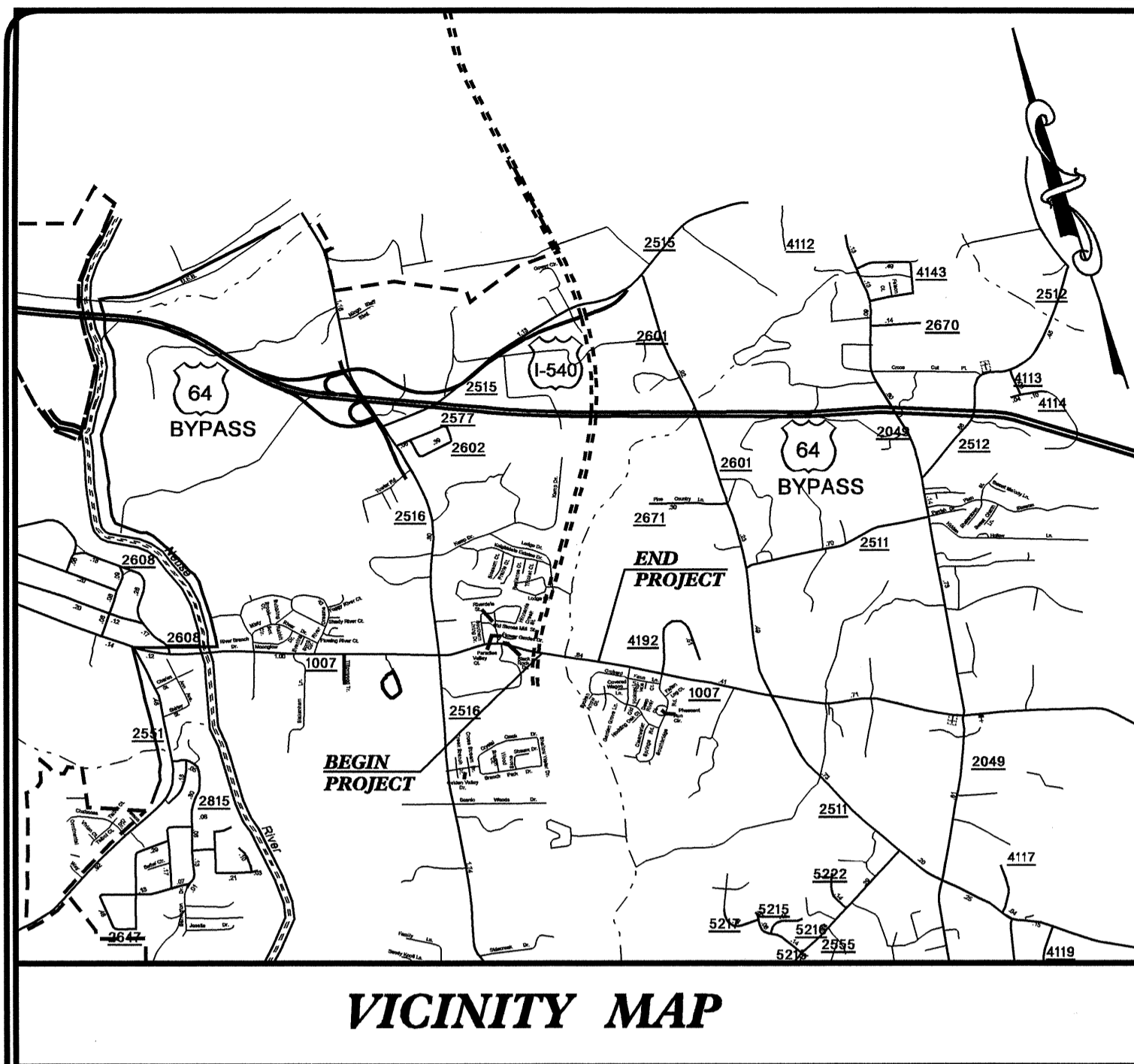


TIP NO: B-4300

CONTRACT: C201897

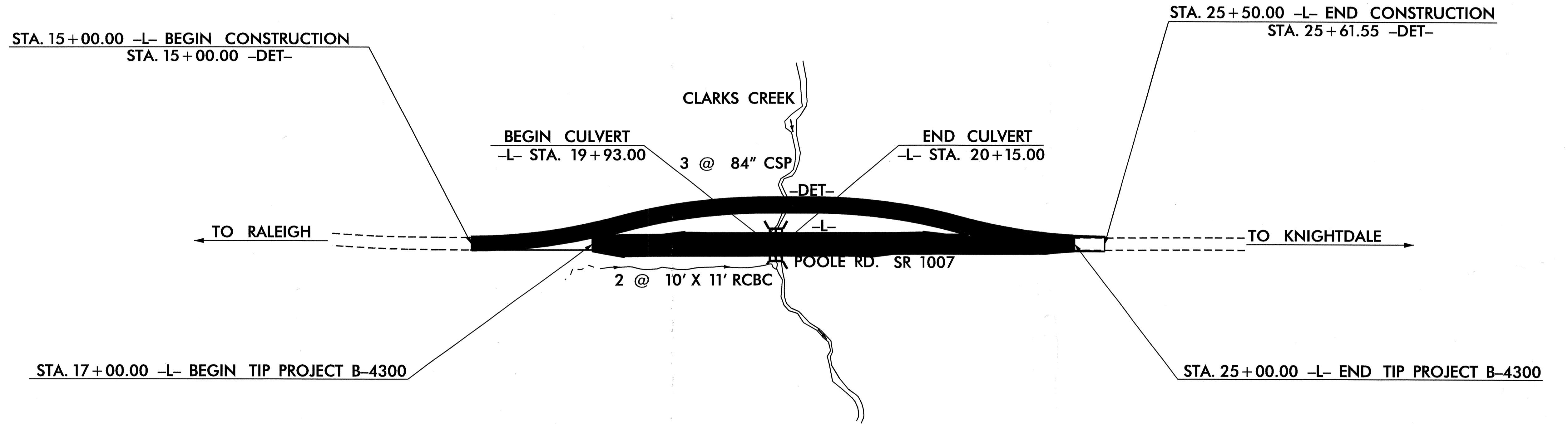


VICINITY MAP

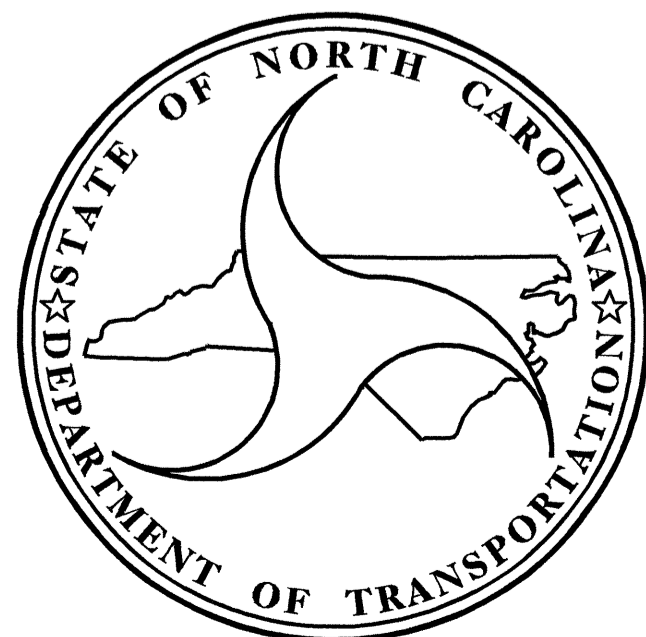
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
WAKE COUNTY

LOCATION: BRIDGE NO. 29 OVER CLARKS CREEK ON SR 1007
TYPE OF WORK: PAVING, GRADING, DRAINAGE AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4300		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33637.1.1	BRSTP-1007(8)	P.E.	
33637.2.1	BRSTP-1007(8)	RW, UTL.	
33637.3.1	BRSTP-1007(8)	CONST.	



CULVERT



DESIGN DATA

ADT 2008 = 8,900
ADT 2030 = 19,500
DHV = 10 %
D = 75 %
T = 6 %*
V = 60 MPH
* TTST 1% DUAL 5%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4300 = 0.148 Mi.
LENGTH STRUCTURE TIP PROJECT B-4300 = 0.004 Mi.
TOTAL LENGTH OF TIP PROJECT B-4300 = 0.152 Mi.

Prepared In the Office of:

DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

LETTING DATE :
AUGUST 19, 2008

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

V. A. PATEL, P. E.
PROJECT DESIGN ENGINEER

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

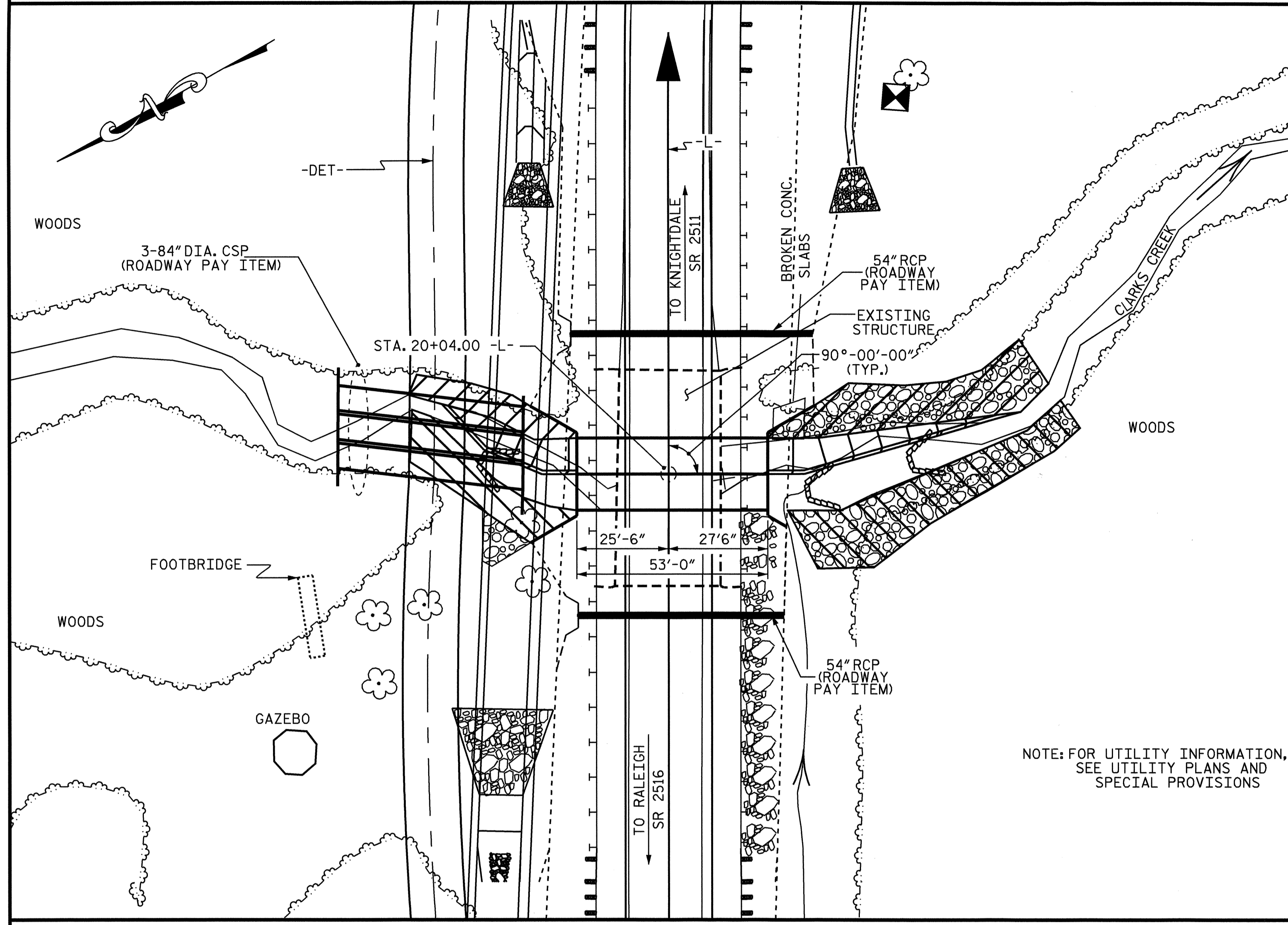
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR
DATE

BM #51 R. R. SPIKE SET IN 16" DIAMETER PIN OAK TREE 40' RT. AT STA. 14+40.00 -BL-, EL. 195.140

F. A. PROJECT NO. BRSTP-1007(8)



LOCATION SKETCH

ROADWAY DATA

GRADE PT. EL. @ STA. 20+04.00 -L- = 199.100
 BED EL. @ STA. 20+04.00 -L- = 184.500
 ROADWAY SLOPES @ STA. 20+04.00 -L- = 2:1

HYDRAULIC DATA

DESIGN DISCHARGE = 1600 C. F. S.
 FREQUENCY OF DESIGN FLOOD = 50 YR.
 DESIGN HIGH WATER ELEVATION = 196.200
 DRAINAGE AREA = 2.2 SQ. MI.
 BASIC DISCHARGE (Q100) = 1700 C. F. S.
 BASIC HIGH WATER ELEVATION = 196.400 FT.

OVERTOPPING FLOOD DATA

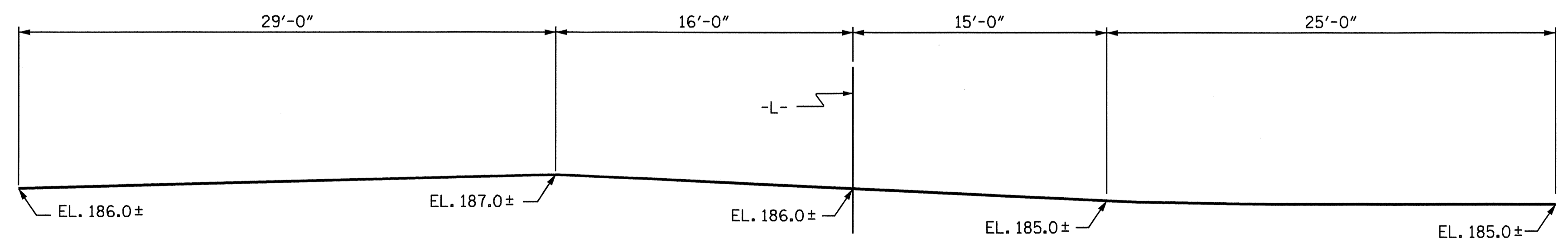
OVERTOPPING DISCHARGE = 2400 C. F. S.
 FREQUENCY OF OVERTOPPING FLOOD = 100+ YR.
 OVERTOPPING FLOOD ELEVATION = 198.300 FT.

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
BARREL @ 2.351 CY/FT	124.6 C.Y.
WING ETC.	51.0 C.Y.
TOTAL	175.6 C.Y.
REINFORCING STEEL	
BARREL	24,709 LBS.
WINGS ETC.	2,853 LBS.
TOTAL	27,562 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MAT'L.	82 TONS.
REMOVAL OF EXISTING STRUCTURE	LUMP SUM

NOTES

ASSUMED LIVE LOAD -----HS20-44 OR ALTERNATE LOADING.
 DESIGN FILL-----2.83 FT.
 FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.
 3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.
 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.
 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.
 AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, 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.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 THE EXISTING STRUCTURE CONSISTING OF 2 SPANS AT 29'-6" AND HAVING 12 PRESTRESSED CONCRETE CHANNELS WITH A CLEAR ROADWAY WIDTH OF 29'-3" WITH ASPHALT WEARING SURFACE ON PRESTRESSED CONCRETE CAPS AND TIMBER PILES AND LOCATED AT THE PROPOSED SITE 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.
 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.
 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.



PROFILE ALONG CULVERT

PROJECT NO. B-4300
WAKE COUNTY
 STATION: 20+04.00 -L-
 SHEET 1 OF 5 REPLACES BRIDGE #29

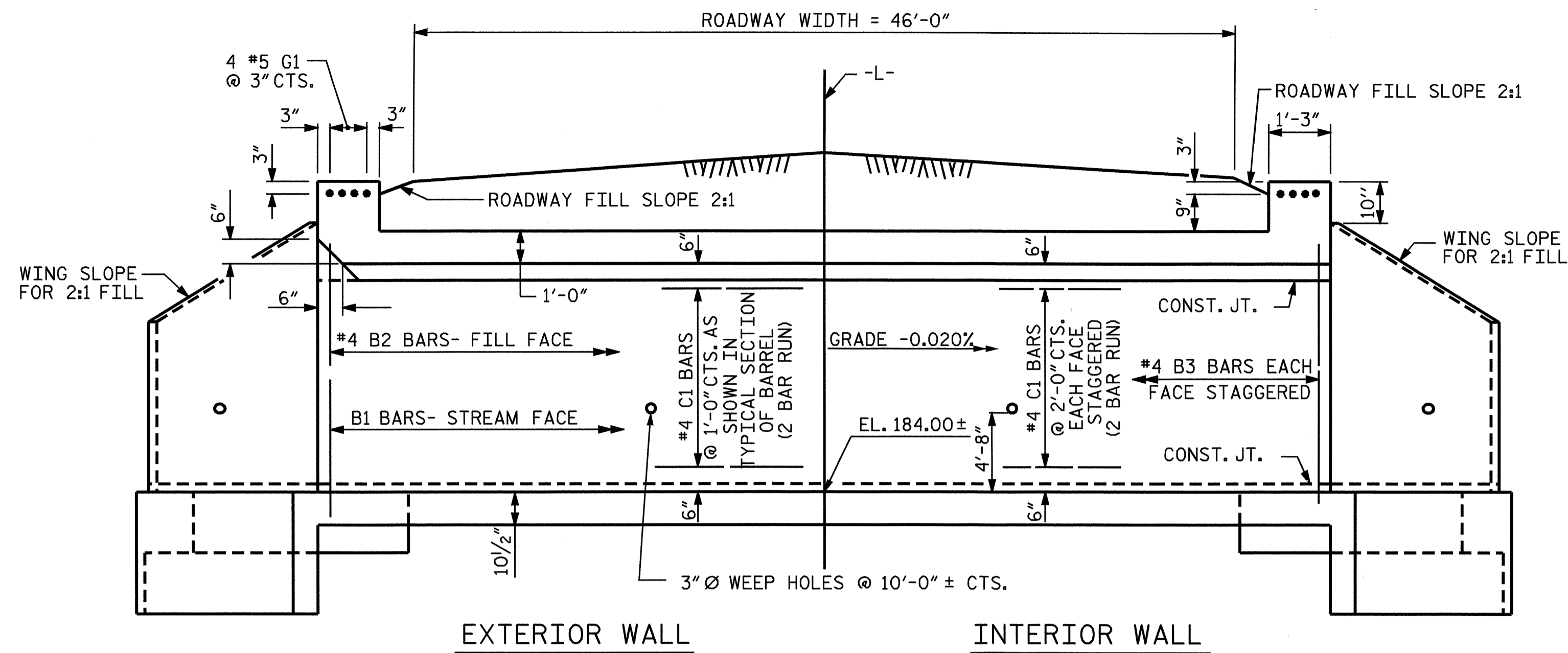
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DOUBLE 10 FT. X 11 FT.
 CONCRETE BOX CULVERT
 90° SKEW

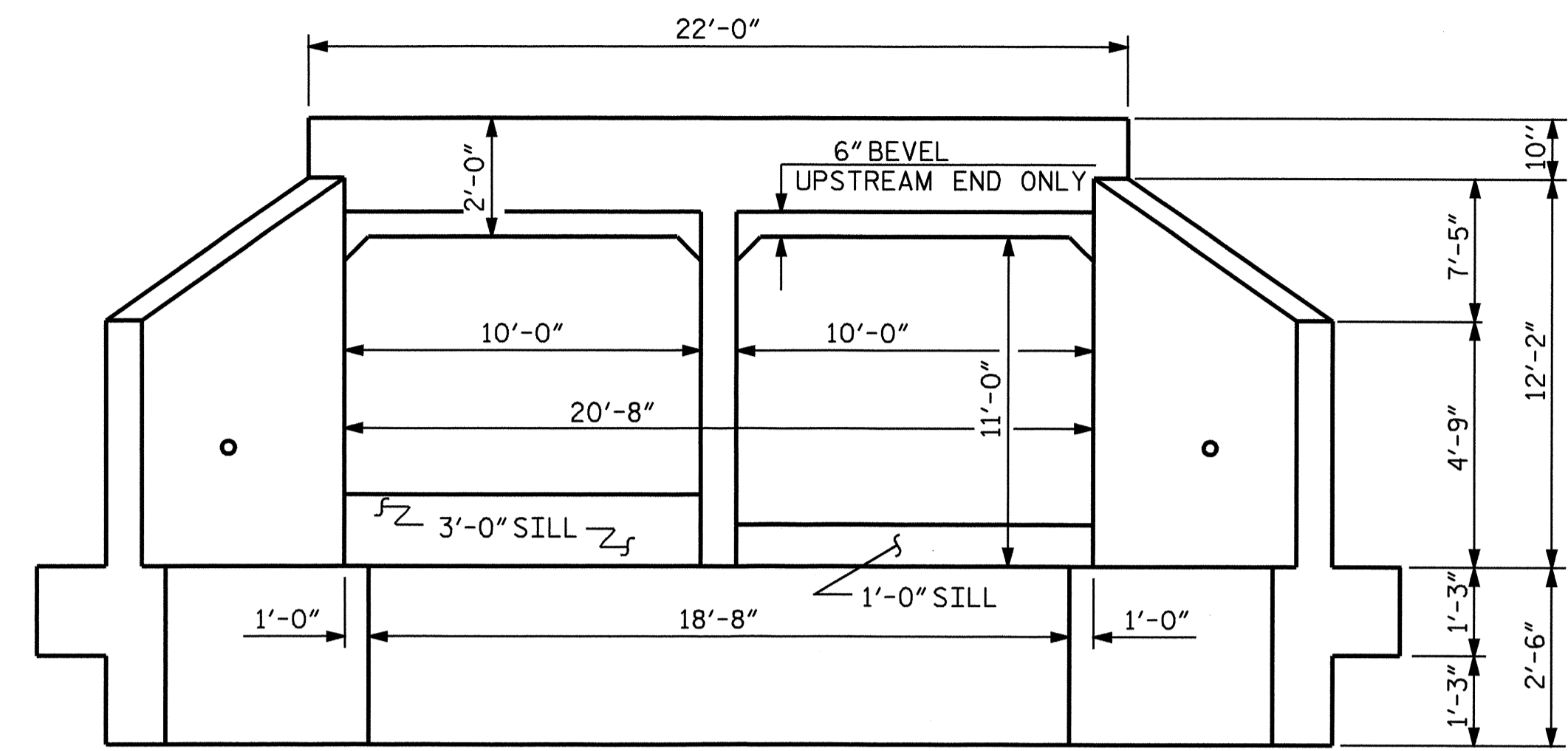


DRAWN BY : R. G. EMERSON DATE : 10/07
 CHECKED BY : S. DOMBROWSKI DATE : 10/07

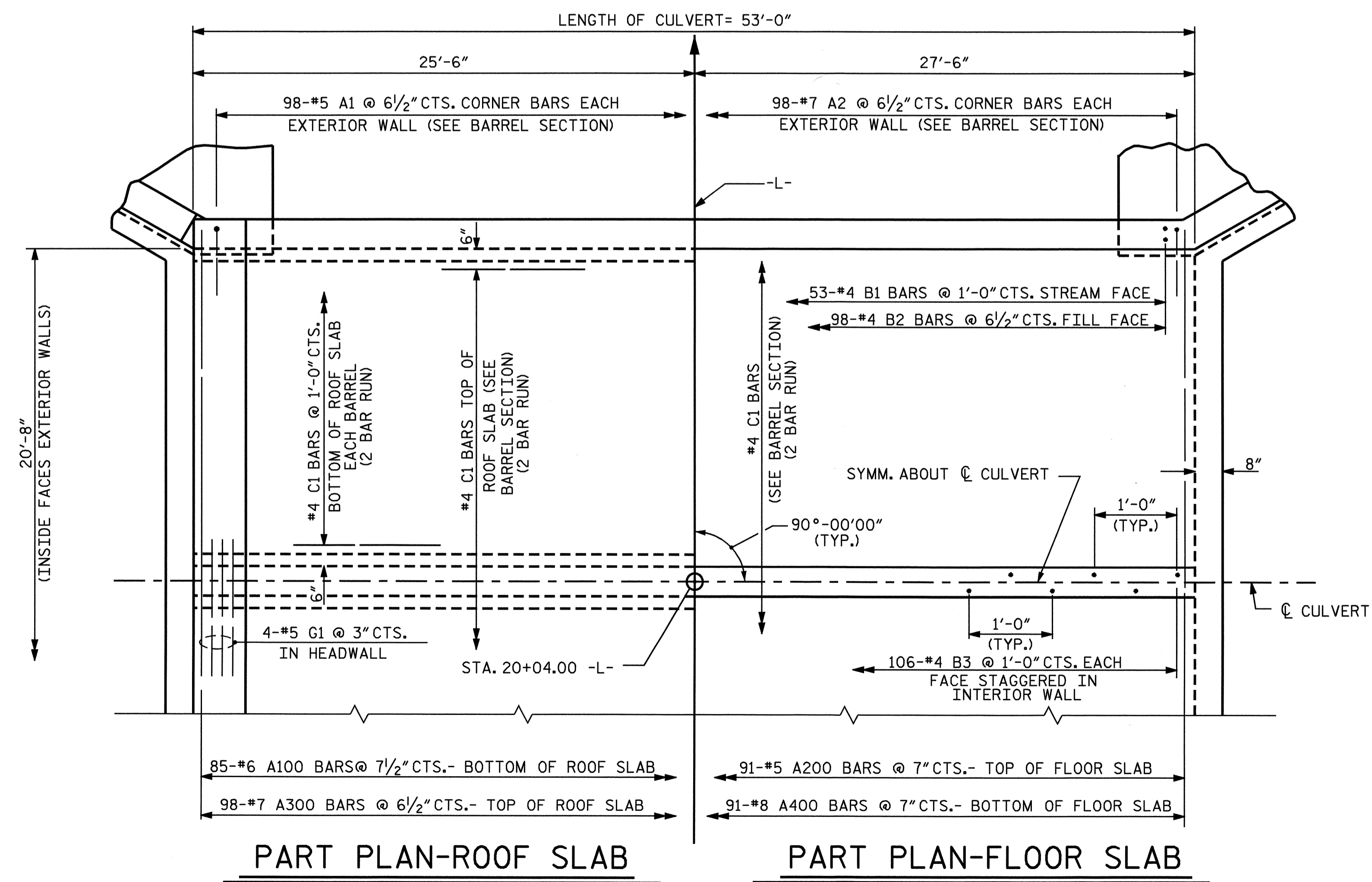
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			5



CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION

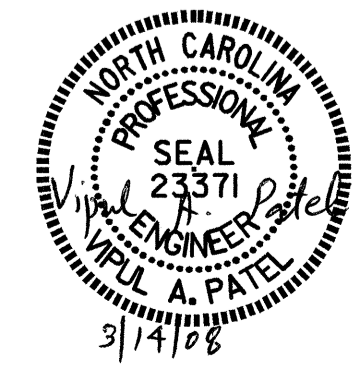


PART PLAN-ROOF SLAB

PART PLAN-FLOOR SLAB

PROJECT NO. B-4300
WAKE COUNTY
 STATION: 20+04.00 -L-
 SHEET 2 OF 5

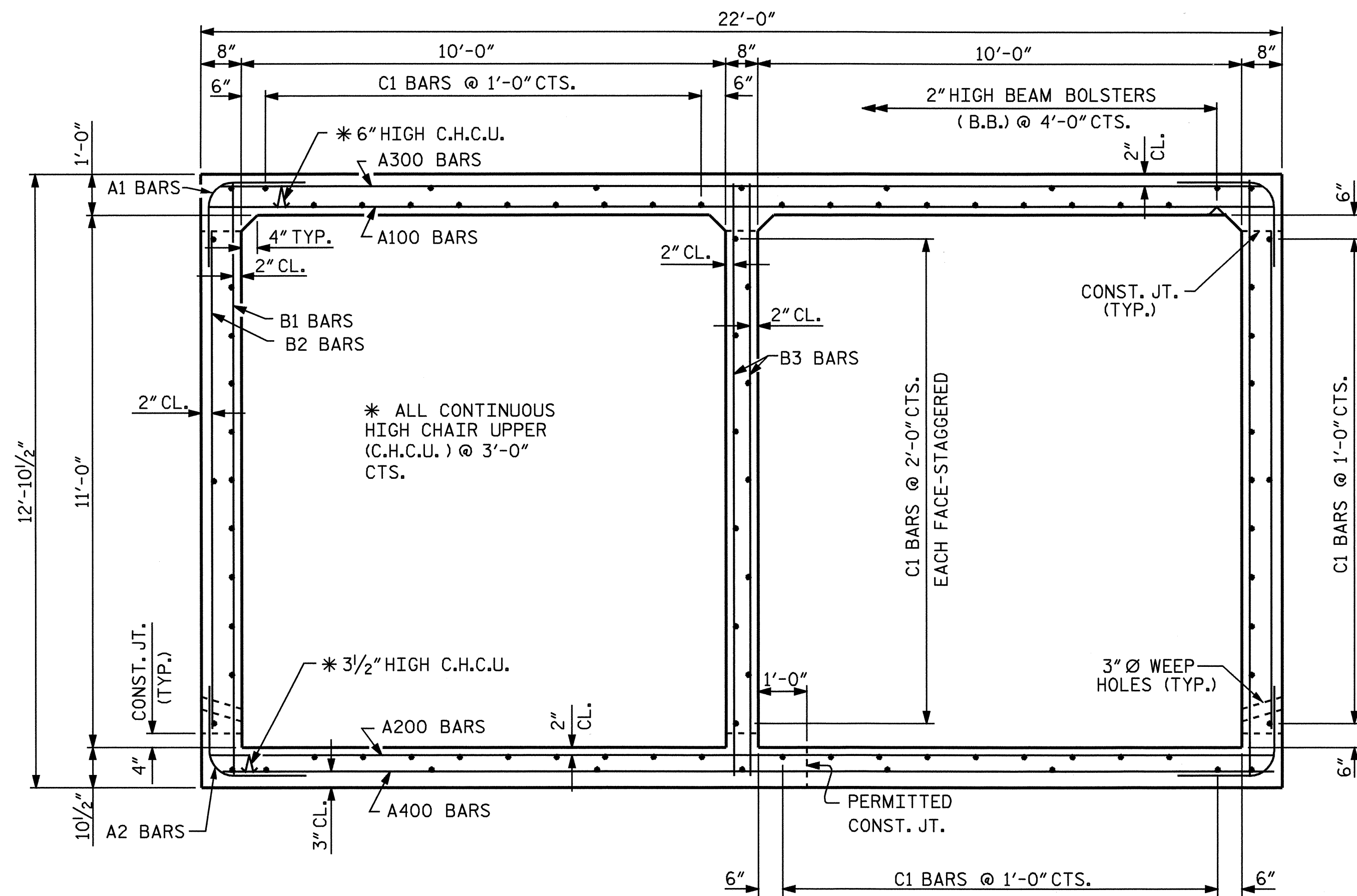
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**DOUBLE 10 FT. X 11 FT.
 CONCRETE BOX CULVERT
 90° SKEW**



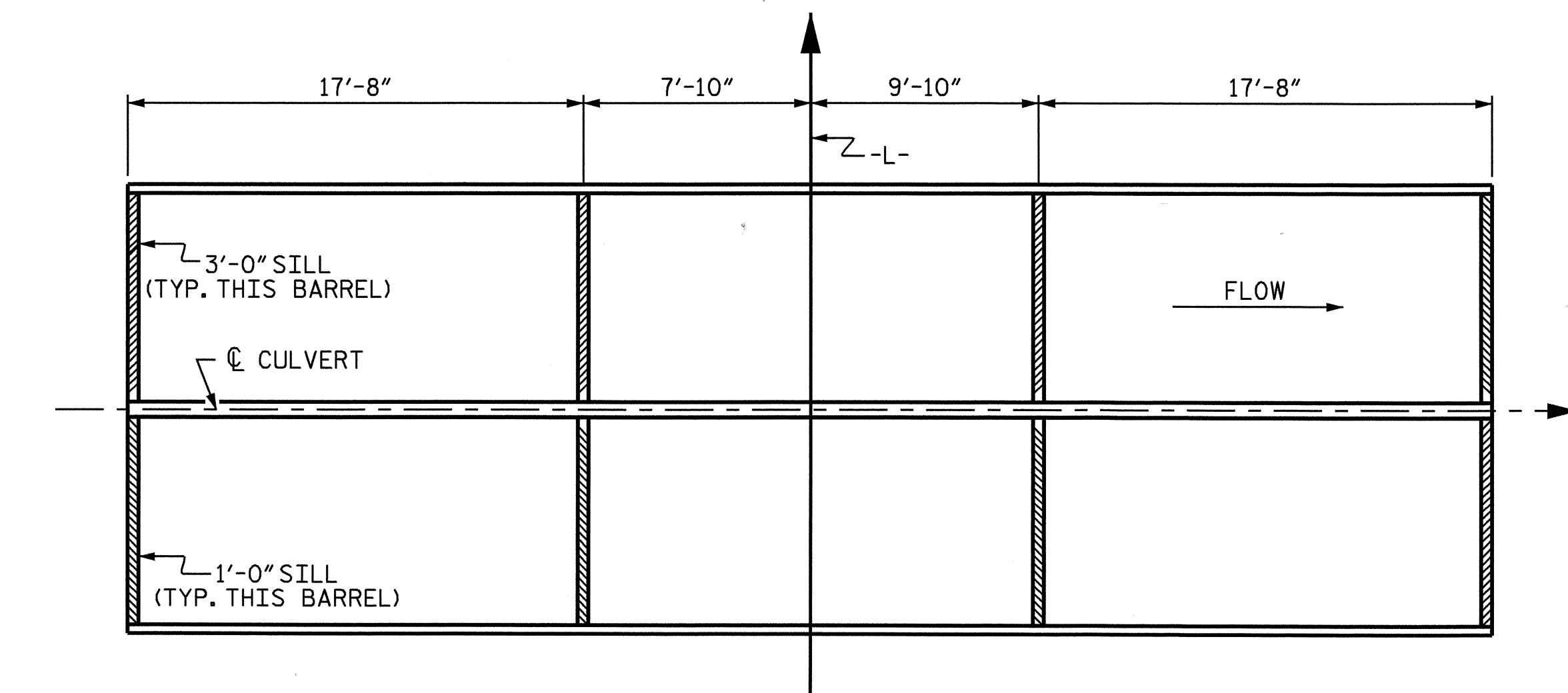
REVISED 11-19-99 BY M.M. CHECKED BY R.W.W.
 REDRAWN NOV. 1990 BY TSS CHECKED BY ARB

ASSEMBLED BY : R. G. EMERSON	DATE : 10/07	SPECIAL
CHECKED BY : S. DOMBROWSKI	DATE : 10/07	
DRAWN BY : RALPH D. UNDERWOOD	DATE : MAY 1971	STANDARD
CHECKED BY : JOEL A. JOHNSON	DATE : JULY 1971	

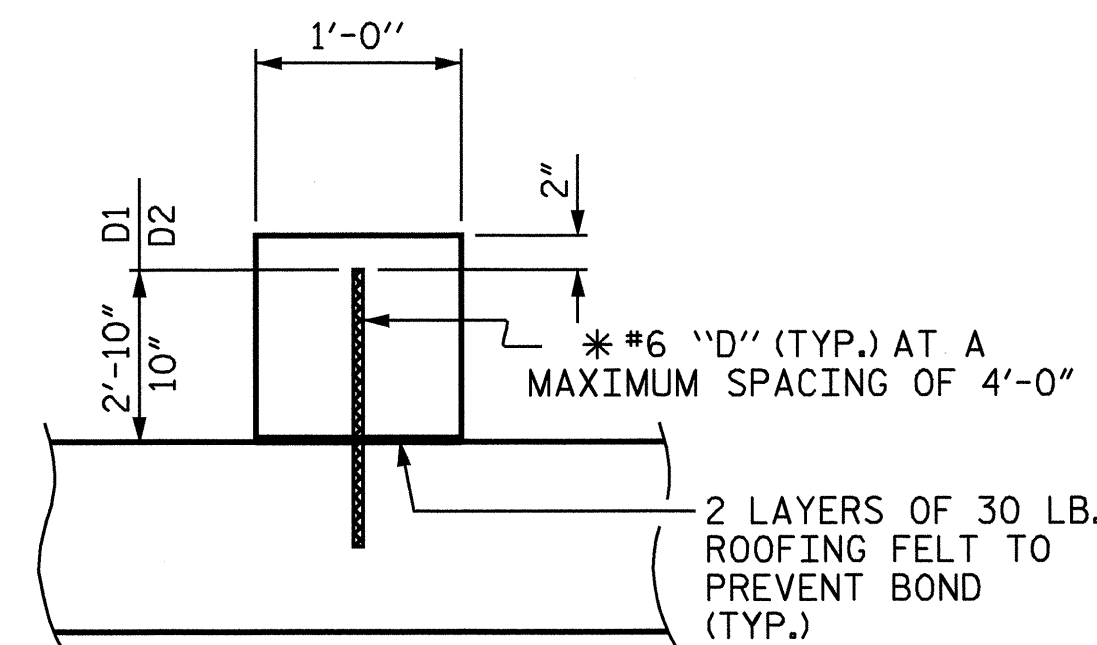
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			5



RIGHT ANGLE SECTION OF BARREL
THERE ARE 89 C1 BARS IN SECTION OF BARREL.

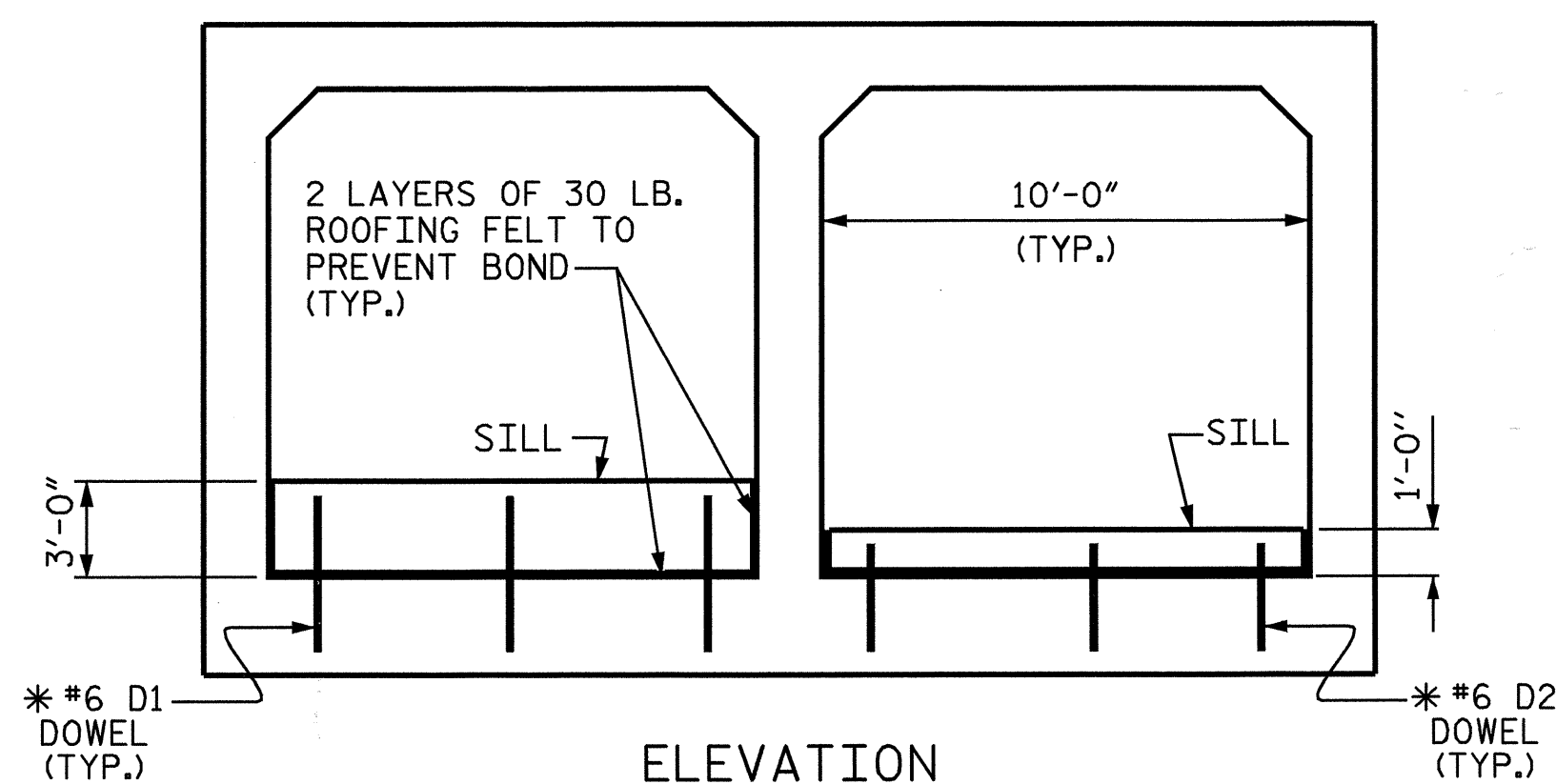


PLAN OF CULVERT SHOWING LOCATION OF SILLS



SECTION THROUGH SILL

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



ELEVATION

CULVERT SILL DETAILS

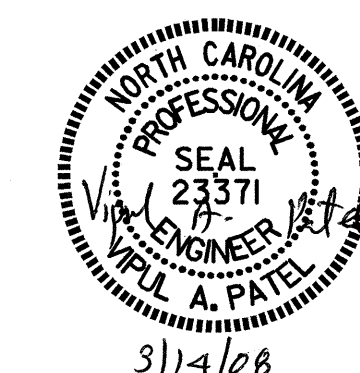
BAR TYPE		BILL OF MATERIAL					
	VERTICAL LEG	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
	⑥	A100	85	#6	STR	21'-7"	2756
		A200	91	#5	STR	21'-7"	2049
		A300	98	#7	STR	21'-7"	4323
		A400	91	#8	STR	21'-7"	5244
		A1	196	#5	6	4'-9"	971
		A2	196	#7	6	6'-10"	2738
		B1	106	#4	STR	12'-4"	873
		B2	196	#4	STR	10'-4"	1353
		B3	106	#4	STR	12'-4"	873
	C1	178	#4	STR	27'-5"	3260	
	D1	12	#6	STR	3'-5"	62	
	D2	12	#6	STR	1'-5"	26	
	G1	8	#5	STR	21'-8"	181	
TOTAL REINFORCING STEEL						24,709	

BAR DIMENSIONS ARE OUT TO OUT

SPLICE LENGTH CHART		
BAR	SIZE	SPLICE LENGTH
A200	#5	1'-9"
A400	#8	4'-0"
B1	#4	1'-9"
B3	#4	1'-9"
C1	#4	1'-11"

PROJECT NO. B-4300
WAKE COUNTY
 STATION: 20+04.00 -L-

SHEET 3 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**DOUBLE 10 FT. X 11 FT.
 CONCRETE BOX CULVERT
 90° SKEW**

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

DRAWN BY: R. G. EMERSON DATE: 10/07
 CHECKED BY: S. DOMBROWSKI DATE: 10/07

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS SHALL CONSIST OF THE FOLLOWING COMPONENTS :

- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2 1/2".
- B. 4 - 1" Ø X 2 1/4" BOLTS WITH WASHERS, BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1" Ø X 2 1/4" GALVANIZED BOLTS 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.)
- C. WIRE STRUTS SHOWN IN THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS DETAIL ARE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 P.S.I. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

GUARDRAIL ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO INSURE FIT.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CLASS "A" CONCRETE.

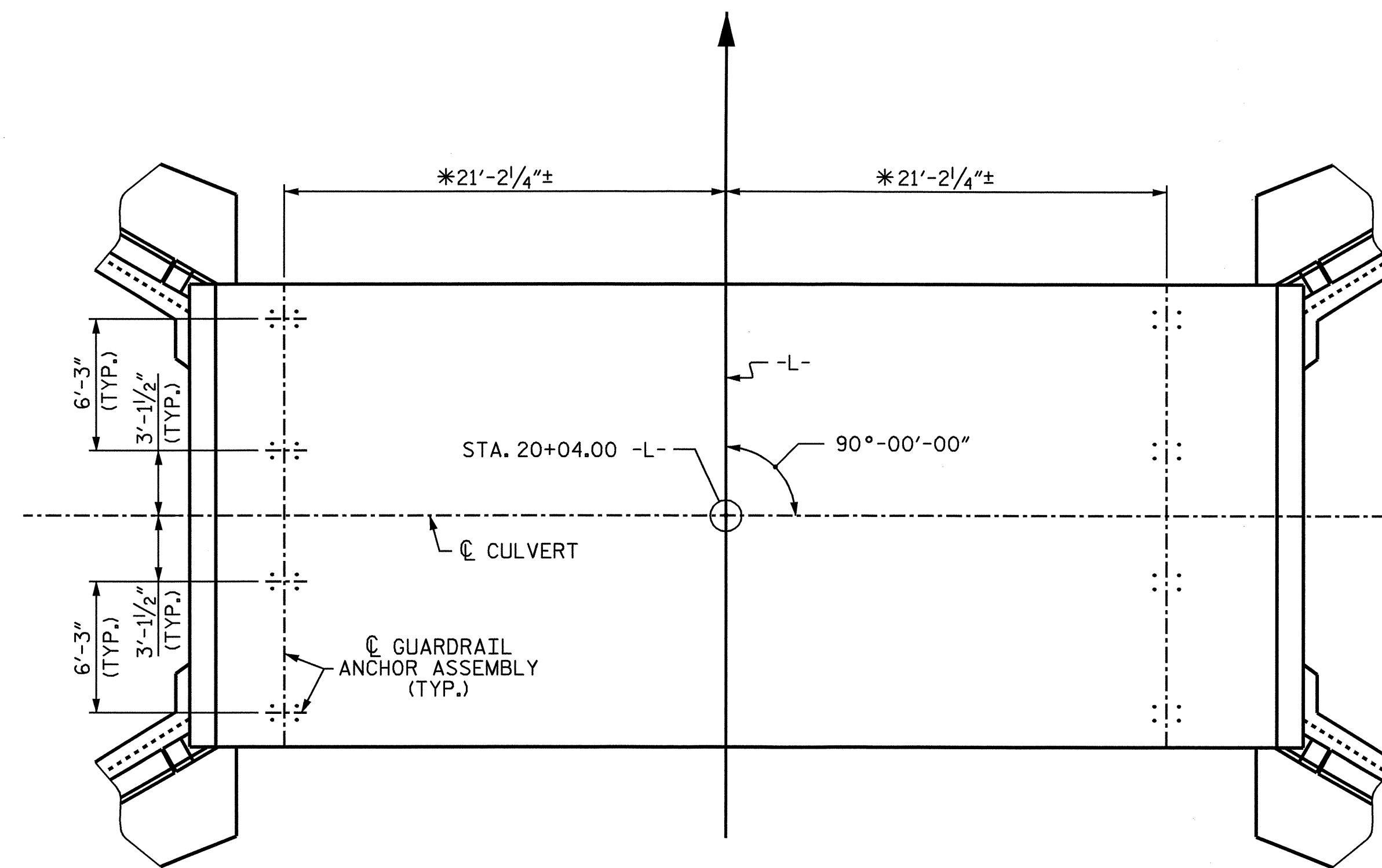
FERRULES TO BE PLUGGED DURING POURING OF SLAB AS RECOMMENDED BY THE MANUFACTURER.

AT THE CONTRACTOR'S OPTION, FERRULES WITH OPEN OR CLOSED ENDS MAY BE USED.

PAYMENT FOR GUARDRAIL, POSTS, AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.

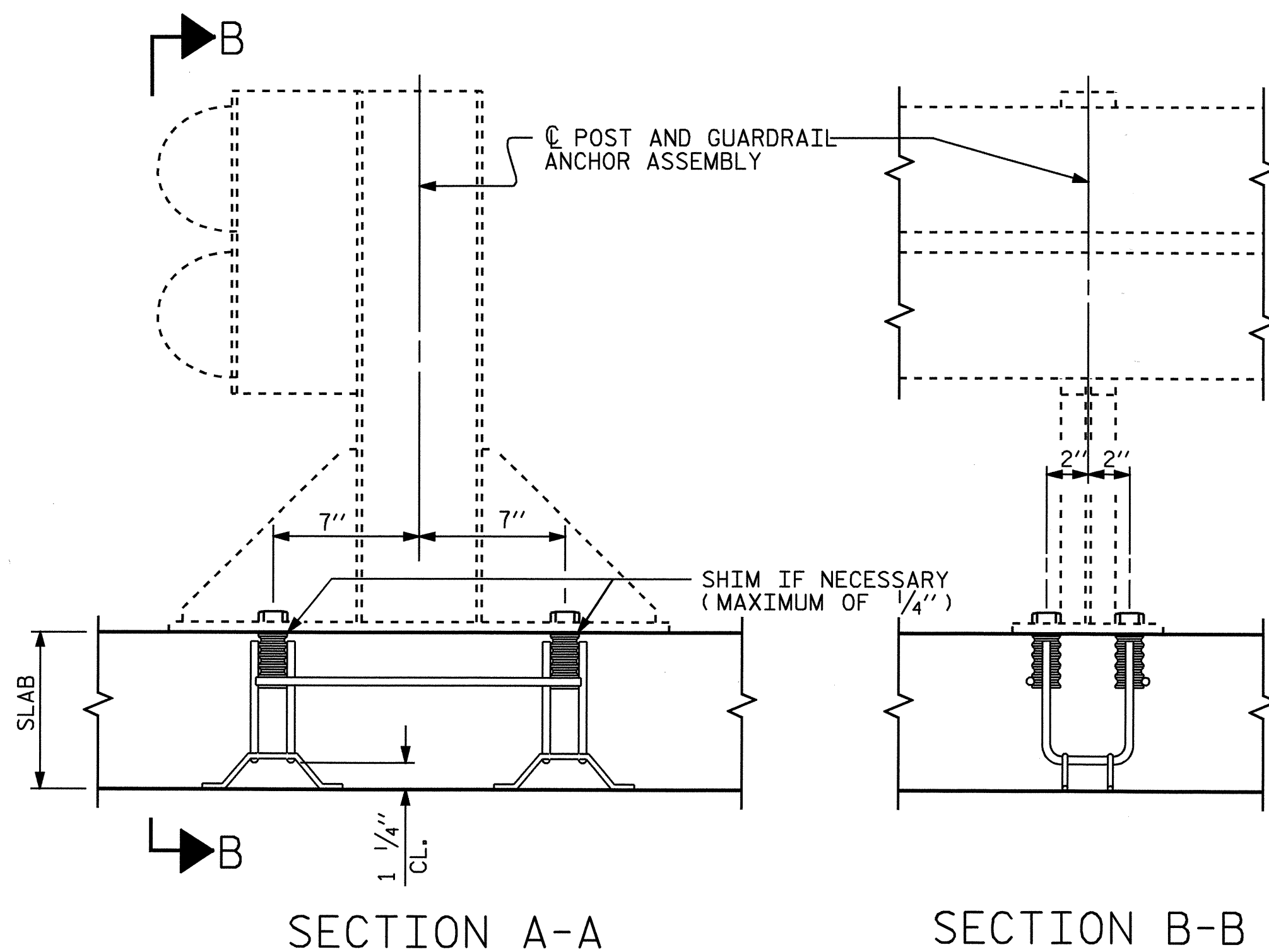
SLAB REINFORCING STEEL MAY BE SHIFTED AS NECESSARY TO CLEAR GUARDRAIL ANCHOR ASSEMBLY. CARE SHOULD BE TAKEN TO KEEP THE SHIFTING OF REINFORCING STEEL TO A MINIMUM.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF GUARDRAIL ANCHOR ASSEMBLY. LEVEL TWO FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 1" Ø BOLT IS 21.8 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.



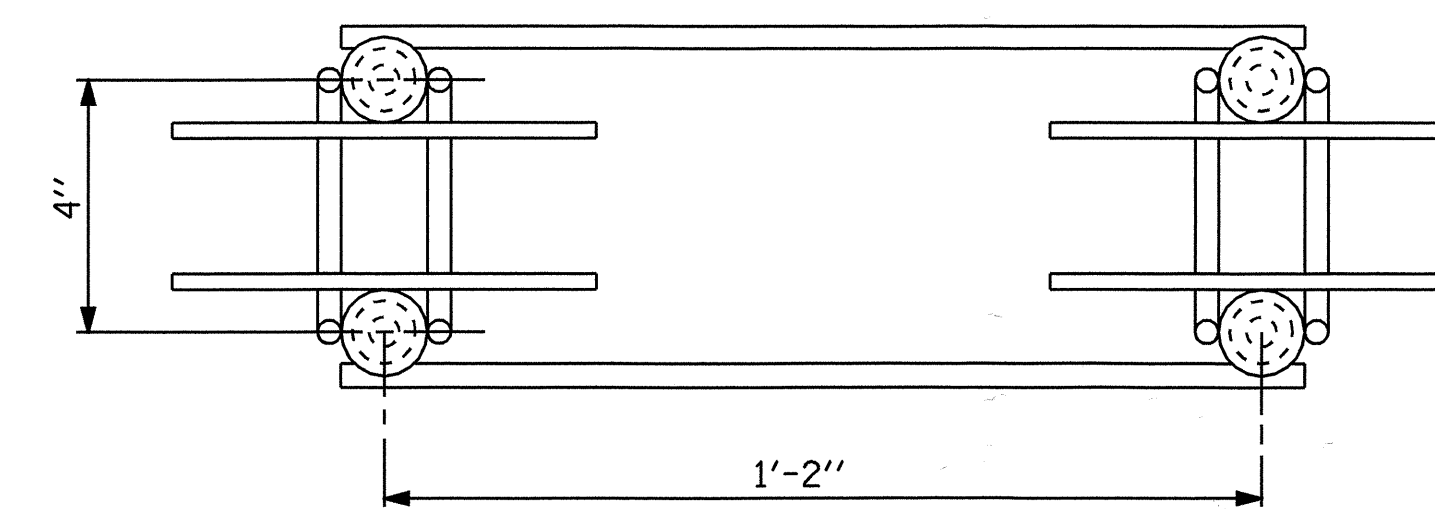
PLAN

SHOWING : GUARDRAIL ANCHOR ASSEMBLY SPACING.
* DIMENSION SHOULD BE VERIFIED IN THE FIELD.

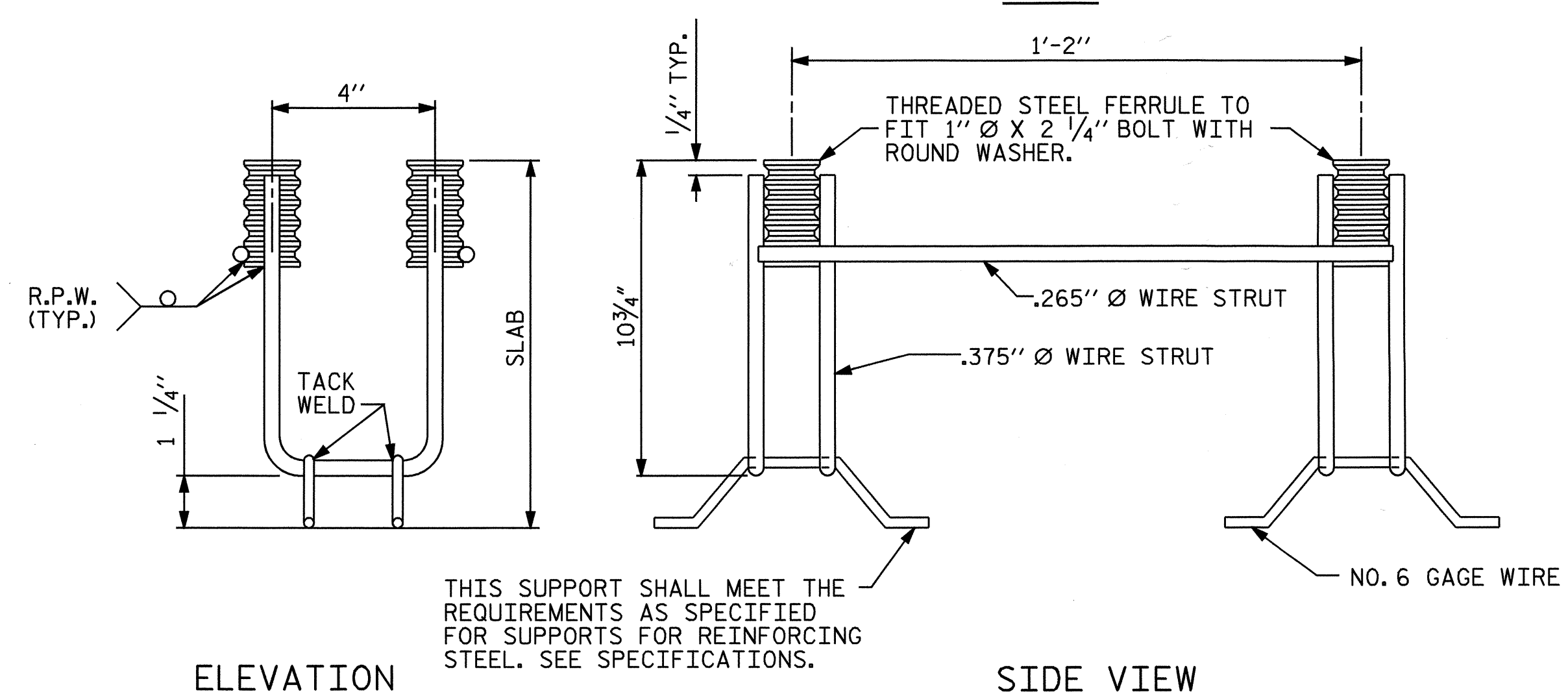


SECTION A-A

SECTION B-B



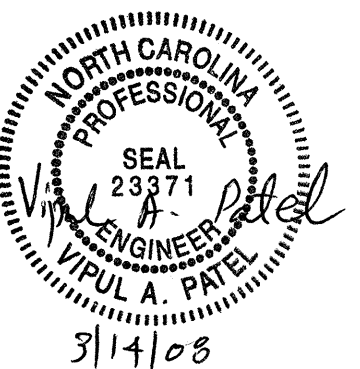
PLAN



ELEVATION

SIDE VIEW

GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS



PROJECT NO. B-4300
WAKE COUNTY
STATION: 20+04.00 -L-

SHEET 4 OF 5

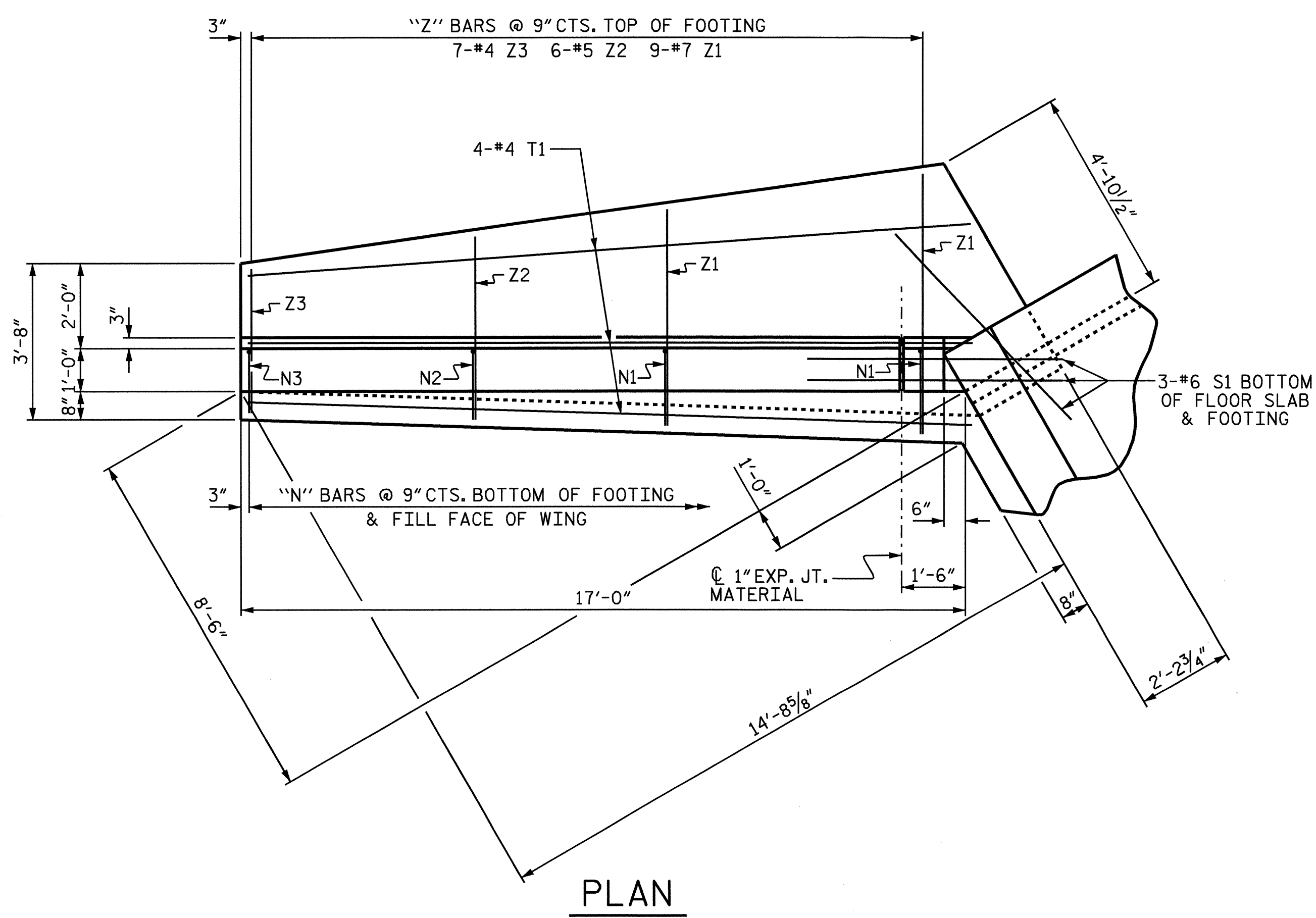
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
ANCHORAGE DETAILS FOR
GUARDRAIL ANCHOR ASSEMBLY
FOR CULVERTS

ASSEMBLED BY :	R. G. EMERSON	DATE :	10/07
CHECKED BY :	S. DOMBROWSKI	DATE :	10/07
DRAWN BY :	FCJ	6/88	REV. 7/10/01
CHECKED BY :	ARB	6/88	REV. 5/7/03
			REV. 5/1/06R

LES/RDR	
RWW/JTE	
KMM/GM	

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

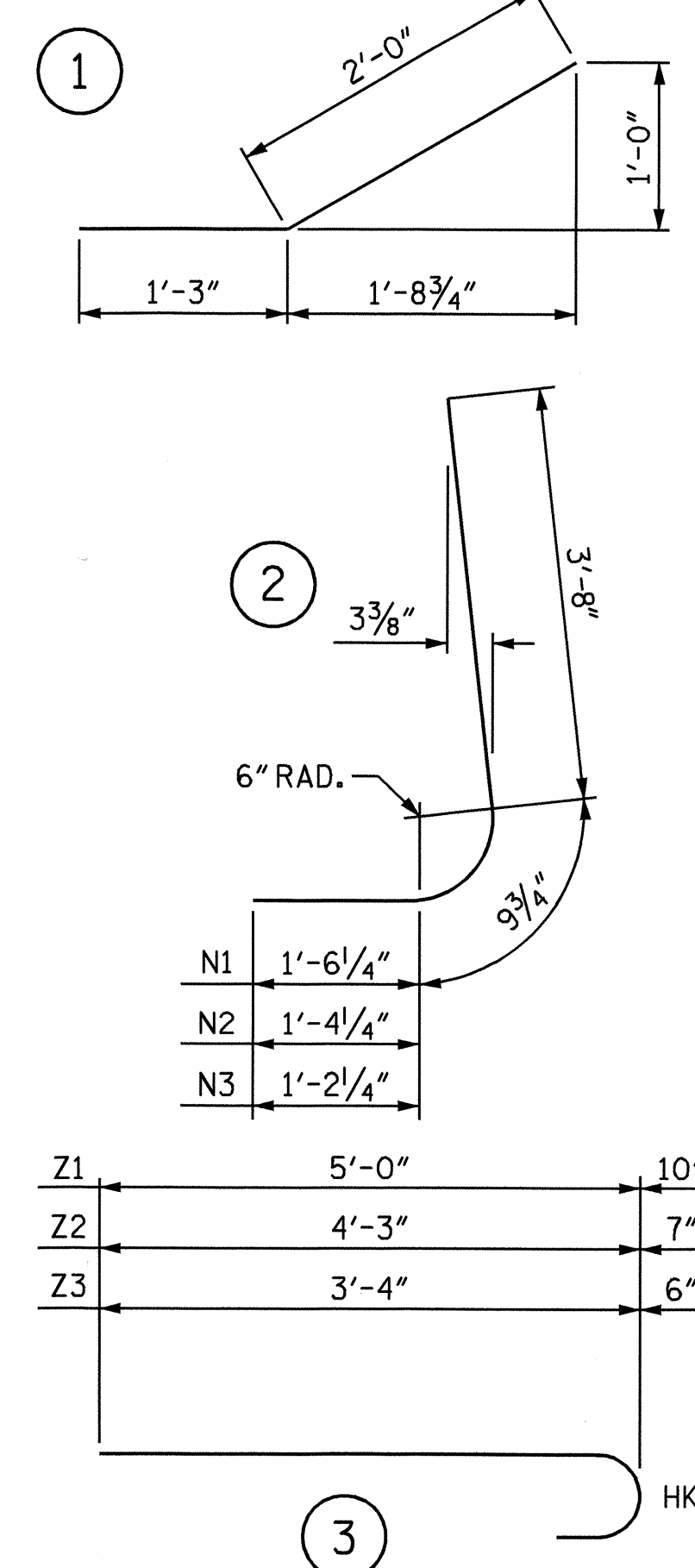
C-4
TOTAL SHEETS
5



PLAN

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

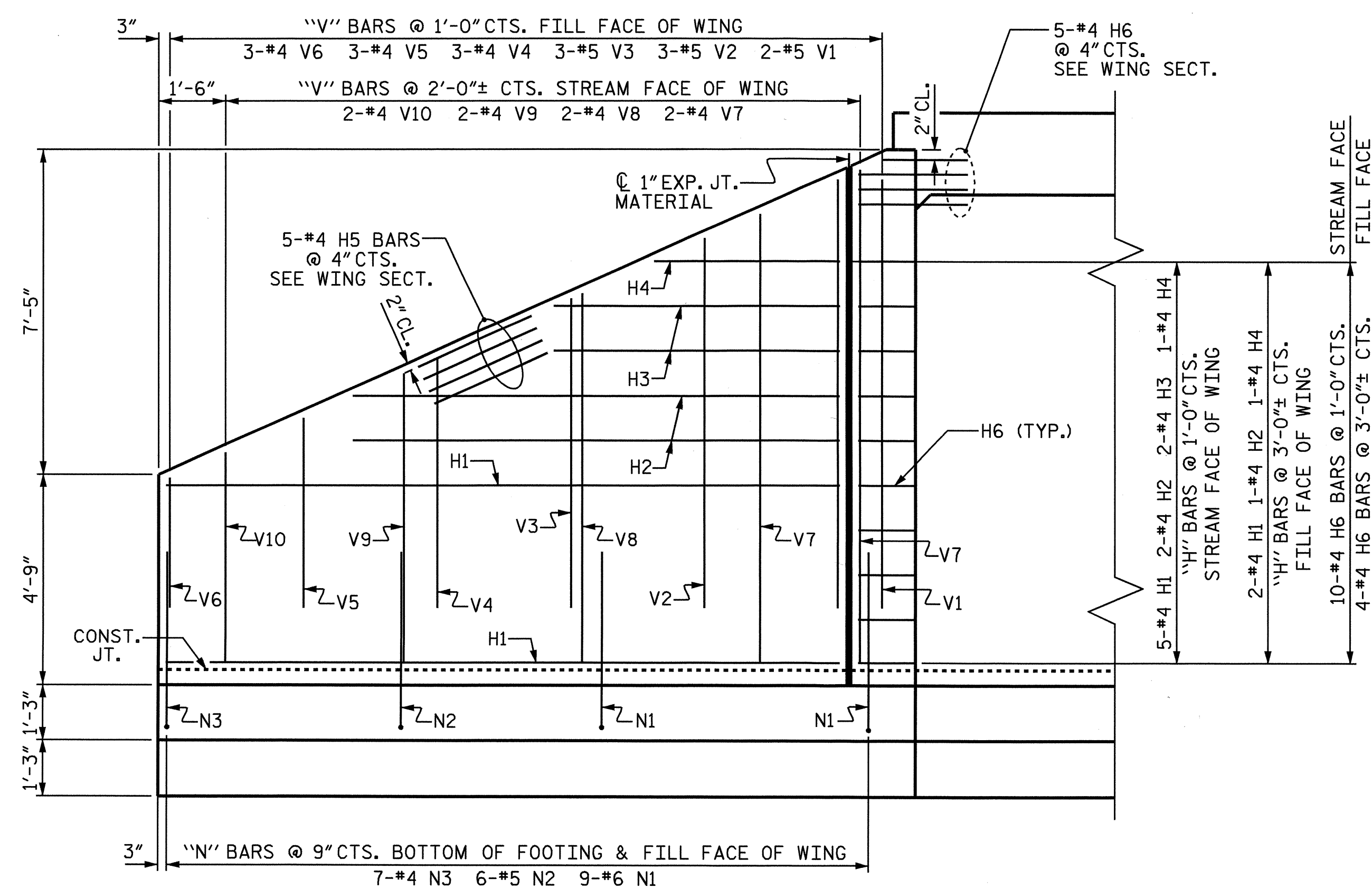


BILL OF MATERIAL

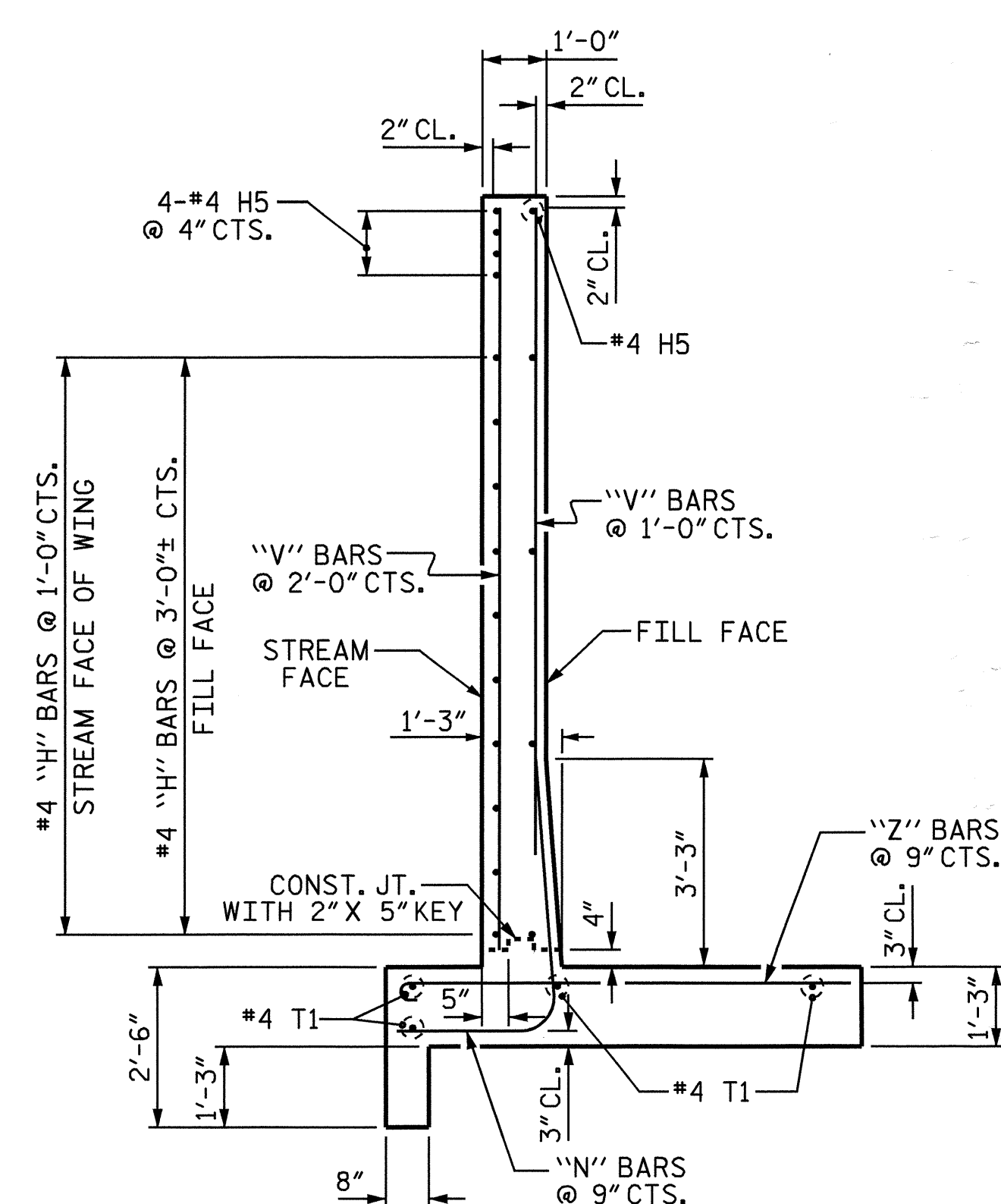
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	28	#4	STR	15'- 1"	282
H2	12	#4	STR	10'-10"	87
H3	8	#4	STR	6'- 4"	34
H4	8	#4	STR	4'- 1"	22
H5	20	#4	STR	16'-0"	214
H6	76	#4	1	3'- 3"	165
<hr/>					
N1	36	#6	2	6'-0"	324
N2	24	#5	2	5'-10"	146
N3	28	#4	2	5'- 8"	106
<hr/>					
S1	12	#6	STR	6'- 0"	108
<hr/>					
T1	16	#4	STR	17'- 0"	182
<hr/>					
V1	8	#5	STR	10'- 3"	86
V2	12	#5	STR	8'- 9"	110
V3	12	#5	STR	7'- 6"	94
V4	12	#4	STR	6'- 0"	48
V5	12	#4	STR	4'- 9"	38
V6	12	#4	STR	3'- 6"	28
V7	8	#4	STR	10'- 0"	53
V8	8	#4	STR	8'- 3"	44
V9	8	#4	STR	6'- 6"	35
V10	8	#4	STR	4'- 9"	25
<hr/>					
Z1	36	#7	3	5'-10"	429
Z2	24	#5	3	4'-10"	121
Z3	28	#4	3	3'-10"	72

REINFORCING STEEL FOR 4 WINGS 2853 LBS

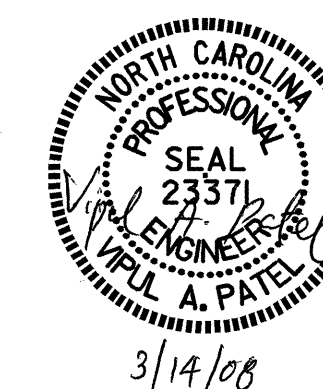
CLASS A CONCRETE
 4 WINGS 40.8 CY
 2 HEADWALLS 2.0 CY
 2 END CURTAIN WALLS 2.3 CY
 SILLS 5.9 CY
 TOTAL 51.0 CY



ELEVATION



TYPICAL WING SECTION



PROJECT NO. B-4300
WAKE COUNTY
 STATION: 20+04.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
STANDARD WINGS FOR CONCRETE BOX CULVERT
 H = 11'-0" SLOPE = 2:1
 90° SKEW

ASSEMBLED BY : R. G. EMERSON DATE : 10/07
 CHECKED BY : S. DOMBROWSKI DATE : 10/07
 DRAWN BY : A.K.PATEL DATE : 11/04
 CHECKED BY : M. K. BEARD DATE : 12/04

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

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.

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