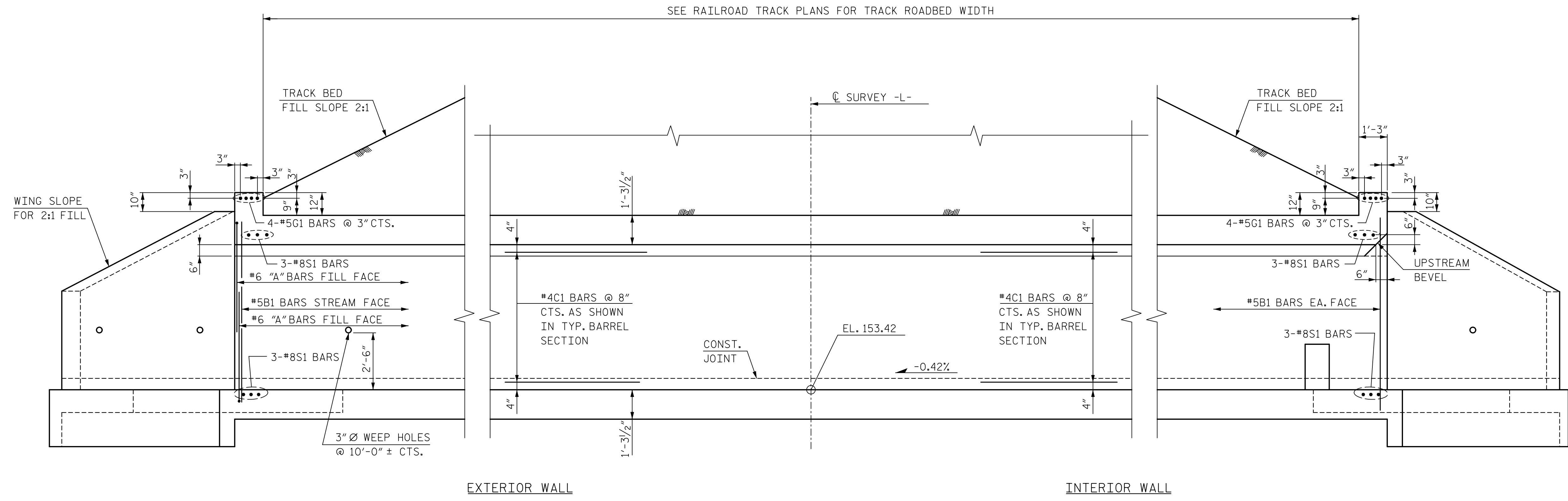
HNTB		HNTB NORTH CAROLINA, P.C. License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609	
DRAWN BY: J. BAYNE	DATE: 7/14	DWG. NO. 2	
CHECKED BY: P. BARBER	DATE: 8/14		

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

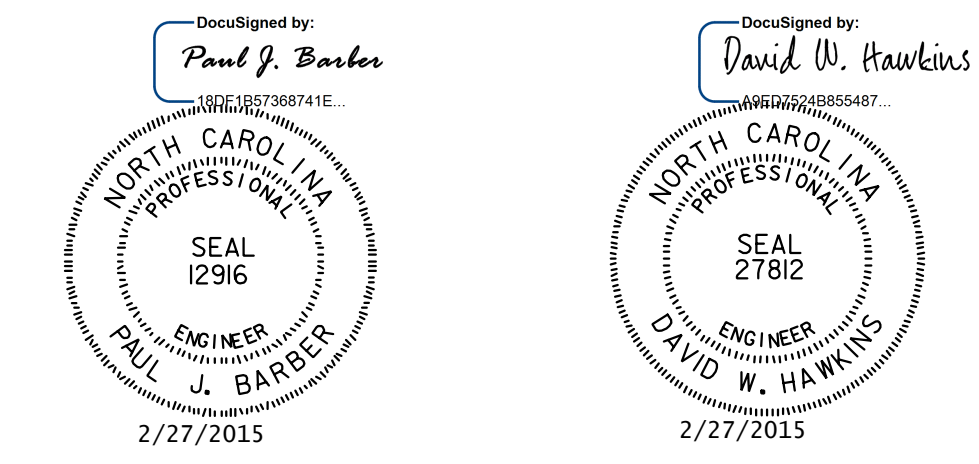
PLAN
 DOUBLE 7 FT. x 6 FT.
 CONCRETE BOX CULVERT
 AT POC STA. 55+31.95 -L-

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

C-2
 TOTAL SHEETS
 6



PROJECT NO. P-4900A
ROBESON COUNTY
 STATION: POC 55+31.95 -L-
 MILE POST: 0.86
 SHEET 3 OF 6



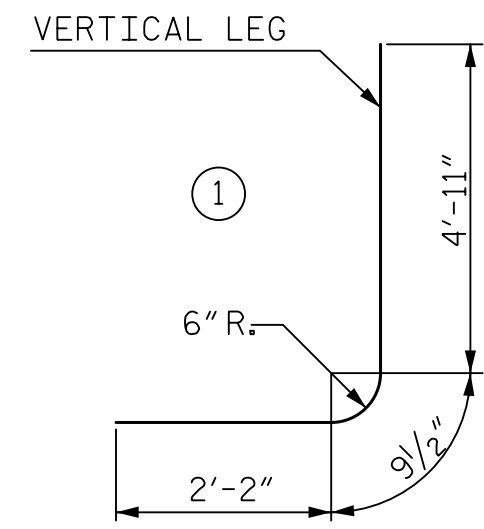
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SECTION AND ELEVATION

DOUBLE 7 FT. x 6 FT.
 CONCRETE BOX CULVERT
 AT POC STA. 55+31.95 -L-

HNTB HNTB NORTH CAROLINA, P.C. License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609		REVISIONS		SHEET NO.
DRAWN BY: J. BAYNE	DATE: 7/14	NO. 3	BY:	C-3
CHECKED BY: P. BARBER	DATE: 8/14	NO. 4	DATE:	
				TOTAL SHEETS: 6

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

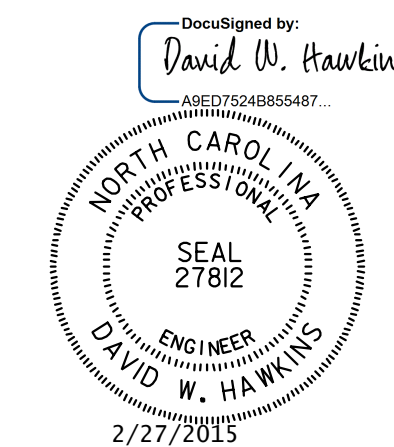
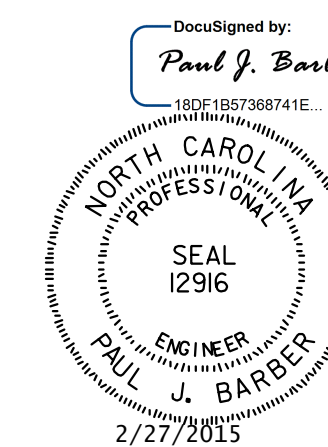
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
A1	187	5	STR.	16'-5"	3,202	
A2	2	5	STR.	15'-5"	32	
A3	2	5	STR.	14'-2"	30	
A4	2	5	STR.	12'-11"	27	
A5	2	5	STR.	11'-8"	24	
A6	2	5	STR.	10'-5"	22	
A7	2	5	STR.	9'-2"	19	
A8	2	5	STR.	7'-11"	17	
A9	2	5	STR.	6'-8"	14	
A10	2	5	STR.	5'-5"	11	
A11	2	5	STR.	4'-1"	9	
A12	2	5	STR.	2'-10"	6	
A13	2	5	STR.	1'-7"	3	
A14	187	4	STR.	16'-5"	2,051	
A15	2	4	STR.	15'-5"	21	
A16	2	4	STR.	14'-2"	19	
A17	2	4	STR.	12'-11"	17	
A18	2	4	STR.	11'-8"	16	
A19	2	4	STR.	10'-5"	14	
A20	2	4	STR.	9'-2"	12	
A21	2	4	STR.	7'-11"	11	
A22	2	4	STR.	6'-8"	9	
A23	2	4	STR.	5'-5"	7	
A24	2	4	STR.	4'-1"	5	
A25	2	4	STR.	2'-10"	4	
A26	2	4	STR.	1'-7"	2	
A27	392	6	1	7'-11"	4,661	
A101	183	5	STR.	16'-5"	3,133	
A102	2	5	STR.	15'-5"	32	
A103	2	5	STR.	14'-2"	30	
A104	2	5	STR.	12'-11"	27	
A105	2	5	STR.	11'-8"	24	
A106	2	5	STR.	10'-5"	22	
A107	2	5	STR.	9'-2"	19	
A108	2	5	STR.	7'-11"	17	
A109	2	5	STR.	6'-8"	14	
A110	2	5	STR.	5'-5"	11	
A111	2	5	STR.	4'-1"	9	
A112	2	5	STR.	2'-10"	6	
A113	2	5	STR.	1'-7"	3	
A114	183	4	STR.	16'-5"	2,007	
A115	2	4	STR.	15'-5"	21	
A116	2	4	STR.	14'-2"	19	
A117	2	4	STR.	12'-11"	17	
A118	2	4	STR.	11'-8"	16	
A119	2	4	STR.	10'-5"	14	
A120	2	4	STR.	9'-2"	12	
A121	2	4	STR.	7'-11"	11	
A122	2	4	STR.	6'-8"	9	
A123	2	4	STR.	5'-5"	7	
A124	2	4	STR.	4'-1"	5	
A125	2	4	STR.	2'-10"	4	
A126	2	4	STR.	1'-7"	2	
A127	390	6	STR.	7'-11"	4,637	
B1	784	5	STR.	8'-2"	6,678	
C1	216	4	STR.	23'-11"	3,451	
C2	96	5	STR.	46'-11"	4,698	
C3	96	5	STR.	46'-2"	4,623	
D1	6	6	STR.	2'-10"	26	
G1	8	5	STR.	17'-5"	145	
S1	12	8	STR.	17'-5"	558	
REINFORCING STEEL					LBS.	40,572

SPLICE LENGTH CHART

BAR	SIZE	SPLICE LENGTH
C BARS IN WALLS	#4	1'-11"
C BARS IN SLABS	#5	2'-5"

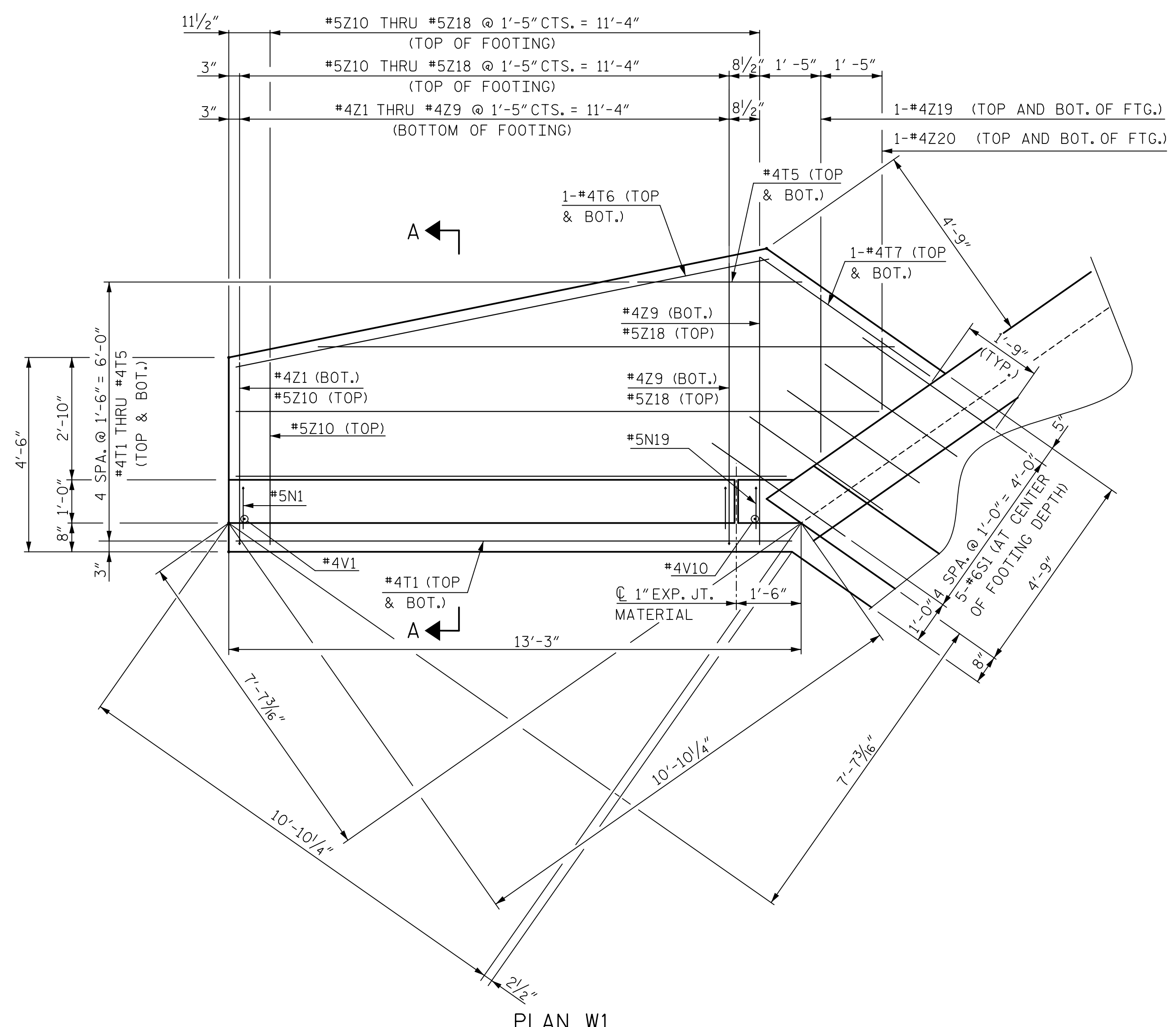
PROJECT NO. P-4900A
ROBESON COUNTY
 STATION: POC 55+31.95 -L-
 MILE POST: 0.86

SHEET 4 OF 6

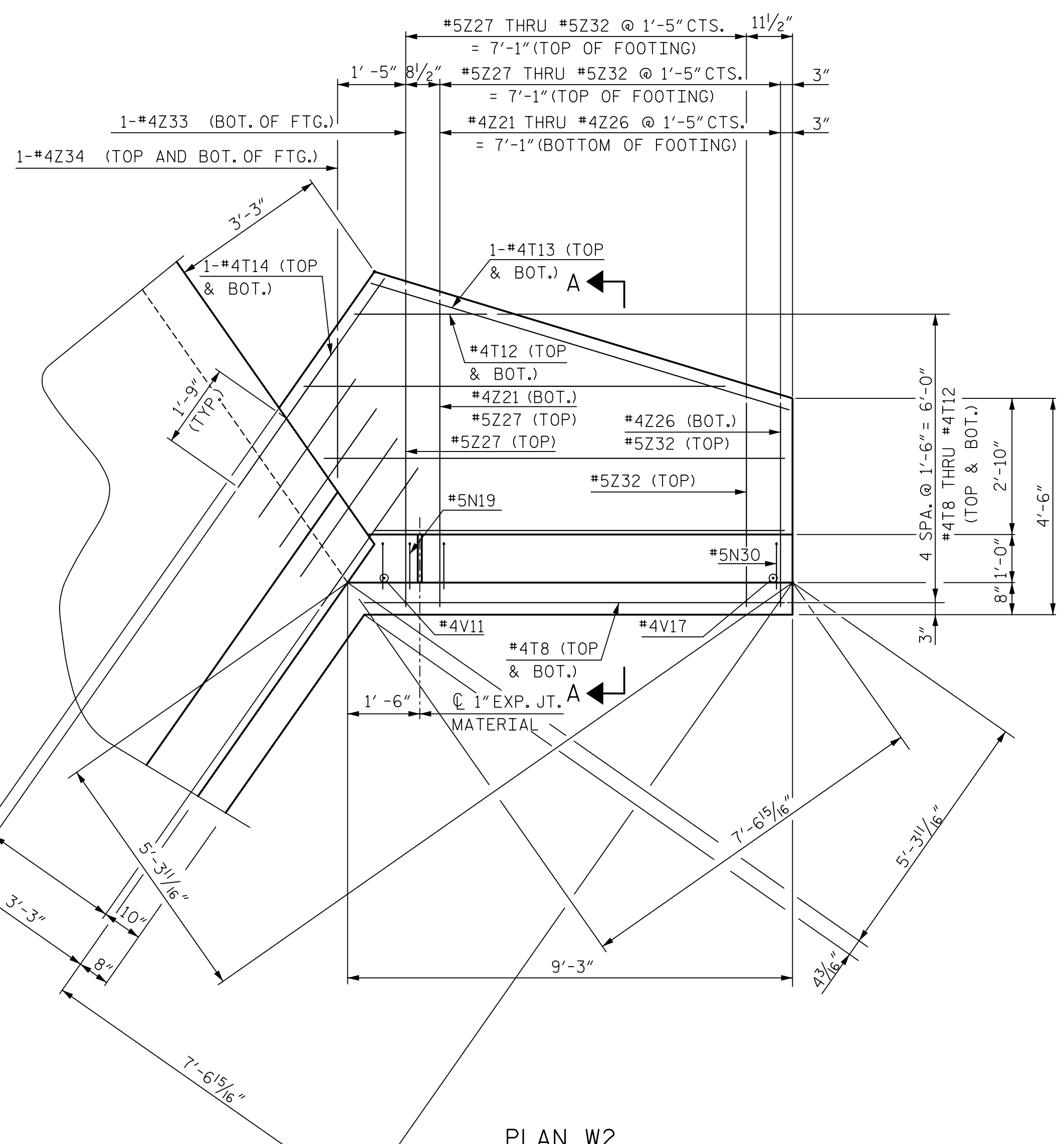


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 REINFORCING SCHEDULE
 DOUBLE 7 FT. x 6 FT.
 CONCRETE BOX CULVERT
 AT POC STA. 55+31.95 -L-

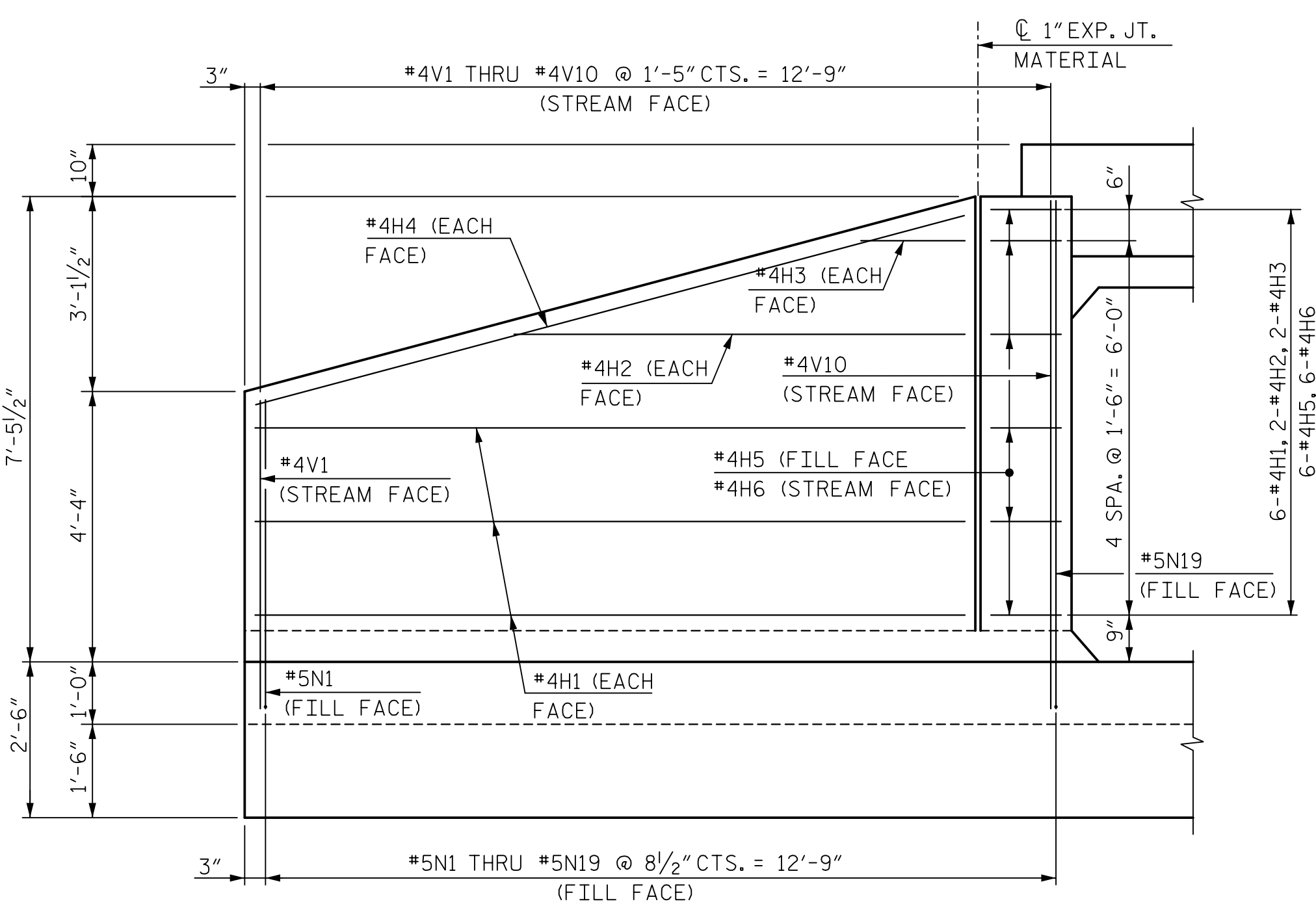
HNTB HNTB NORTH CAROLINA, P.C. License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609		REVISIONS				SHEET NO. C-4
DRAWN BY J. BAYNE	DATE 7/14	NO.	BY:	DATE:	TOTAL SHEETS 6	
CHECKED BY P. BARBER	DATE 8/14	1				
		2				
		3				
		4				



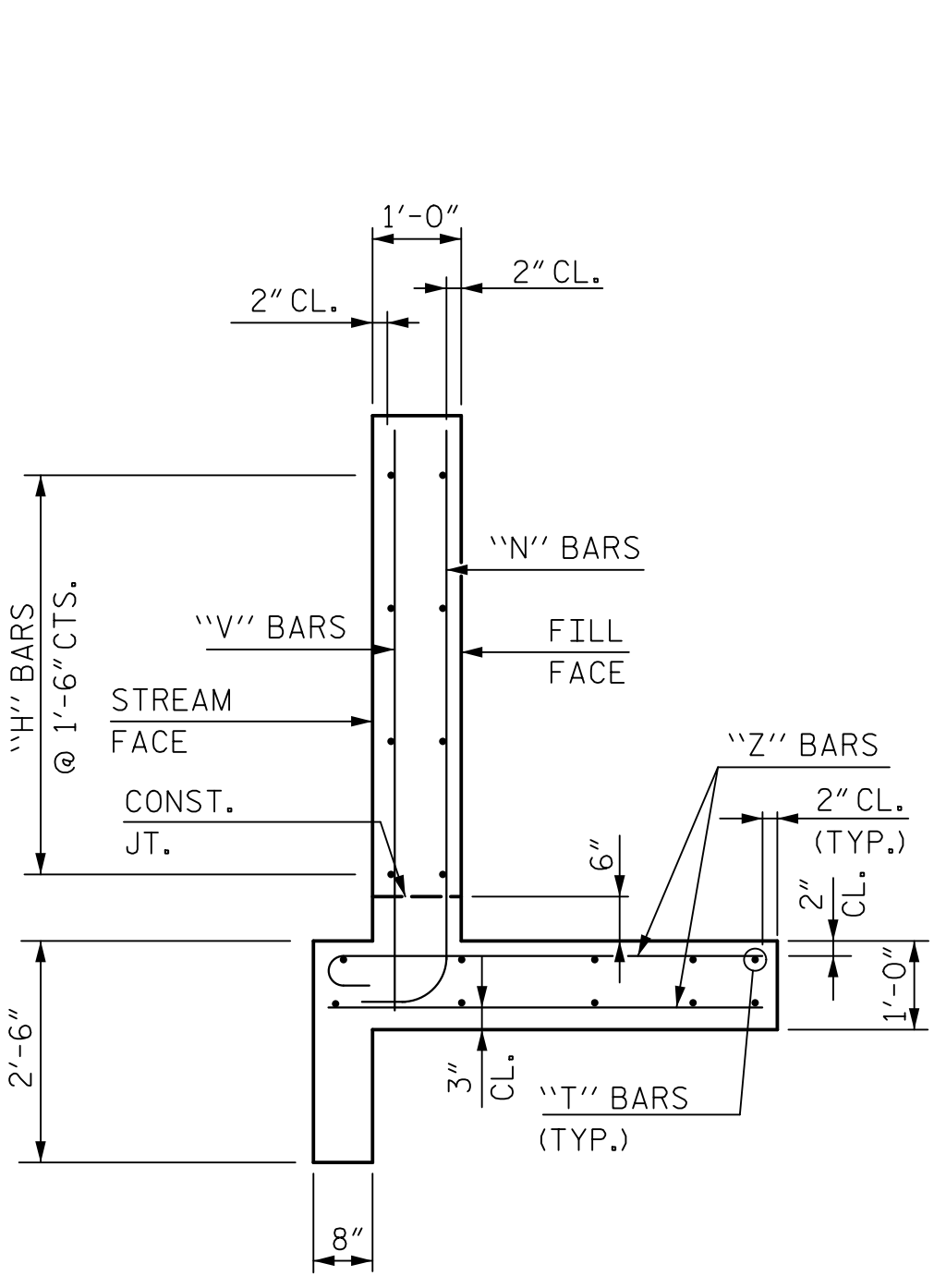
PLAN W1



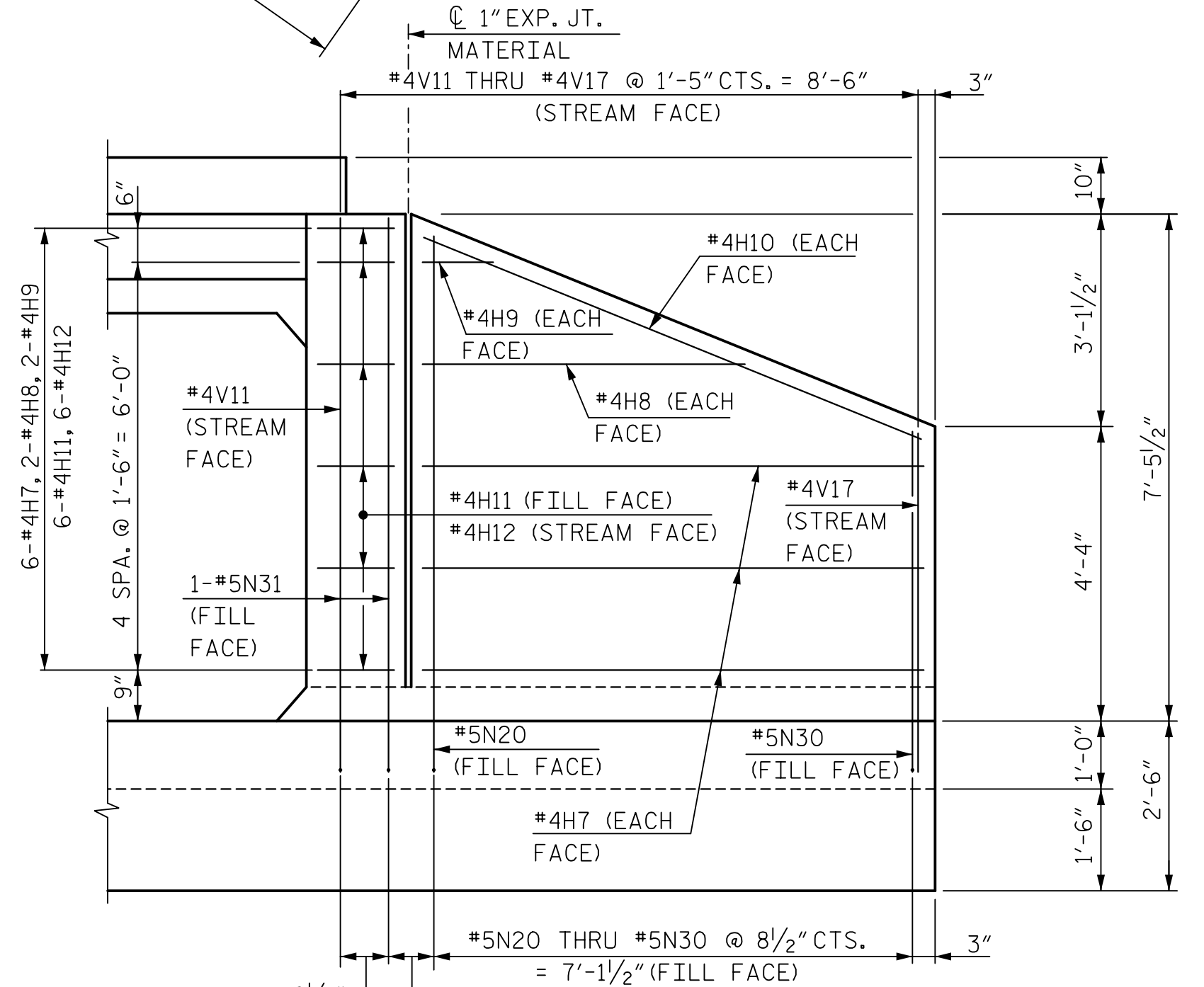
PLAN W2



ELEVATION W1

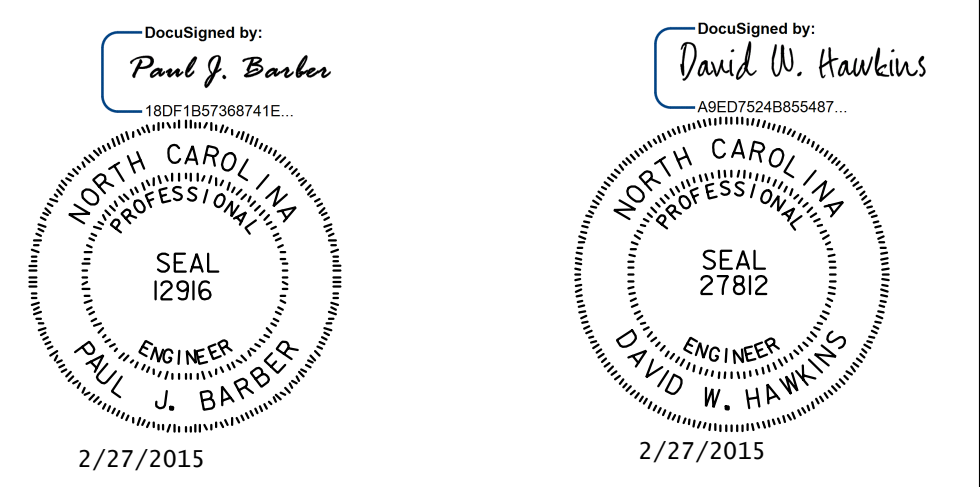


SECTION A-A



ELEVATION W2

NOTE: FOR WEEP HOLES, SEE SHEET 3 OF 6.

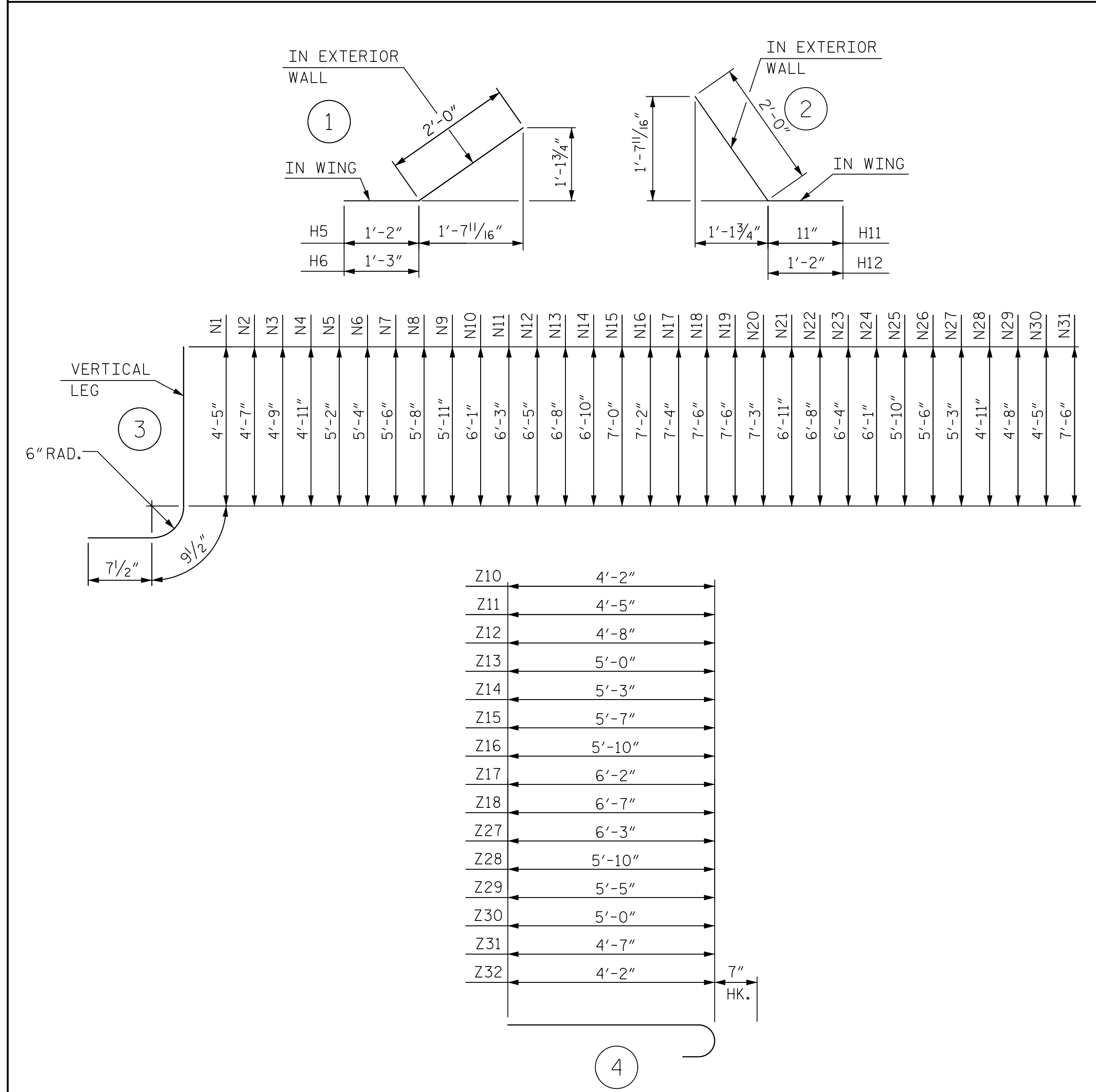


PROJECT NO. P-4900A
ROBESON COUNTY
 STATION: POC 55+31.95 -L-
 MILE POST: 0.86
 SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
WING DETAILS
 DOUBLE 7' X 6'
 CONCRETE BOX CULVERT
 AT POC STA. 55+31.95 -L-

HNTB		HNTB NORTH CAROLINA, P.C. License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609		REVISIONS		SHEET NO.	
DRAWN BY	J. BAYNE	DATE	7/14	NO.	BY:	DATE:	C-5
CHECKED BY	P. BARBER	DATE	9/14	1			
DWG. NO. 5				2			TOTAL SHEETS
				3			6
				4			

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

WING REINFORCING
BILL OF MATERIAL

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT						
H1	12	4	STR.	11'-4"	91	S1	20	6	STR.	3'-6"	105	Z9	4	4	STR.	6'-7"	18			
H2	4	4	STR.	7'-4"	20					Z10	4	5	4	4	STR.	4'-9"	20			
H3	4	4	STR.	1'-8"	4	T1	4	4	STR.	12'-2"	33	Z11	4	5	4	4	STR.	5'-0"	21	
H4	4	4	STR.	11'-9"	31	T2	4	4	STR.	12'-8"	34	Z12	4	5	4	4	STR.	5'-3"	22	
H5	12	4	1	3'-2"	25	T3	4	4	STR.	14'-10"	40	Z13	4	5	4	4	STR.	5'-7"	23	
H6	12	4	1	3'-3"	26	T4	4	4	STR.	13'-2"	35	Z14	4	5	4	4	STR.	5'-10"	24	
H7	12	4	STR.	7'-4"	59	T5	4	4	STR.	3'-7"	10	Z15	4	5	4	4	STR.	6'-2"	26	
H8	4	4	STR.	4'-9"	13	T6	4	4	STR.	12'-6"	33	Z16	4	5	4	4	STR.	6'-5"	27	
H9	4	4	STR.	1'-0"	3	T7	4	4	STR.	4'-9"	13	Z17	4	5	4	4	STR.	6'-9"	28	
H10	4	4	STR.	7'-11"	21	T8	4	4	STR.	8'-4"	22	Z18	4	5	4	4	STR.	7'-2"	30	
H11	12	4	2	2'-11"	23	T9	4	4	STR.	8'-6"	23	Z19	4	4	4	STR.	3'-6"	9		
H12	12	4	2	3'-2"	25	T10	4	4	STR.	9'-6"	25	Z20	4	4	4	STR.	1'-6"	4		
						T11	4	4	STR.	8'-7"	23	Z21	2	4	4	STR.	6'-3"	8		
N1	2	5	3	5'-10"	12	T12	4	4	STR.	2'-6"	7	Z22	2	4	4	STR.	5'-10"	8		
N2	2	5	3	6'-0"	13	T13	4	4	STR.	8'-10"	24	Z23	2	4	4	STR.	5'-5"	7		
N3	2	5	3	6'-2"	13	T14	4	4	STR.	3'-3"	9	Z24	2	4	4	STR.	5'-0"	7		
N4	2	5	3	6'-4"	13						Z25	2	4	4	STR.	4'-7"	6			
N5	2	5	3	6'-7"	14	V1	2	4	STR.	4'-11"	7	Z26	2	4	4	STR.	4'-2"	6		
N6	2	5	3	6'-9"	14	V2	2	4	STR.	5'-3"	7	Z27	4	5	4	4	STR.	6'-10"	29	
N7	2	5	3	6'-11"	14	V3	2	4	STR.	5'-8"	8	Z28	4	5	4	4	STR.	6'-5"	27	
N8	2	5	3	7'-1"	15	V4	2	4	STR.	6'-0"	8	Z29	4	5	4	4	STR.	6'-0"	25	
N9	2	5	3	7'-4"	15	V5	2	4	STR.	6'-5"	9	Z30	4	5	4	4	STR.	5'-7"	23	
N10	2	5	3	7'-6"	16	V6	2	4	STR.	6'-9"	9	Z31	4	5	4	4	STR.	5'-2"	22	
N11	2	5	3	7'-8"	16	V7	2	4	STR.	7'-2"	10	Z32	4	5	4	4	STR.	4'-9"	20	
N12	2	5	3	7'-10"	16	V8	2	4	STR.	7'-6"	10	Z33	2	4	4	STR.	6'-6"	9		
N13	2	5	3	8'-1"	17	V9	2	4	STR.	7'-10"	10	Z34	4	4	4	STR.	2'-8"	7		
N14	2	5	3	8'-3"	17	V10	2	4	STR.	8'-0"	11									
N15	2	5	3	8'-5"	18	V11	2	4	STR.	8'-0"	11									
N16	2	5	3	8'-7"	18	V12	2	4	STR.	7'-9"	10									
N17	2	5	3	8'-9"	18	V13	2	4	STR.	7'-2"	10									
N18	2	5	3	8'-11"	19	V14	2	4	STR.	6'-7"	9									
N19	2	5	3	8'-11"	19	V15	2	4	STR.	6'-0"	8									
N20	2	5	3	8'-8"	18	V16	2	4	STR.	5'-5"	7									
N21	2	5	3	8'-4"	17	V17	2	4	STR.	4'-11"	7									
N22	2	5	3	8'-1"	17															
N23	2	5	3	7'-9"	16	Z1	2	4	STR.	4'-2"	6									
N24	2	5	3	7'-6"	16	Z2	2	4	STR.	4'-5"	6									
N25	2	5	3	7'-3"	15	Z3	2	4	STR.	4'-8"	6									
N26	2	5	3	6'-11"	14	Z4	2	4	STR.	5'-0"	7									
N27	2	5	3	6'-8"	14	Z5	2	4	STR.	5'-3"	7									
N28	2	5	3	6'-4"	13	Z6	2	4	STR.	5'-7"	7									
N29	2	5	3	6'-1"	13	Z7	2	4	STR.	5'-10"	8									
N30	2	5	3	5'-10"	12	Z8	2	4	STR.	6'-2"	8									
N31	4	5	3	8'-11"	37															

REINFORCING STEEL FOR
4 WINGS LBS. 1,938

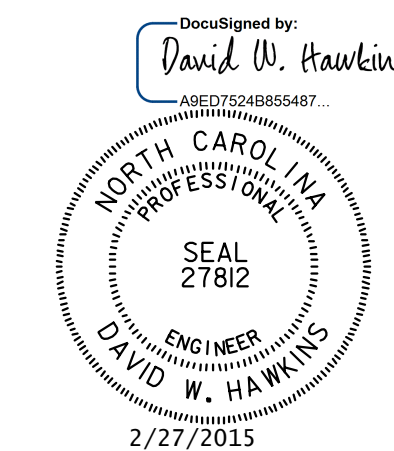
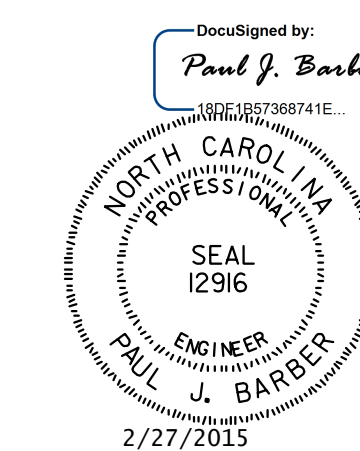
PROJECT NO. P-4900A

ROBESON COUNTY

STATION: POC 55+31.95 -L-

MILE POST: 0.86

SHEET 6 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

WING REINFORCING SCHEDULE
DOUBLE 7' X 6'
CONCRETE BOX CUVERT
AT POC STA. 55+31.95 -L-

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

HNTB HNTB NORTH CAROLINA, P.C.
License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY: J. BAYNE DATE: 7/14
CHECKED BY: P. BARBER DATE: 9/14 DWG. NO. 6

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	- - - - -	AREMA (CURRENT)
LIVE LOAD	- - - - -	SEE PLANS
IMPACT ALLOWANCE	- - - - -	SEE AREMA
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	- - - - -	SEE AREMA
- AASHTO M270 GRADE 50W	- - - - -	SEE AREMA
- AASHTO M270 GRADE 50	- - - - -	SEE AREMA
REINFORCING STEEL IN TENSION		
GRADE 60	- - - - -	SEE AREMA
CONCRETE IN COMPRESSION	- - - - -	SEE AREMA
CONCRETE IN SHEAR	- - - - -	SEE AREMA
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	- - - - -	SEE AREMA
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	- - - - -	SEE AREMA
EQUIVALENT FLUID PRESSURE OF EARTH	- - - - -	SEE AREMA

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 2012 "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; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

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. 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.
 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. FINS 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