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TIP PROJECT: SS-4914BO

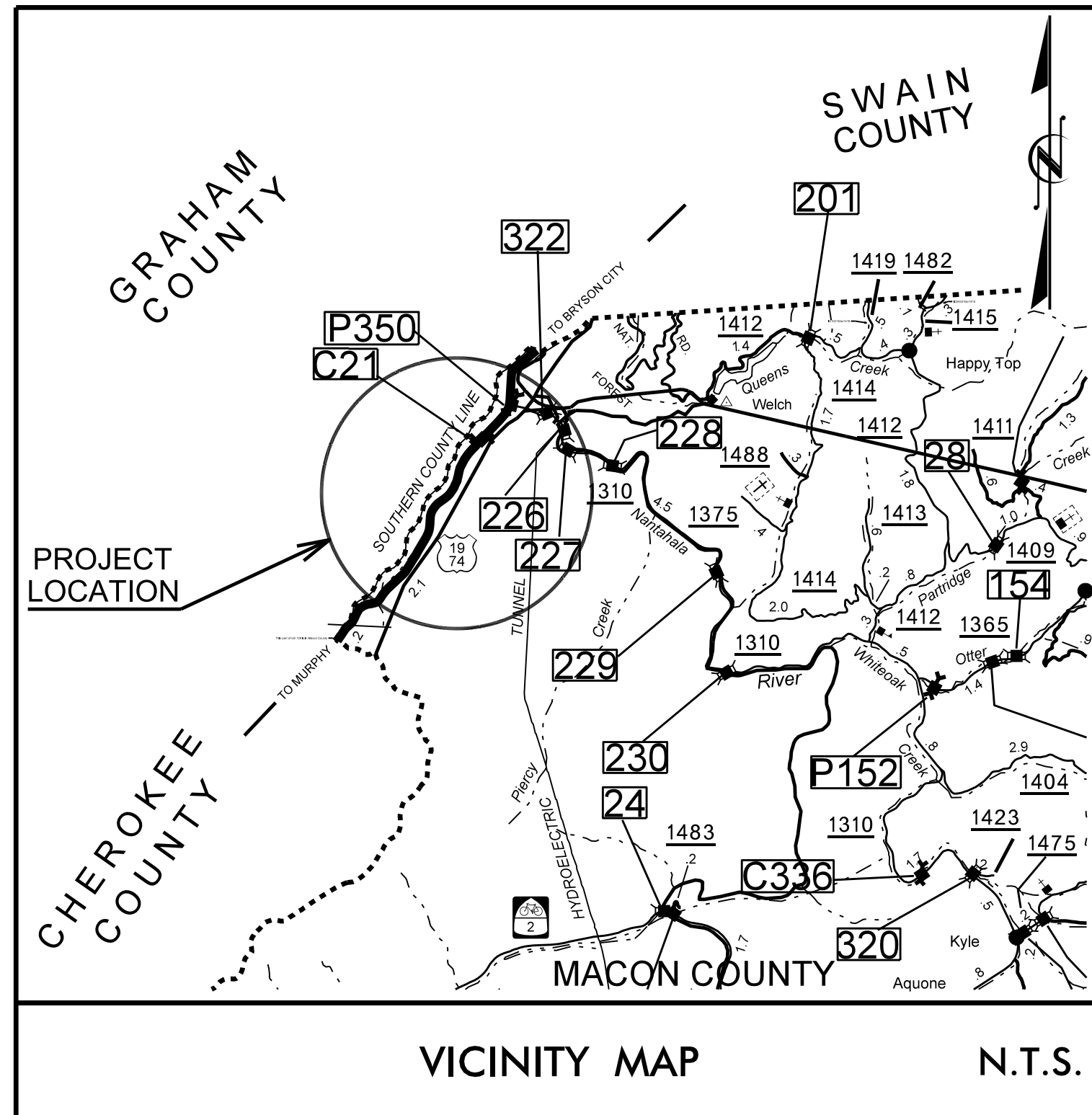
CONTRACT: DN00547

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MACON COUNTY

LOCATION: U.S. HWY 19 /74 OVER LAURAL BRANCH NEAR MACON/CHEROKEE COUNTY LINE
TYPE OF WORK: GRADING, PAVING, BOX CULVERT EXTENSION, GUARDRAIL INSTALLATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SS-4914BO		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
43936.1.FS1	N/A	P.E.	
43936.2.1	N/A	R/W, UTIL.	
43936.3.1	N/A	CONST.	



BEGIN PROJECT
STA. 10+00.00 -L- POT

END PROJECT
STA. 24+10.00 -L- POT

CULVERT

DESIGN DATA

ADT (2015) = 5,200
 T = 8 % **
 * V = 55 MPH
 ** (TTST 4 %, DUAL 4 %)
 FUNC CLASS=THROUGHFARE
 STATEWIDE TIER

PROJECT LENGTH

LENGTH TIP PROJECT: SS-4914BO = 0.27 MILES
 TOTAL LENGTH TIP PROJECT: SS-4914BO = 0.27 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
 STRUCTURES MANAGEMENT UNIT
 1000 BIRCH RIDGE DR.
 RALEIGH, N.C. 27610

2012 STANDARD SPECIFICATIONS

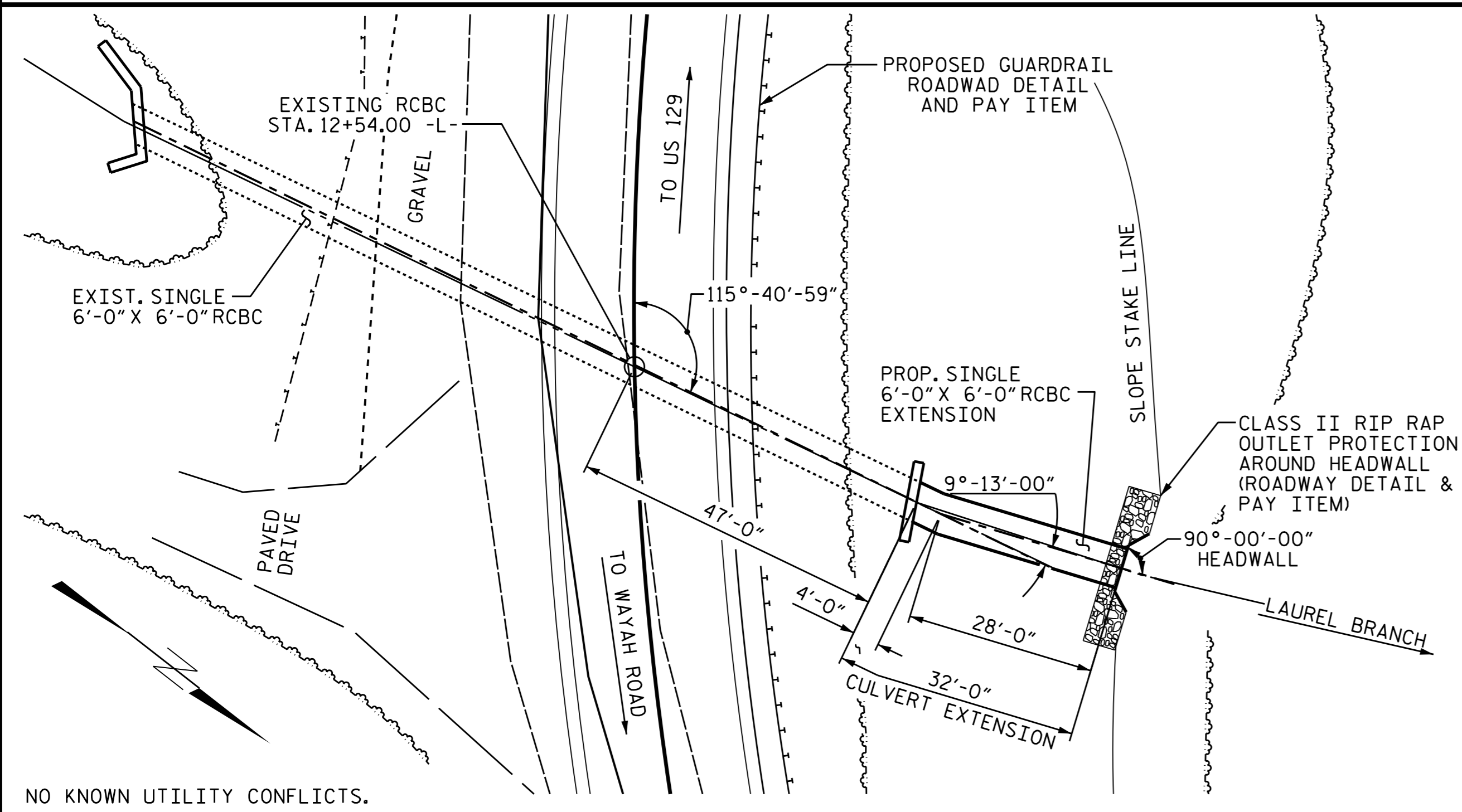
LETTING DATE :
 JANUARY 24, 2017

D. R. CALHOUN, P.E.
PROJECT ENGINEER

W. S. ARAFAT, P.E.
PROJECT DESIGN ENGINEER



T.B.M. #2: 8" SPIKE SET IN SW SIDE OF 24" Ø POPLAR TREE 1'-0"± ABOVE GROUND
 LOCATED SOUTH SIDE OF HWY 19, 15.5' SOUTH EAST OF EXISTING ROCK SIGN,
 EL. 2523.9810 N. 580023.5590 E. 598122.6520



LOCATION SKETCH

HYDRAULIC DATA

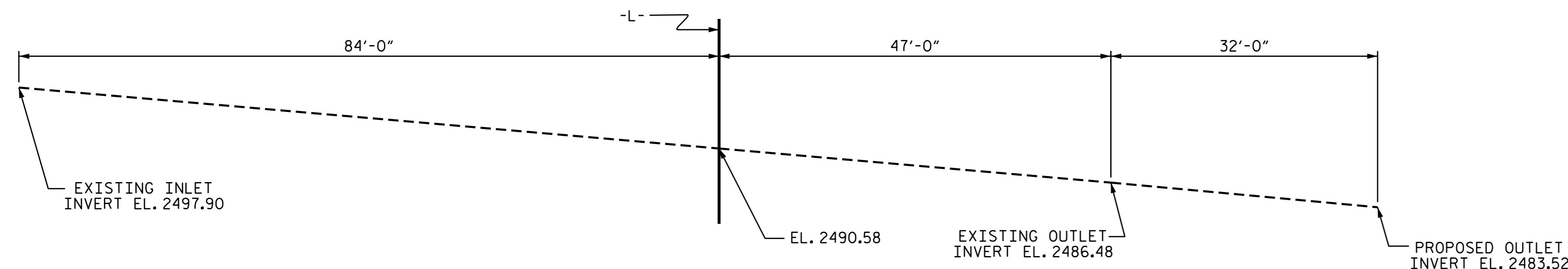
DESIGN DISCHARGE ----- = N/A
 FREQUENCY OF DESIGN FLOOD ----- = N/A
 DESIGN HIGH WATER ELEVATION = N/A.
 DRAINAGE AREA ----- = N/A SQ.
 BASE DISCHARGE (Q100) ----- = N/A
 BASE HIGH WATER ELEVATION = N/A

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE ----- = N/A.
 FREQUENCY OF OVERTOPPING FLOOD ----- = N/A
 OVERTOPPING FLOOD ELEVATION = N/A

ROADWAY DATA

GRADE POINT ELEV. @ STATION 12+54.00 -L- = 2528.38
 BED ELEV. @ STATION 12+54.00 -L- = 2490.58
 ROADWAY SLOPES = 1/2:1



PROFILE ALONG CULVERT

DRAWN BY : H. T. BARBOUR DATE : 4-28-16
 CHECKED BY : V. X. NGUYEN DATE : 5-9-16
 DESIGN ENGINEER OF RECORD: A. M. LEE DATE : 6-16

NOTES

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSION. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

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.

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

DESIGN FILL----- MAX. 18.0 FT. MIN. 2.0 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 CULVERT 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.

AT THE CONTRACTORS OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL 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.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

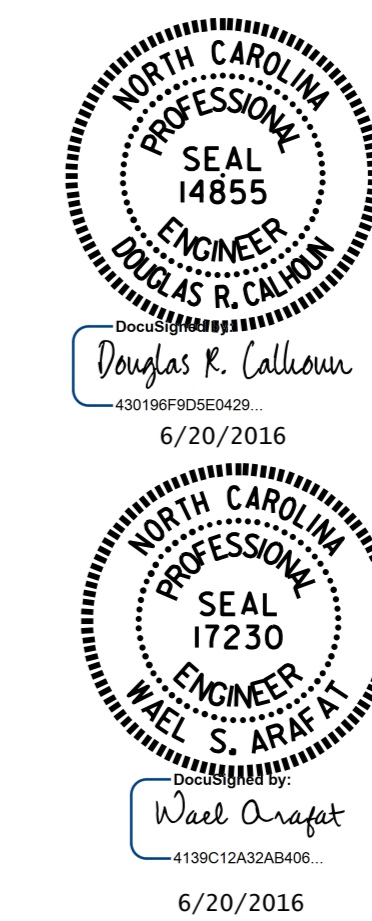
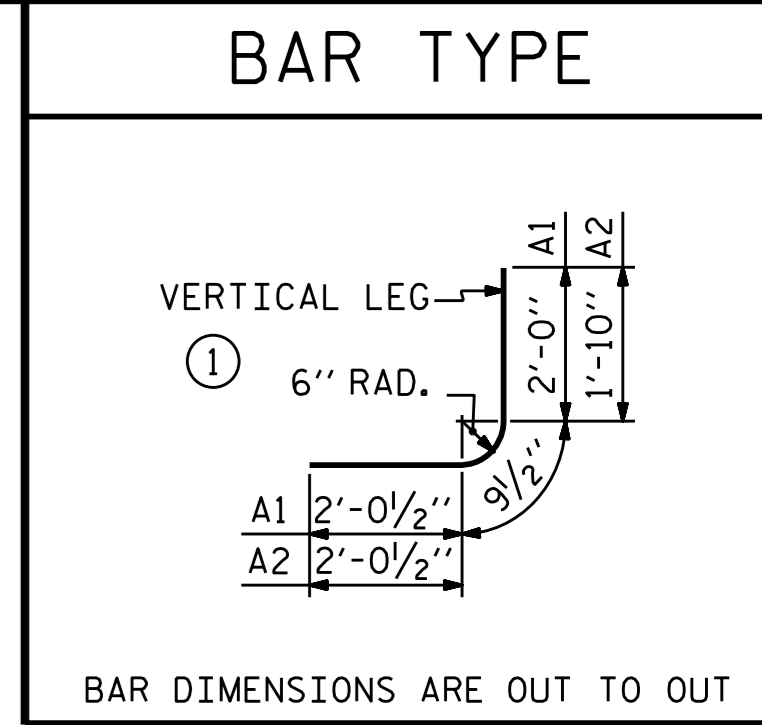
FOR TEMPORARY STREAM DIVERSION, SEE ROADWAY PLANS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

TOTAL STRUCTURE QUANTITIES	
CLASS A CONCRETE	
BARREL @ .674	CY/FT 21.6 C.Y.
WING ETC.	8.0 C.Y.
TOTAL	29.6 C.Y.
REINFORCING STEEL	
BARREL	3167 LBS.
WINGS ETC.	396 LBS.
TOTAL	3563 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MAT'L.	26 TONS

SPLICE CHART		
BAR	SIZE	SPLICE LENGTH
B1	#4	1'-5"
C1	#4	1'-11"

REINFORCING BAR SCHEDULE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	85	#4	1	4'-10"	274
A2	85	#5	1	4'-8"	414
A100	64	#4	STR.	6'-11"	296
A101	1	#4	STR.	5'-5"	4
A102	1	#4	STR.	3'-7"	2
A103	1	#4	STR.	1'-9"	1
A200	64	#5	STR.	6'-11"	462
A201	1	#5	STR.	5'-5"	6
A202	1	#5	STR.	3'-7"	4
A203	1	#5	STR.	1'-9"	2
B1	63	#4	STR.	6'-10"	288
B2	85	#4	STR.	5'-4"	303
C1	76	#4	STR.	17'-0"	863
D1	20	#6	STR.	2'-6"	75
F1	9	#4	STR.	7'-0"	42
G1	2	#5	STR.	7'-0"	15
S1	6	#8	STR.	7'-3"	116
REINFORCING STEEL					3167 LBS.

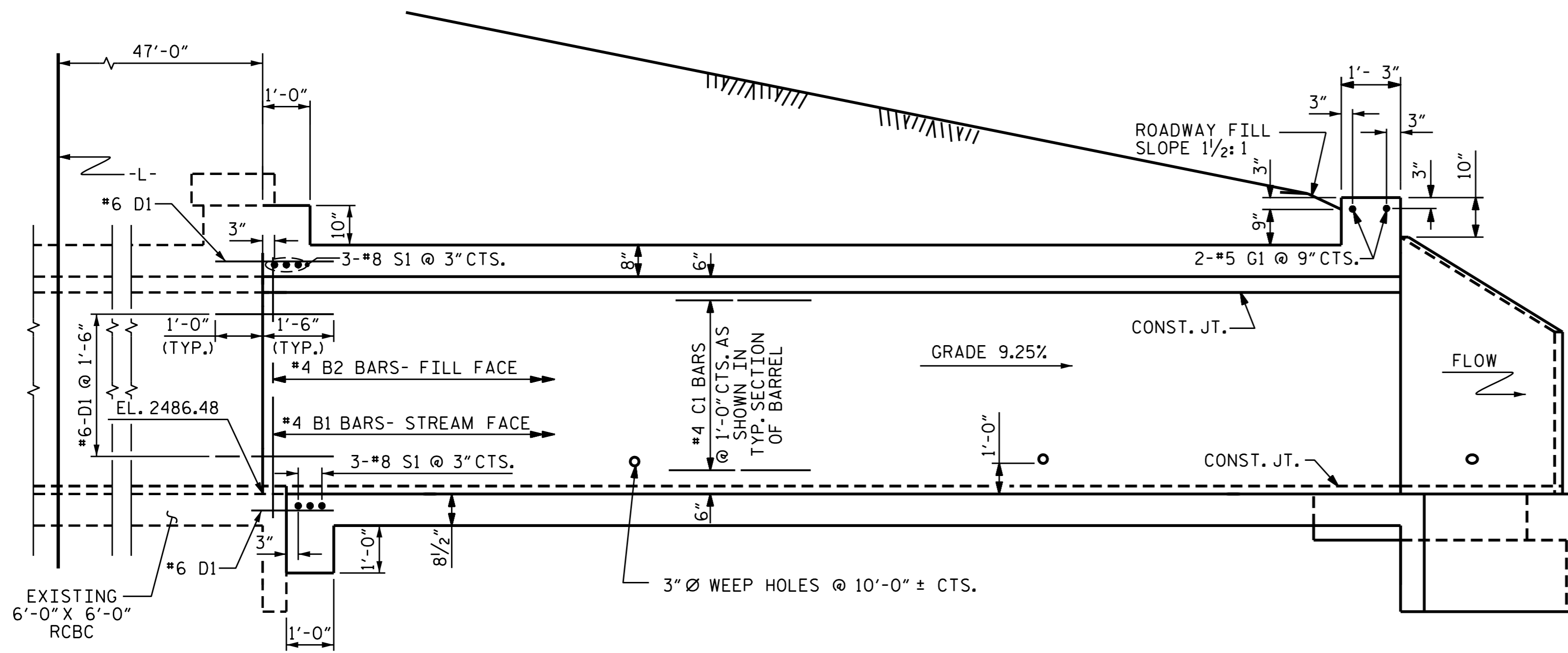


PROJECT NO. SS-4914B0
 MACON COUNTY
 STATION: 12+54.00 -L-

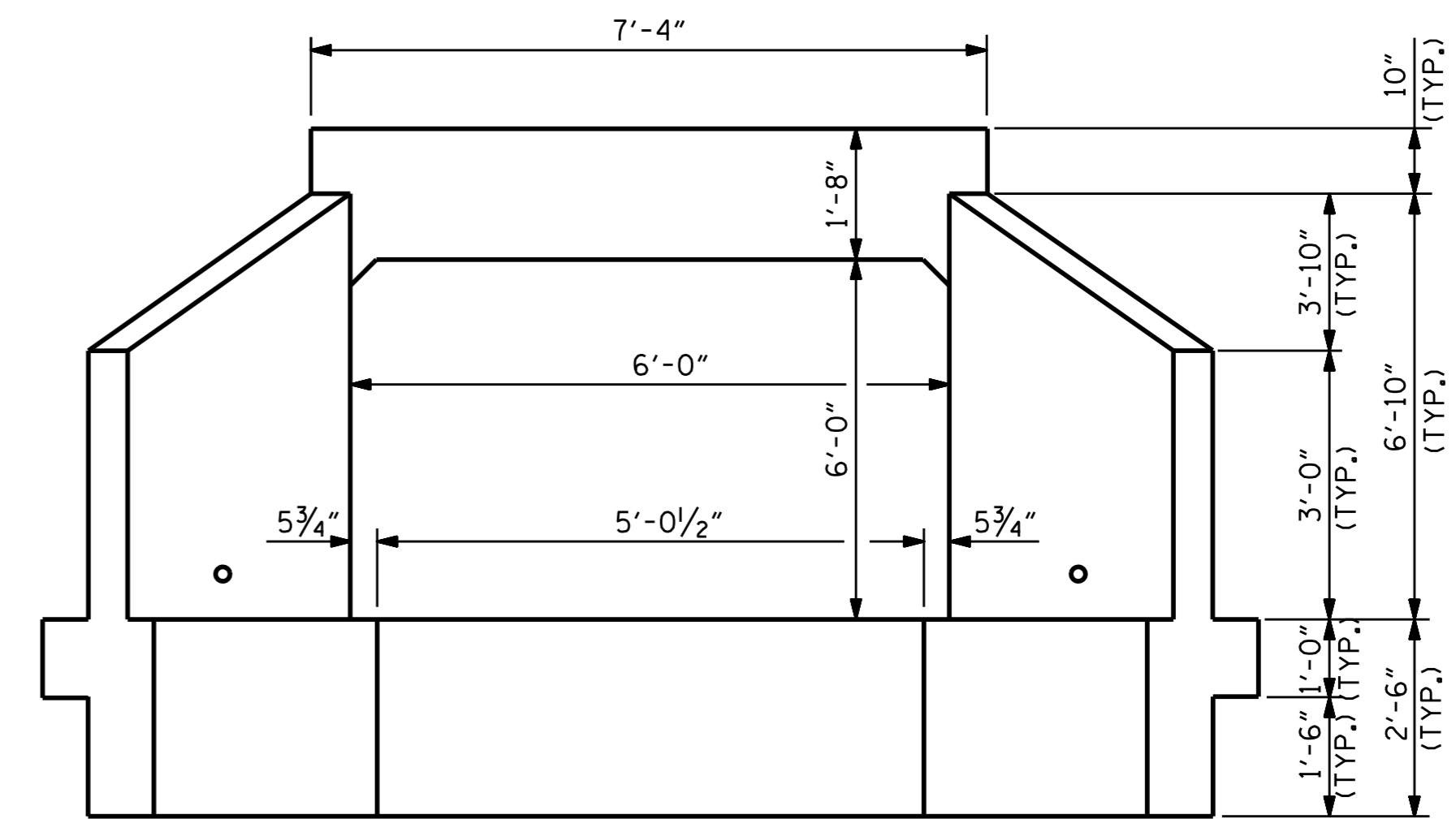
SHEET 1 OF 6
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 SINGLE 6 FT. X 6 FT. CONCRETE BOX CULVERT
 90°-00'-00" SKEW (RIGHT EXTENSION)

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

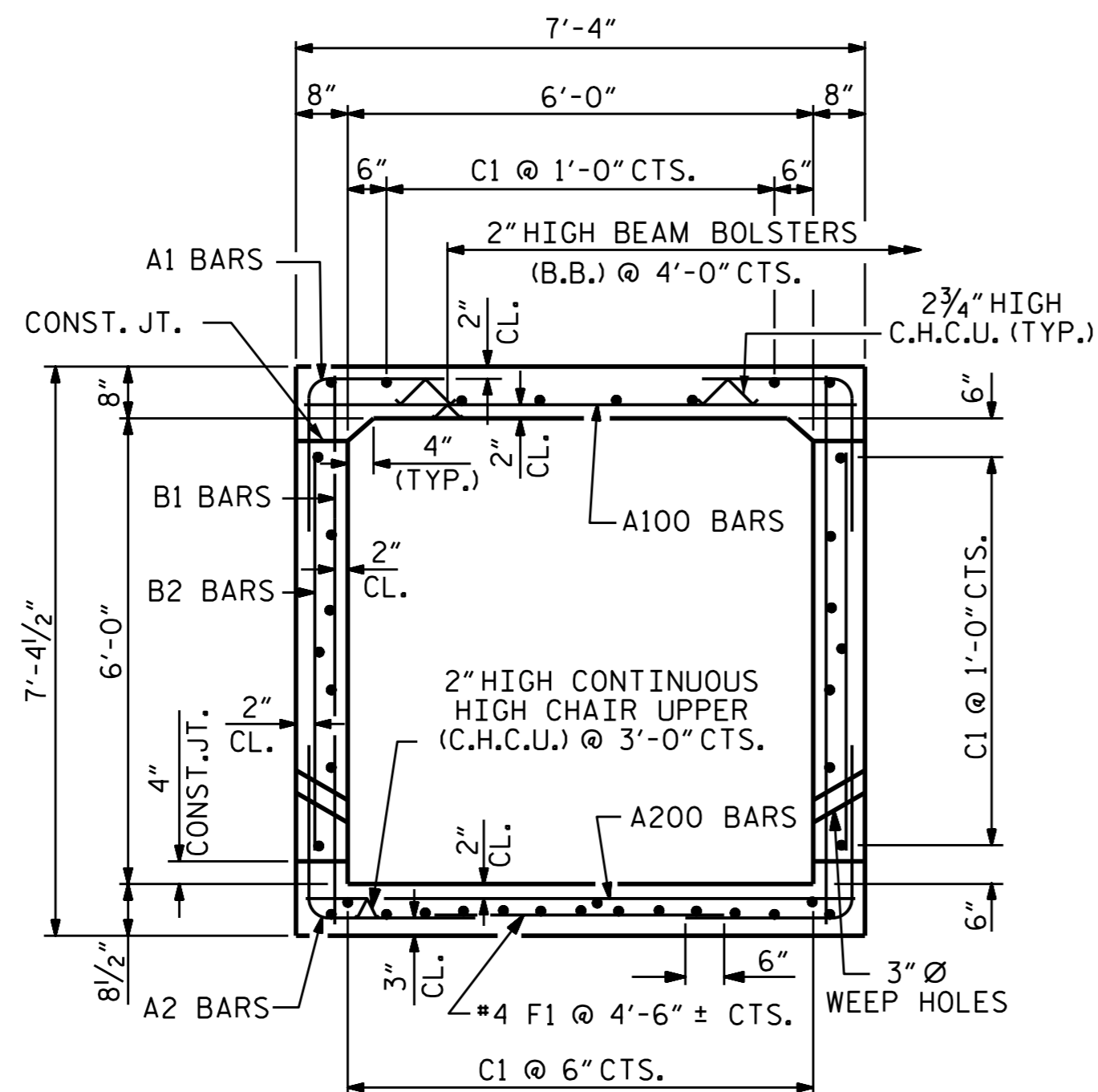
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



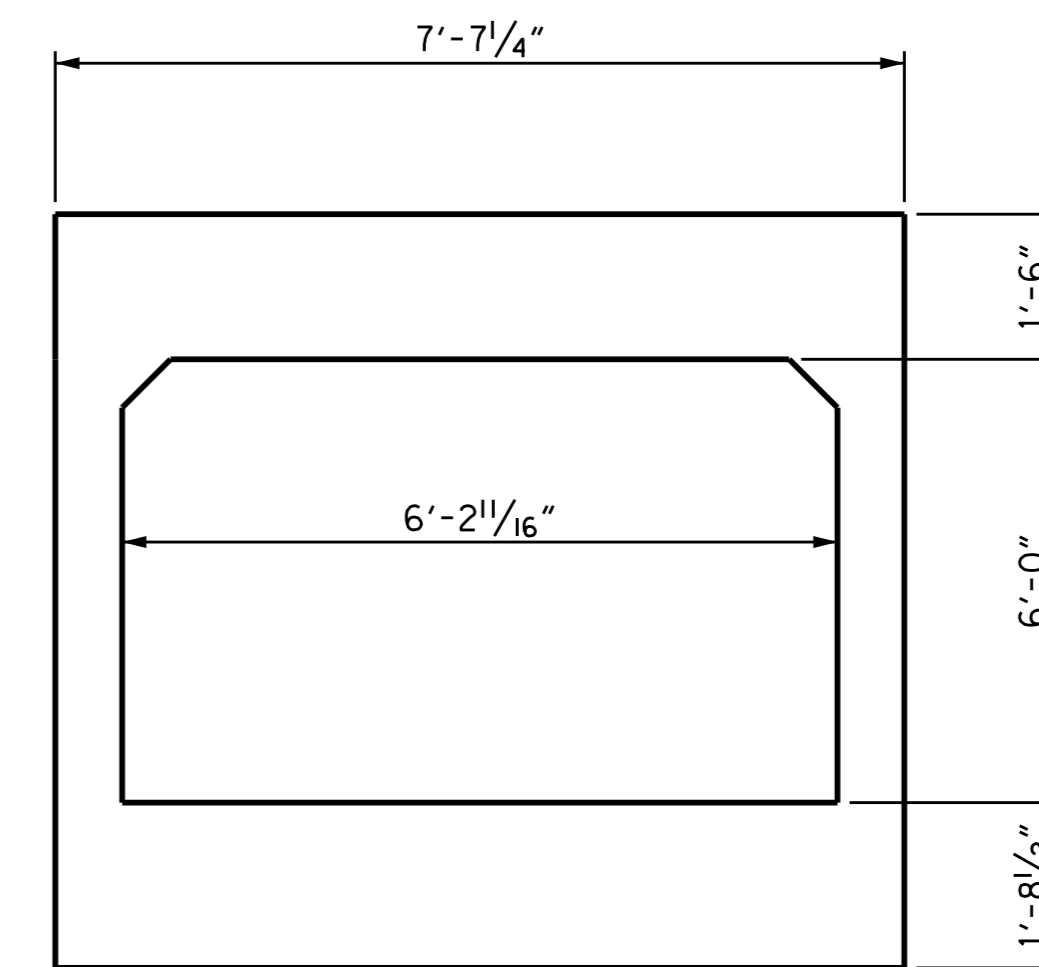
CULVERT SECTION NORMAL TO ROADWAY



OUTLET END ELEVATION



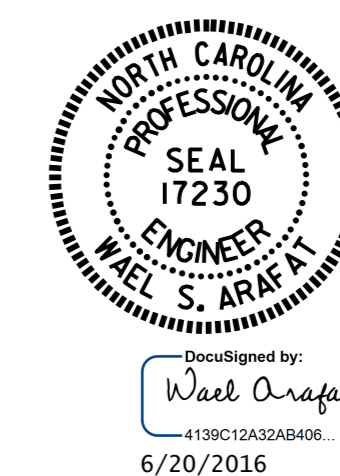
RIGHT ANGLE SECTION OF BARREL
 THERE ARE 38 "C" BARS IN SECTION OF BARREL



INLET END ELEVATION

PROJECT NO. SS-4914B0
MACON COUNTY
 STATION: 12+54.00 -L-

SHEET 2 OF 6



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 6 FT. X 6 FT.
 CONCRETE BOX CULVERT
 90°-00'-00" SKEW
 (RIGHT EXTENSION)

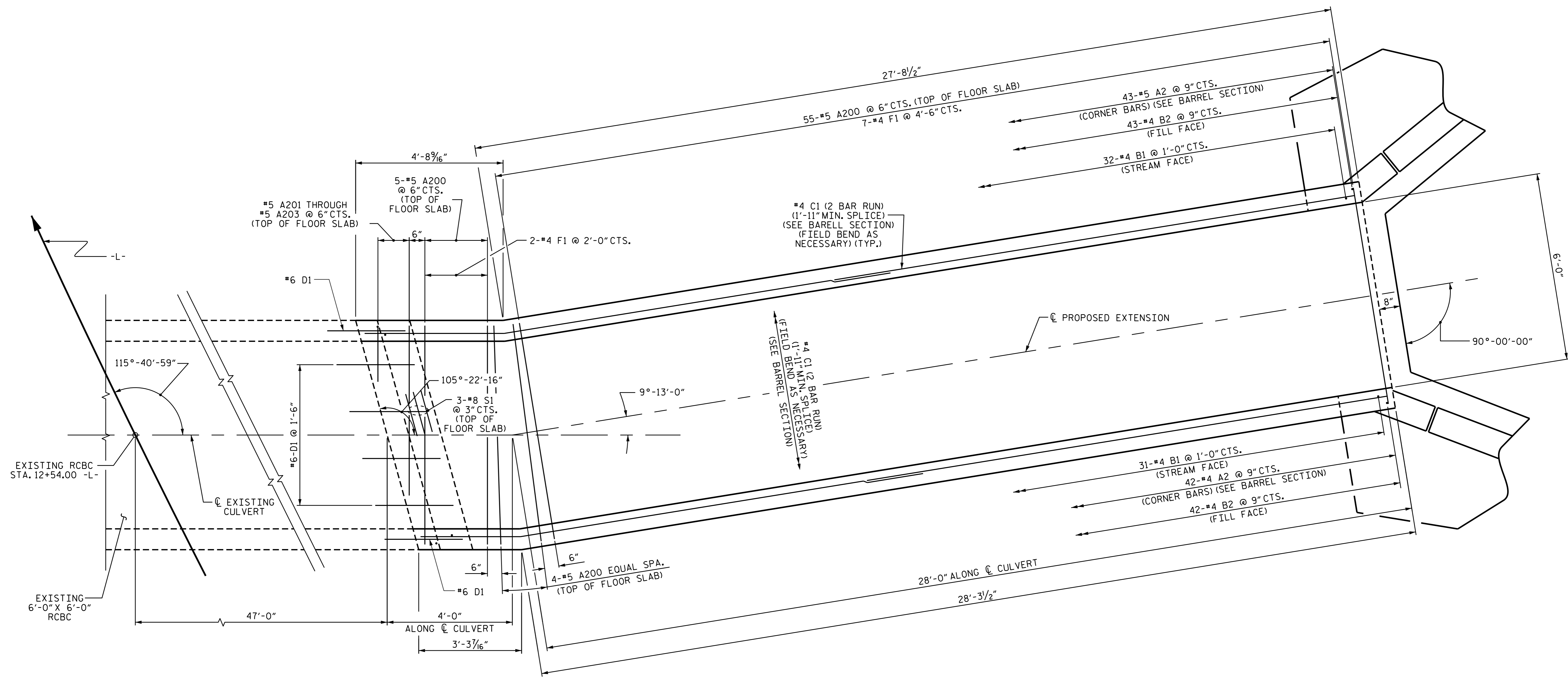
DOCUMENT NOT CONSIDERED
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REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

C-2
 TOTAL SHEETS
 6

REVISED 8-28-92 BY E.L.R. CHECKED BY G.R.P.
 REVISED 8-22-89 BY A.R.B. CHECKED BY C.R.K.
 REDRAWN 8-22-1989
 REVISED 11-19-99 BY M.M. CHECKED BY R.W.W.

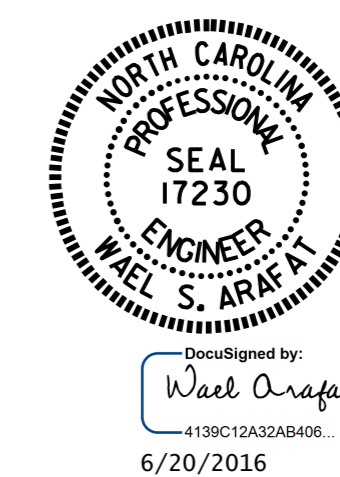
ASSEMBLED BY : <u>H.T. BARBOUR</u> DATE : <u>4-27-16</u>	SPECIAL
CHECKED BY : <u>V.X. NGUYEN</u> DATE : <u>5-9-16</u>	
DRAWN BY : <u>R. WRIGHT</u> DATE : <u>AUG. 1989</u>	STANDARD
CHECKED BY : <u>A.R. BISSETTE</u> DATE : <u>AUG. 1989</u>	



PLAN OF FLOOR SLAB

PROJECT NO. SS-4914B0
MACON COUNTY
 STATION: 12+54.00 -L-

SHEET 3 OF 6

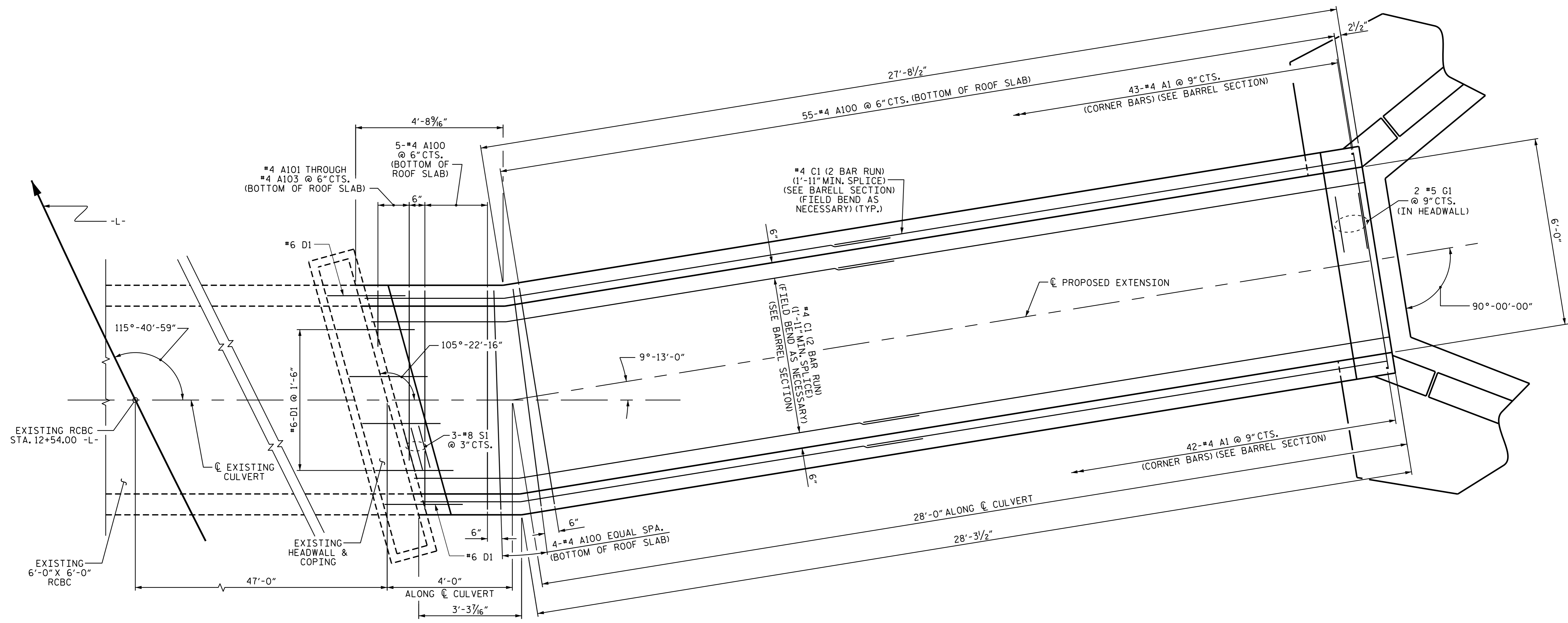


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 6 FT. X 6 FT.
 CONCRETE BOX CULVERT
 90°-00'-00" SKEW
 (RIGHT EXTENSION)

DRAWN BY : H. T. BARBOUR DATE : 4-27-16
 CHECKED BY : V. X. NGUYEN DATE : 5-9-15
 DESIGN ENGINEER OF RECORD: A. M. LEE DATE : 6-19

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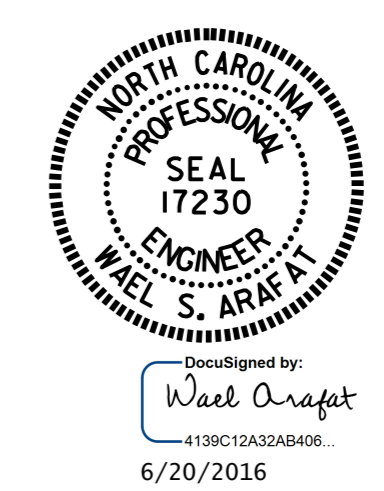
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			C-3
2			4			6



PLAN OF ROOF SLAB

PROJECT NO. SS-4914B0
MACON COUNTY
 STATION: 12+54.00 -L-

SHEET 4 OF 6



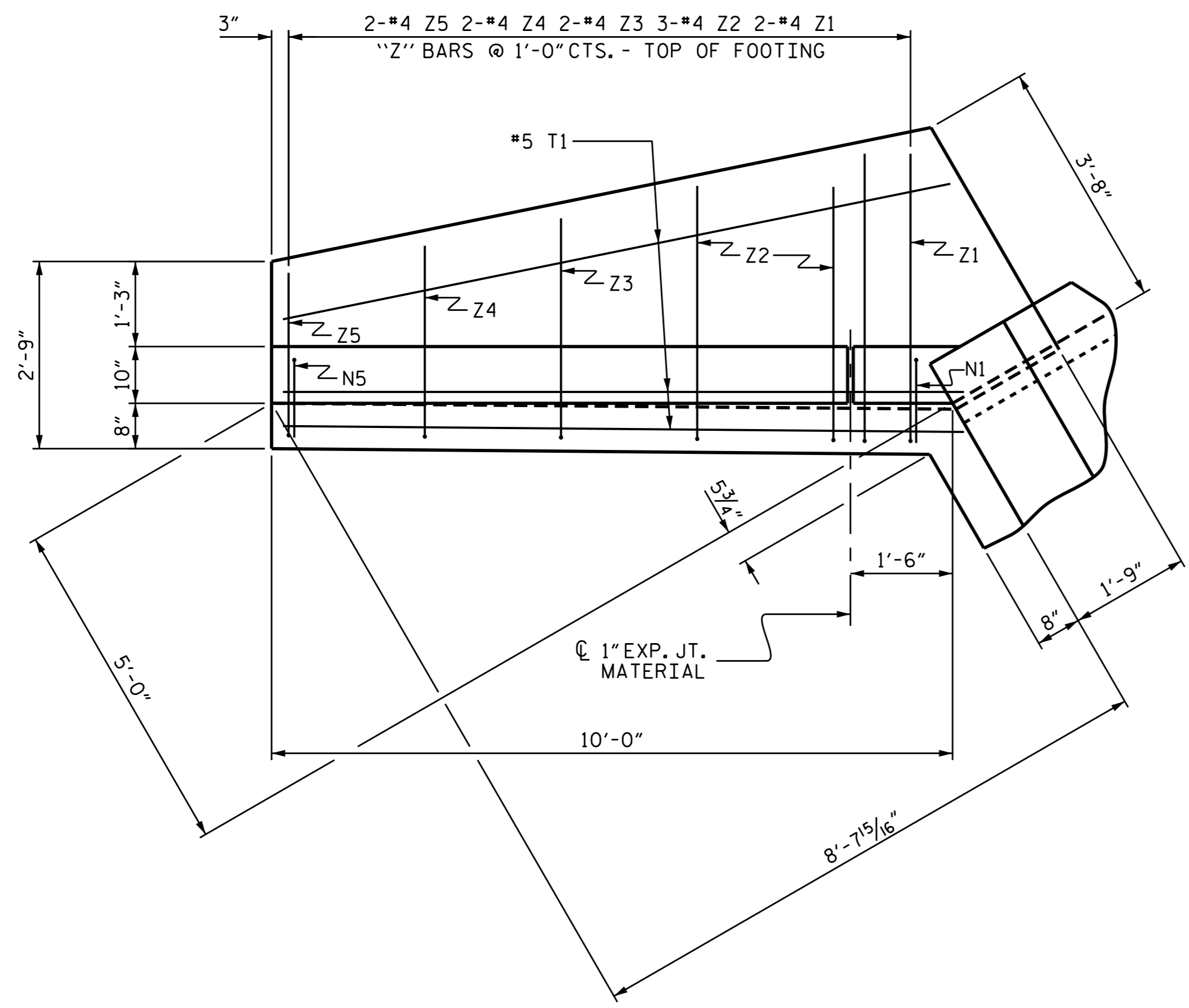
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SINGLE 6 FT. X 6 FT.
 CONCRETE BOX CULVERT
 90°-00'-00" SKEW
 (RIGHT EXTENSION)**

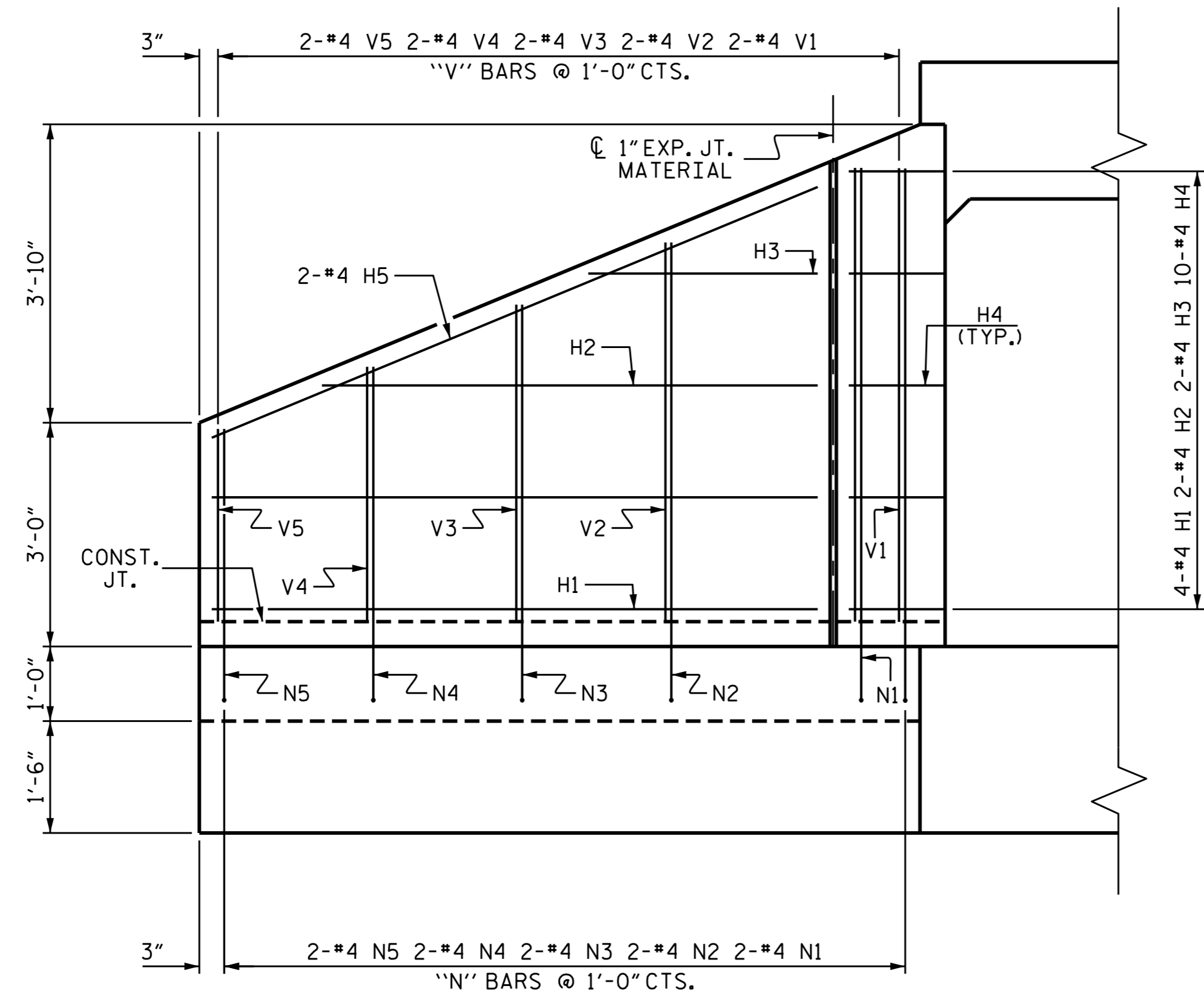
DRAWN BY : H. T. BARBOUR DATE : 4-27-16
 CHECKED BY : V. X. NGUYEN DATE : 5-9-16
 DESIGN ENGINEER OF RECORD: A. M. LEE DATE : 6-19

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

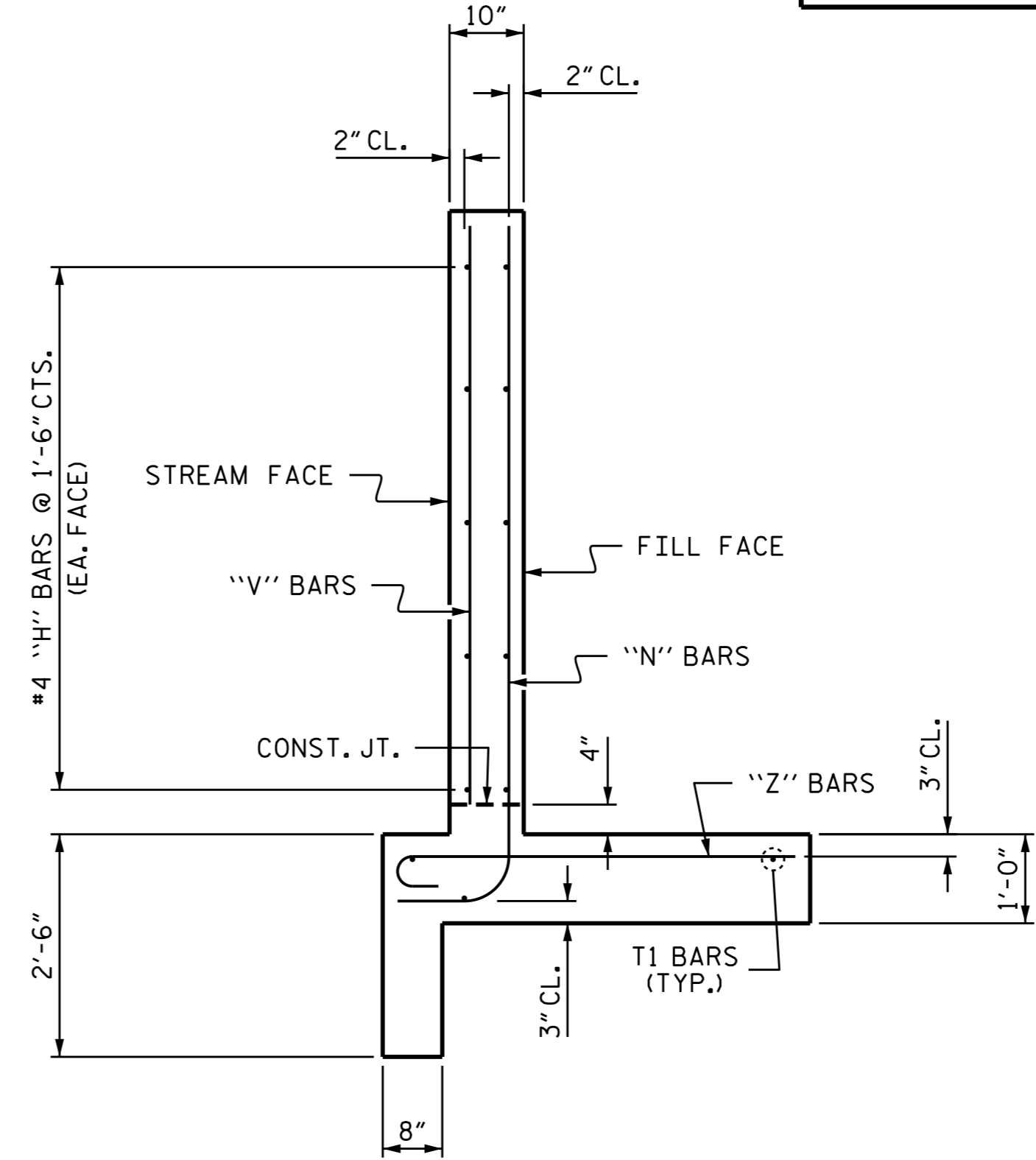
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			C-4
2			4			6



PLAN



ELEVATION



TYPICAL WING SECTION

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

Z1	4'-3"	6"
Z2	3'-9"	6"
Z3	3'-3"	6"
Z4	2'-10"	6"
Z5	2'-5"	6"

BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	8	#4	STR	8'-1"	43
H2	4	#4	STR	6'-8"	18
H3	4	#4	STR	3'-1"	8
H4	20	#4	1	3'-3"	43
H5	4	#4	STR	8'-9"	23
N1	4	#4	2	8'-2"	22
N2	4	#4	2	7'-1"	19
N3	4	#4	2	6'-3"	17
N4	4	#4	2	5'-5"	14
N5	4	#4	2	4'-7"	12
T1	6	#5	STR	10'-0"	63
V1	4	#4	STR	6'-1"	16
V2	4	#4	STR	5'-1"	14
V3	4	#4	STR	4'-3"	11
V4	4	#4	STR	3'-5"	9
V5	4	#4	STR	2'-7"	7
Z1	4	#4	3	4'-9"	13
Z2	6	#4	3	4'-3"	17
Z3	4	#4	3	3'-9"	10
Z4	4	#4	3	3'-4"	9
Z5	4	#4	3	2'-11"	8
REINFORCING STEEL FOR 2 WINGS					396 LBS
CLASS A CONCRETE					
2 WINGS				6.9	CY
1 HEADWALL				0.3	CY
END CURTAIN WALL				0.3	CY
2 EDGE BEAMS				0.5	CY
TOTAL				8.0	CY

ASSEMBLED BY : H. T. BARBOUR DATE : 4-21-16
 CHECKED BY : V. X. NGUYEN DATE : 5-9-16
 DRAWN BY : CCJ 10/99
 CHECKED BY : RWW 03/00

PROJECT NO. SS-4914B0
 MACON COUNTY
 STATION: 12+54.00 -L-
 SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

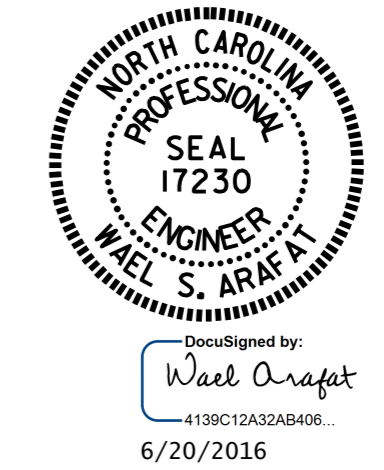
WINGS FOR CONCRETE BOX CULVERT
 H = 6'-0" SLOPE = 2:1
 90° SKEW

REVISIONS

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

SHEET NO. C-5
 TOTAL SHEETS 6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



**LOAD AND RESISTANCE FACTOR RATING (LRFR)
SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS**

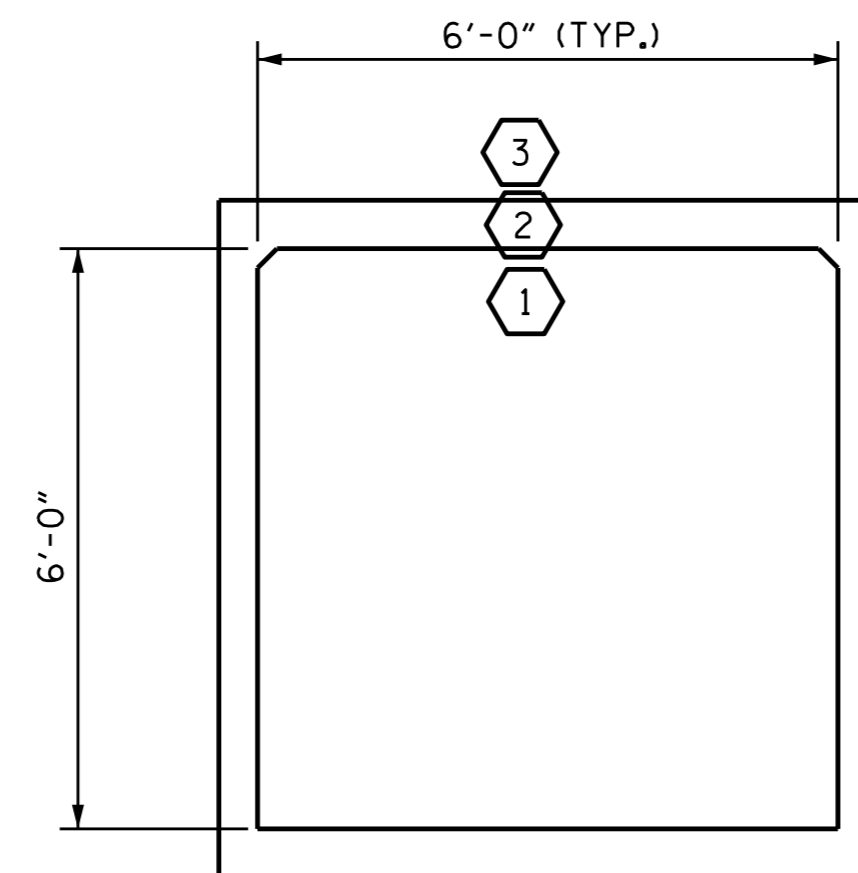
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								COMMENT NUMBER		
						MOMENT				SHEAR						
						LIVE-LOAD FACTORS (LL)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE		DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	2.47	--	1.75	2.47	1	TOP SLAB	3.33	2.79	1	BOTTOM SLAB	0.84		
	HL-93 (OPERATING)	N/A		3.21	--	1.35	3.21	1	TOP SLAB	3.33	3.62	1	BOTTOM SLAB	0.84		
	HS-20 (INVENTORY)	36.000	2	3.75	134.90	1.75	3.75	1	TOP SLAB	3.33	3.90	1	BOTTOM SLAB	0.84		
	HS-20 (OPERATING)	36.000		4.86	174.87	1.35	4.86	1	TOP SLAB	3.33	5.05	1	BOTTOM SLAB	0.84		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH		6.78	91.53	1.40	6.78	1	TOP SLAB	3.33	7.14	1	BOTTOM SLAB	0.84		
		SNGARBS2	20.000		6.40	127.96	1.40	6.40	1	TOP SLAB	3.33	6.70	1	BOTTOM SLAB	0.84	
		SNAGRIS2	22.000		6.78	149.15	1.40	6.78	1	TOP SLAB	3.33	7.14	1	BOTTOM SLAB	0.84	
		SNCOTTS3	27.250	3	3.09	84.27	1.40	3.09	1	TOP SLAB	3.33	3.49	1	BOTTOM SLAB	0.84	
		SNAGGRS4	34.925		4.06	141.73	1.40	4.06	1	TOP SLAB	3.33	4.59	1	BOTTOM SLAB	0.84	
		SNS5A	35.550		3.67	130.31	1.40	3.67	1	TOP SLAB	3.33	4.12	1	BOTTOM SLAB	0.84	
		SNS6A	39.950		3.67	146.44	1.40	3.67	1	TOP SLAB	3.33	4.12	1	BOTTOM SLAB	0.84	
		SNS7B	42.000		3.67	153.96	1.40	3.67	1	TOP SLAB	3.33	4.12	1	BOTTOM SLAB	0.84	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		6.78	223.73	1.40	6.78	1	TOP SLAB	3.33	7.14	1	BOTTOM SLAB	0.84	
		TNT4A	33.075		3.67	121.24	1.40	3.67	1	TOP SLAB	3.33	4.12	1	BOTTOM SLAB	0.84	
		TNT6A	41.600		3.67	152.49	1.40	3.67	1	TOP SLAB	3.33	4.12	1	BOTTOM SLAB	0.84	
		TNT7A	42.000		3.67	153.96	1.40	3.67	1	TOP SLAB	3.33	4.12	1	BOTTOM SLAB	0.84	
		TNT7B	42.000		3.67	153.96	1.40	3.67	1	TOP SLAB	3.33	4.12	1	BOTTOM SLAB	0.84	
		TNAGRIT4	43.000		3.50	150.35	1.40	3.50	1	TOP SLAB	3.33	3.97	1	BOTTOM SLAB	0.84	
		TNAGT5A	45.000		3.58	161.06	1.40	3.58	1	TOP SLAB	3.33	4.02	1	BOTTOM SLAB	0.84	
		TNAGT5B	45.000		3.67	164.95	1.40	3.67	1	TOP SLAB	3.33	4.12	1	BOTTOM SLAB	0.84	

LOAD FACTORS:

LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

NOTE:
RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

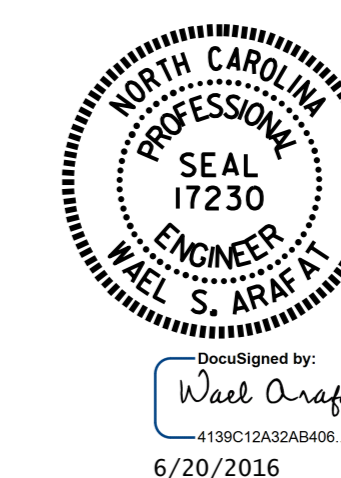
#	CONTROLLING LOAD RATING
1	DESIGN LOAD RATING (HL-93)
2	DESIGN LOAD RATING (HS-20)
3	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	



LRFR SUMMARY
(LOOKING DOWNSTREAM)

PROJECT NO. SS-4914B0
MACON COUNTY
STATION: 12+54.00 -L-

SHEET 6 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
REINFORCED CONCRETE
BOX CULVERTS
(NON-INTERSTATE TRAFFIC)

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

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

ASSEMBLED BY : H. T. BARBOUR DATE : 4-28-16
CHECKED BY : V. X. NGUYEN DATE : 5-9-16
DRAWN BY : WMC 7/11 REV. 10/1/11 MAA/GM
CHECKED BY : CM 7/11

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 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. 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

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