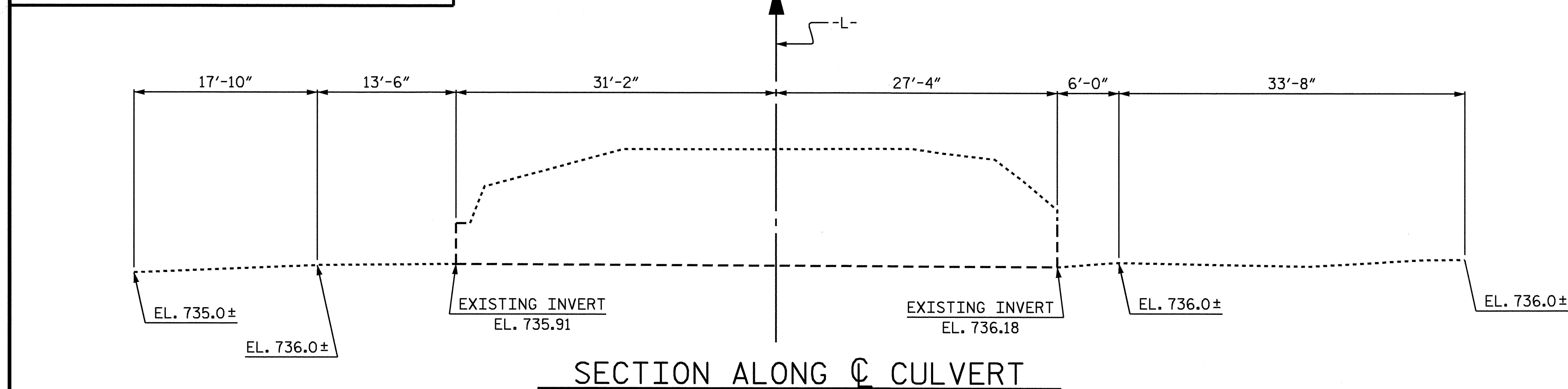


LOCATION SKETCH

GRADE DATA	
GRADE PT. EL. @ STA. 22+94.00 -L-	= 748.335
BED EL. @ STA. 22+94.00 -L-	= 736.050
ROADWAY SLOPES	= 2:1
HYDRAULIC DATA	
DESIGN DISCHARGE	= 150 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 741.9'
DRAINAGE AREA	= 55 ACRES
BASIC DISCHARGE (Q100)	= 175 CFS
BASIC HIGH WATER ELEVATION	= 743.8'
OVERTOPPING DATA	
OVERTOPPING DISCHARGE	= 200 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 100+ YEARS
OVERTOPPING FLOOD ELEVATION	= 746.0'



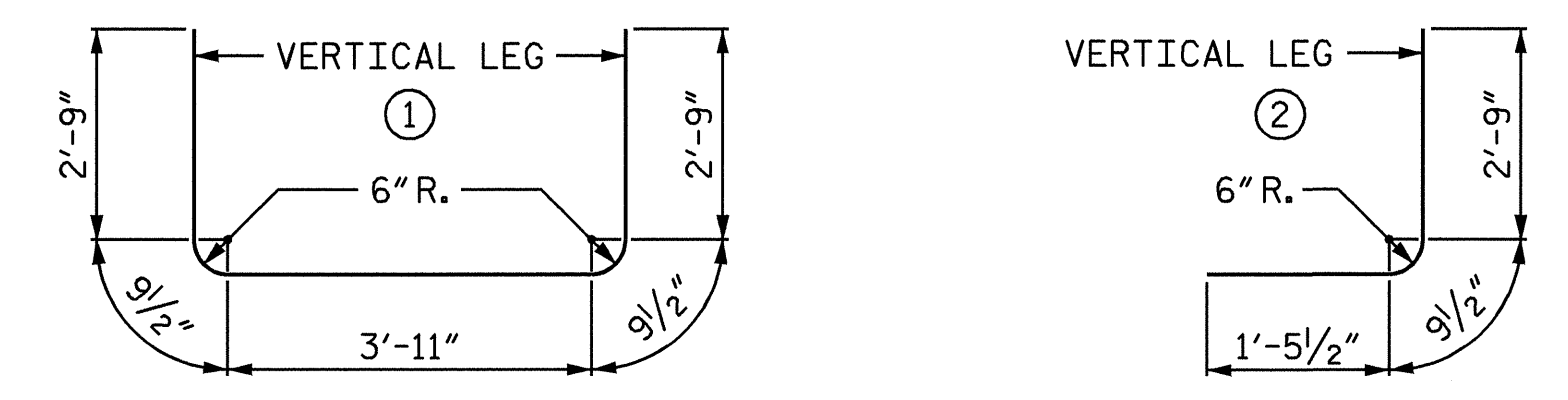
SECTION ALONG CULVERT

DRAWN BY : P.C. BREWER DATE : 10/4/07
 CHECKED BY : L.E. SUTTON DATE : 10/8/07

15-OCT-2007 09:29
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 lsutton

BILL OF MATERIAL

LEFT EXTENSION						RIGHT EXTENSION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	19	4	1	11'-0"	140	A1	30	4	1	11'-0"	220
A2	19	4	1	11'-0"	140	A2	30	4	1	11'-0"	220
A3	2	4	2	5'-0"	7	A3	2	4	2	5'-0"	7
A4	2	4	2	5'-0"	7	A4	2	4	2	5'-0"	7
A100	19	4	STR	4'-11"	62	A100	30	4	STR	4'-11"	99
A200	19	4	STR	4'-11"	62	A200	30	4	STR	4'-11"	99
B1	34	4	STR	5'-2"	117	B1	50	4	STR	5'-2"	173
C1	48	4	STR	9'-0"	289	C2	48	4	STR	13'-2"	422
D1	12	6	STR	2'-6"	45	D1	12	6	STR	2'-6"	45
G1	2	4	STR	5'-2"	7	G1	2	4	STR	5'-2"	7
S2	12	8	STR	5'-2"	166	S2	12	8	STR	5'-2"	166
REINFORCING STEEL LBS. 1,042						REINFORCING STEEL 1,465					



BAR TYPE
DIMENSIONS ARE OUT TO OUT.

SPLICE LENGTH CHART		
BAR	SIZE	SPLICE LENGTH
"C"	#4	1'-11"

TOTAL QUANTITIES	
CLASS A CONCRETE	
LEFT EXT. @ 0.531 CY/FT	8.7 C.Y.
RIGHT EXT. @ 0.531 CY/FT	13.1 C.Y.
WINGS, ETC.	10.6 C.Y.
TOTAL	32.4 C.Y.
REINFORCING STEEL	
LEFT EXT.	1,042 LBS.
RIGHT EXT.	1,465 LBS.
WINGS, ETC.	569 LBS.
TOTAL	3,076 LBS.
FOUNDATION COND. MAT'L.	
LEFT EXT.	6 TONS
RIGHT EXT.	9 TONS
TOTAL	15 TONS
CULVERT EXCAVATION	LUMP SUM

NOTES:
 ASSUMED LIVE LOAD -----HS20-44 OR ALTERNATE LOADING.
 DESIGN FILL-----8.38 FT.
 FOR OTHER DESIGN DATA AND NOTES SEE SHEET SN.
 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 THE 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.
 IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSIONS. 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. NO FIELD TESTING IS REQUIRED. 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.
 FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
 NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
 SEE SPECIAL PROVISIONS FOR:
 FALSEWORK AND FORMWORK
 SUBMITTAL OF WORKING DRAWINGS
 CRANE SAFETY
 GROUT FOR STRUCTURES
 ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS

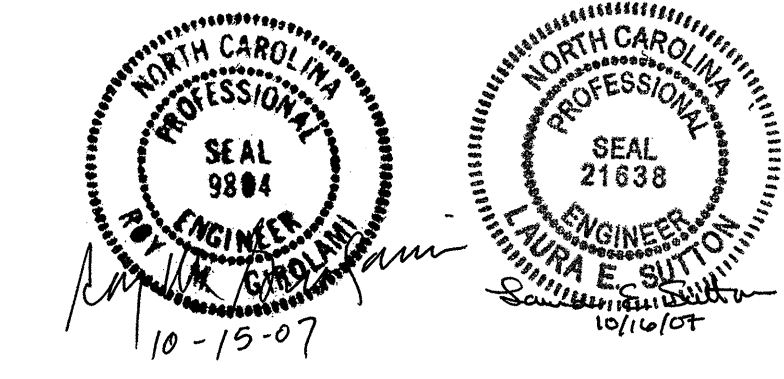
PROJECT NO. 37449
 LINCOLN COUNTY
 STATION: 22+94.00 -L-

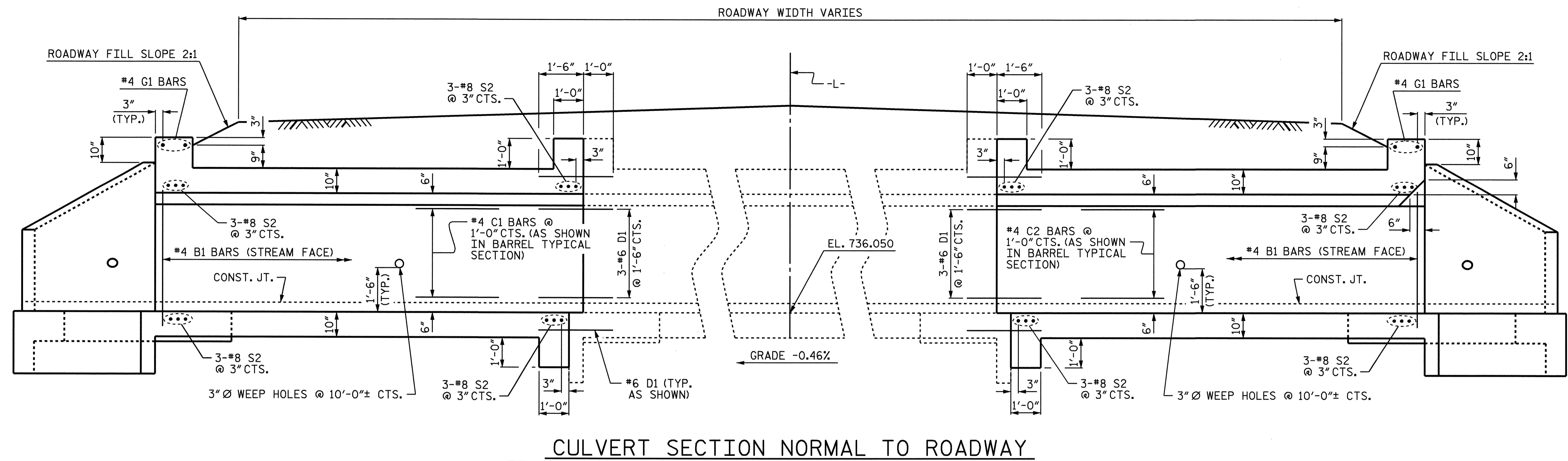
SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

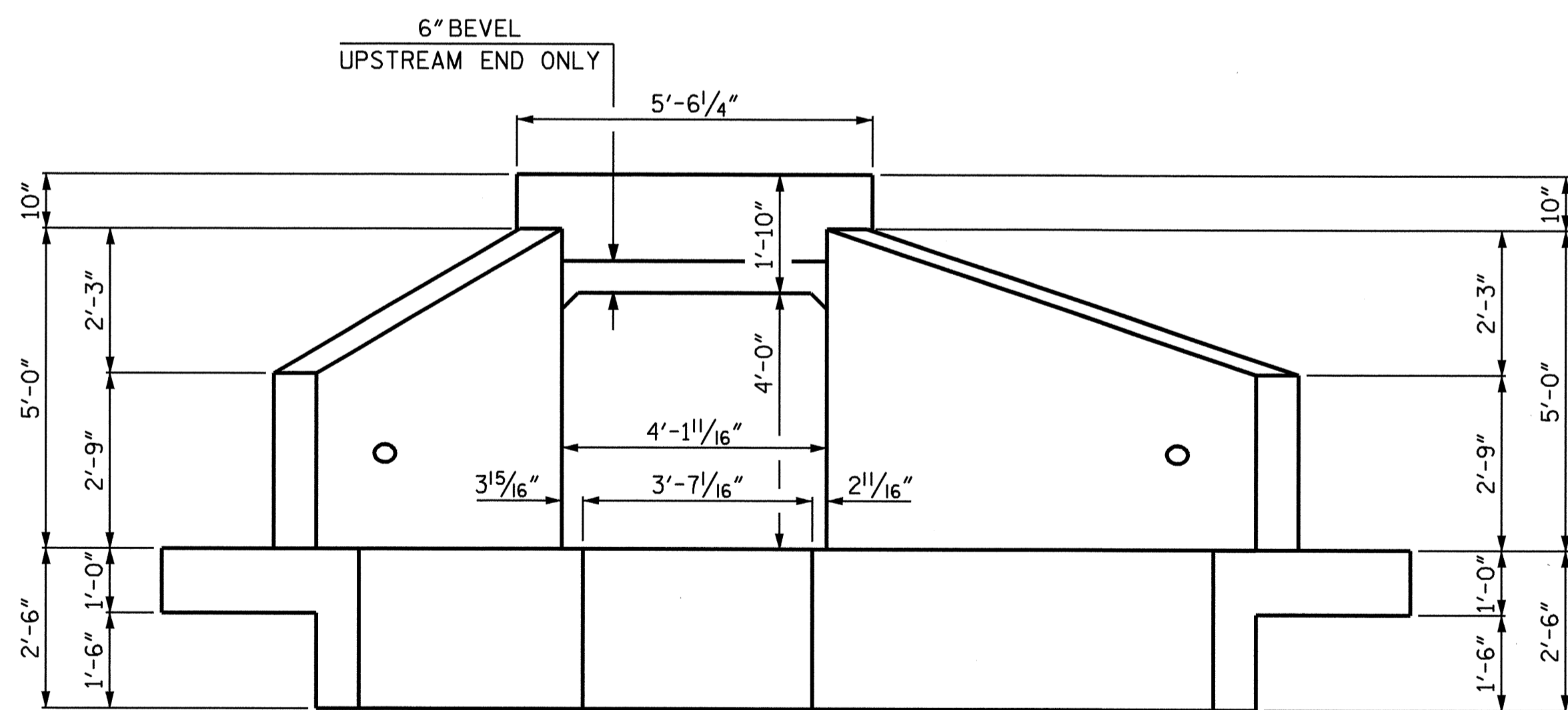
SINGLE 4 FT. X 4 FT.
 CONCRETE BOX CULVERT
 70°-05'-50" SKEW

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

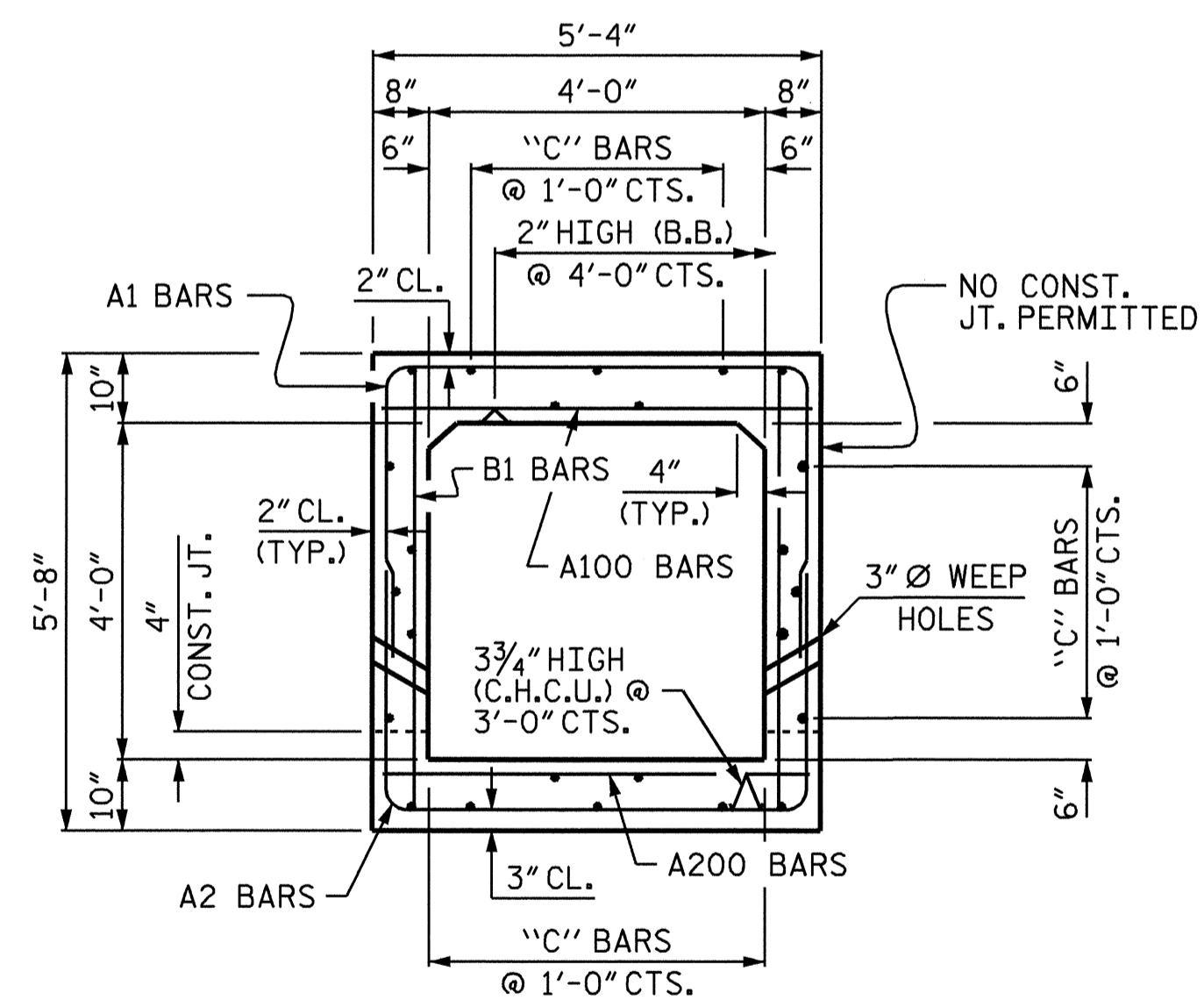




CULVERT SECTION NORMAL TO ROADWAY



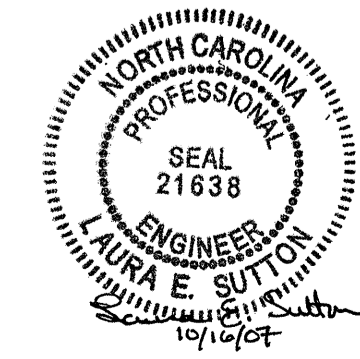
END ELEVATION NORMAL TO SKEW



RIGHT ANGLE SECTION OF BARREL
THERE ARE 24 "C" BARS IN SECTION OF BARREL

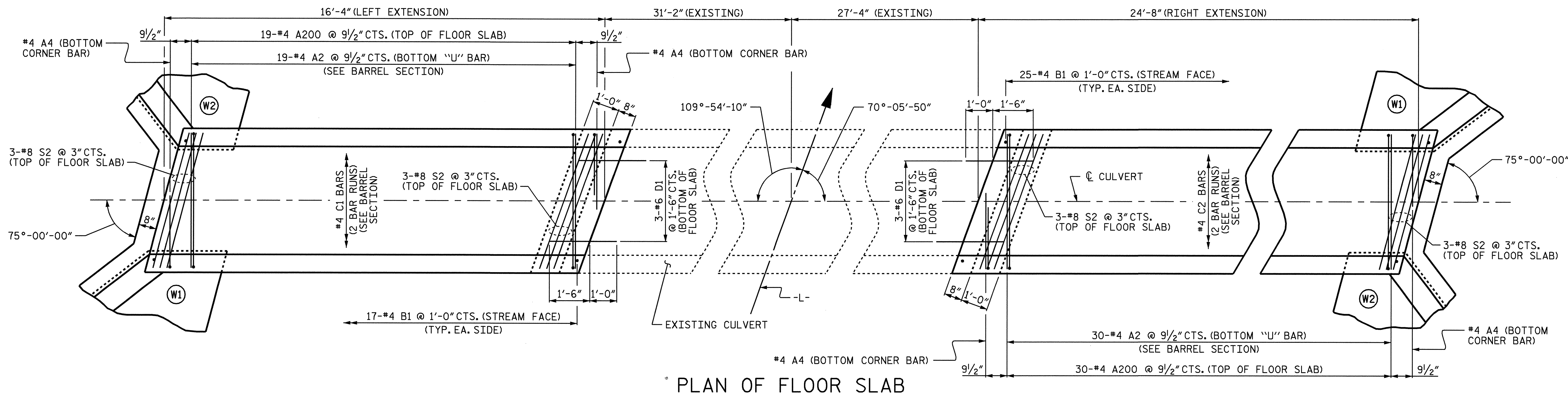
PROJECT NO. 37449
 LINCOLN COUNTY
 STATION: 22+94.00 -L-

SHEET 2 OF 4
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 4 FT. X 4 FT.
 CONCRETE BOX CULVERT
 70°-05'-50" SKEW

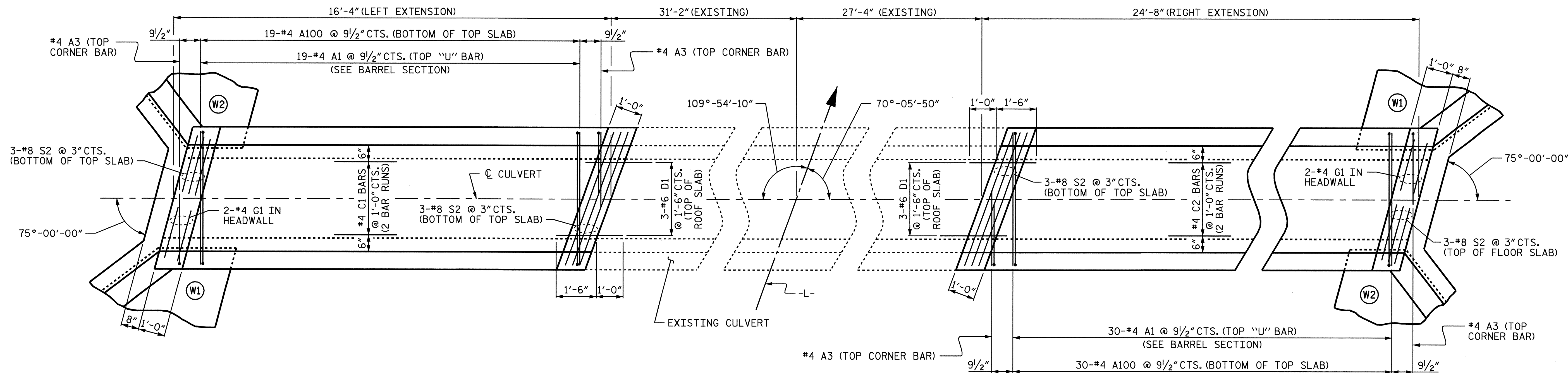


DRAWN BY: P.C. BREWER DATE: 10/4/07
 CHECKED BY: L.E. SUTTON DATE: 10/8/07

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



PLAN OF FLOOR SLAB

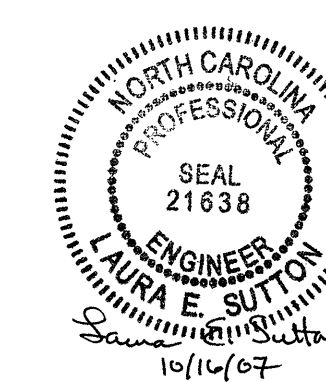


PLAN OF ROOF SLAB

PROJECT NO. 37449
LINCOLN COUNTY
 STATION: 22+94.00 -L-

SHEET 3 OF 4

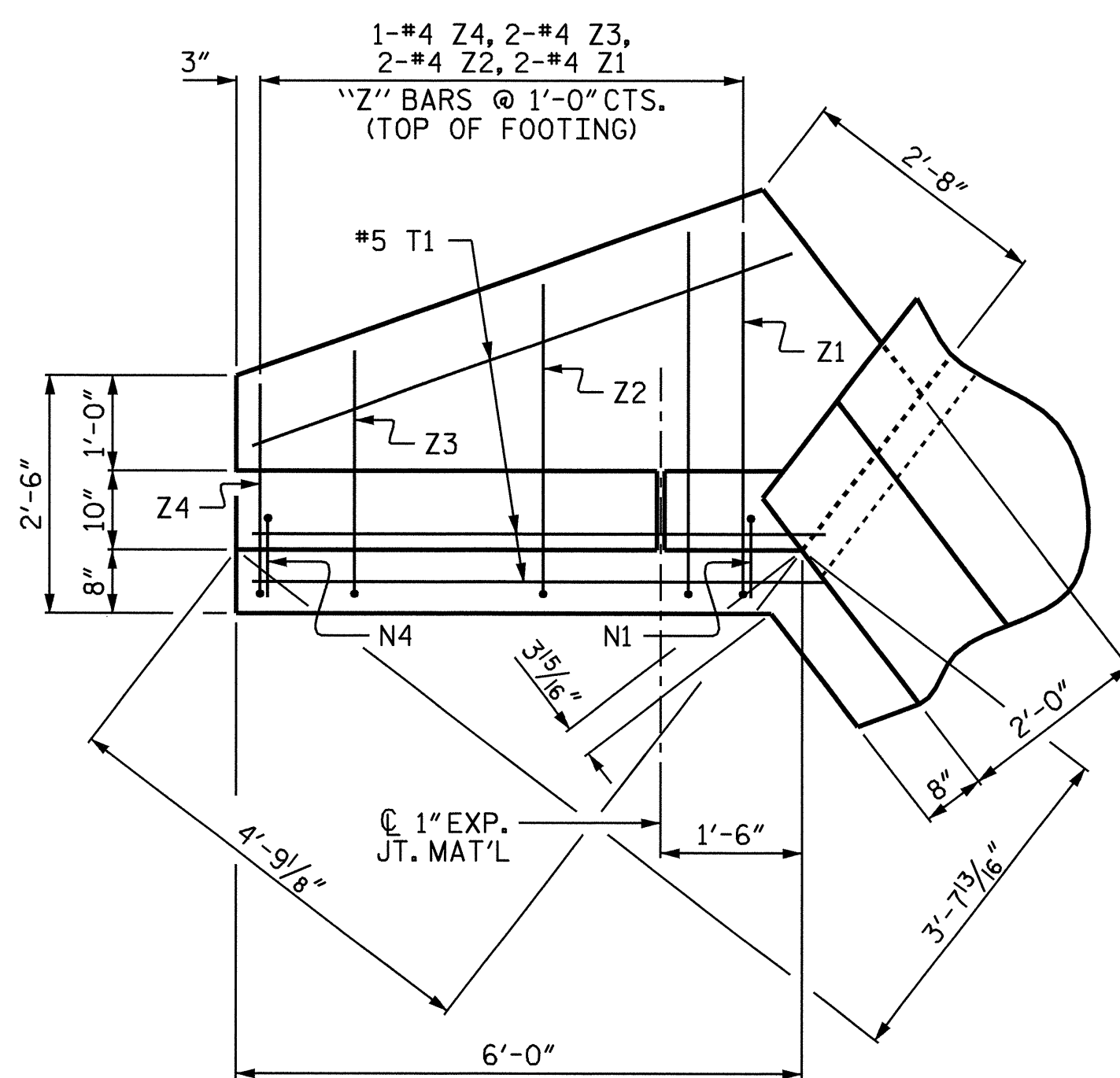
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 4 FT. X 4 FT.
 CONCRETE BOX CULVERT
 70°-05'-50" SKEW



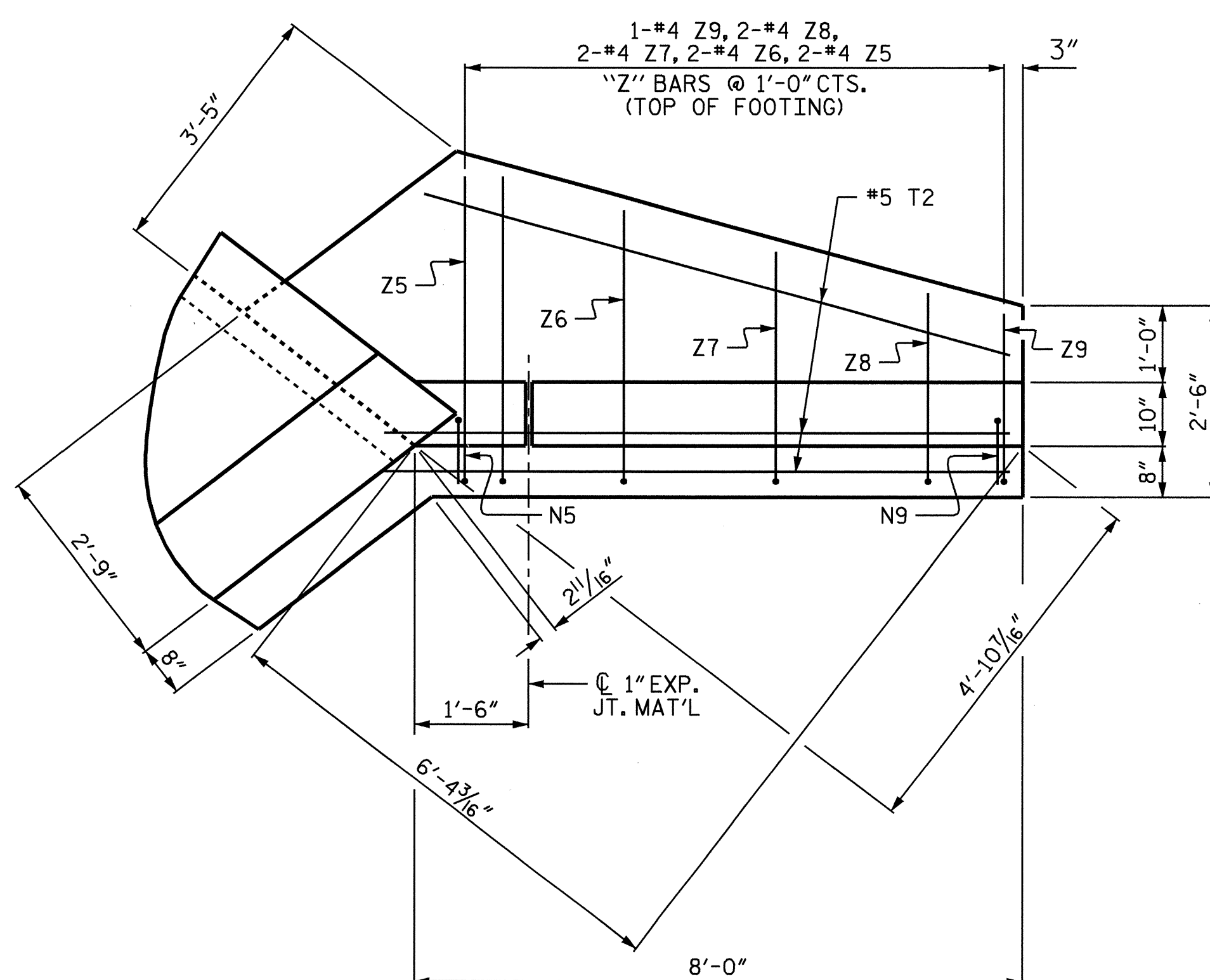
DRAWN BY : P.C. BREWER DATE : 10/4/07
 CHECKED BY : L.E. SUTTON DATE : 10/8/07

16-OCT-2007 09:23
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 LSUTTON

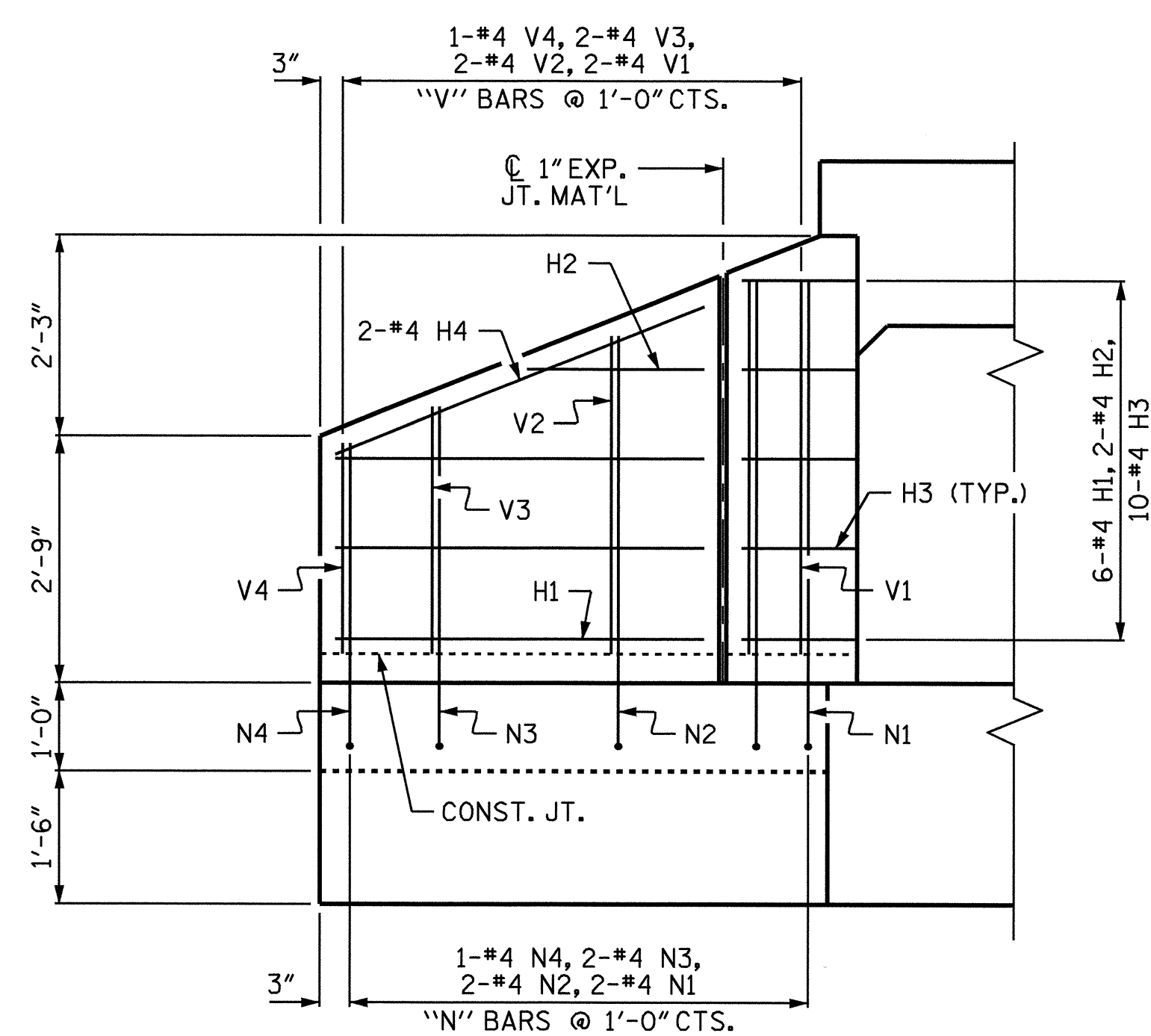
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			4



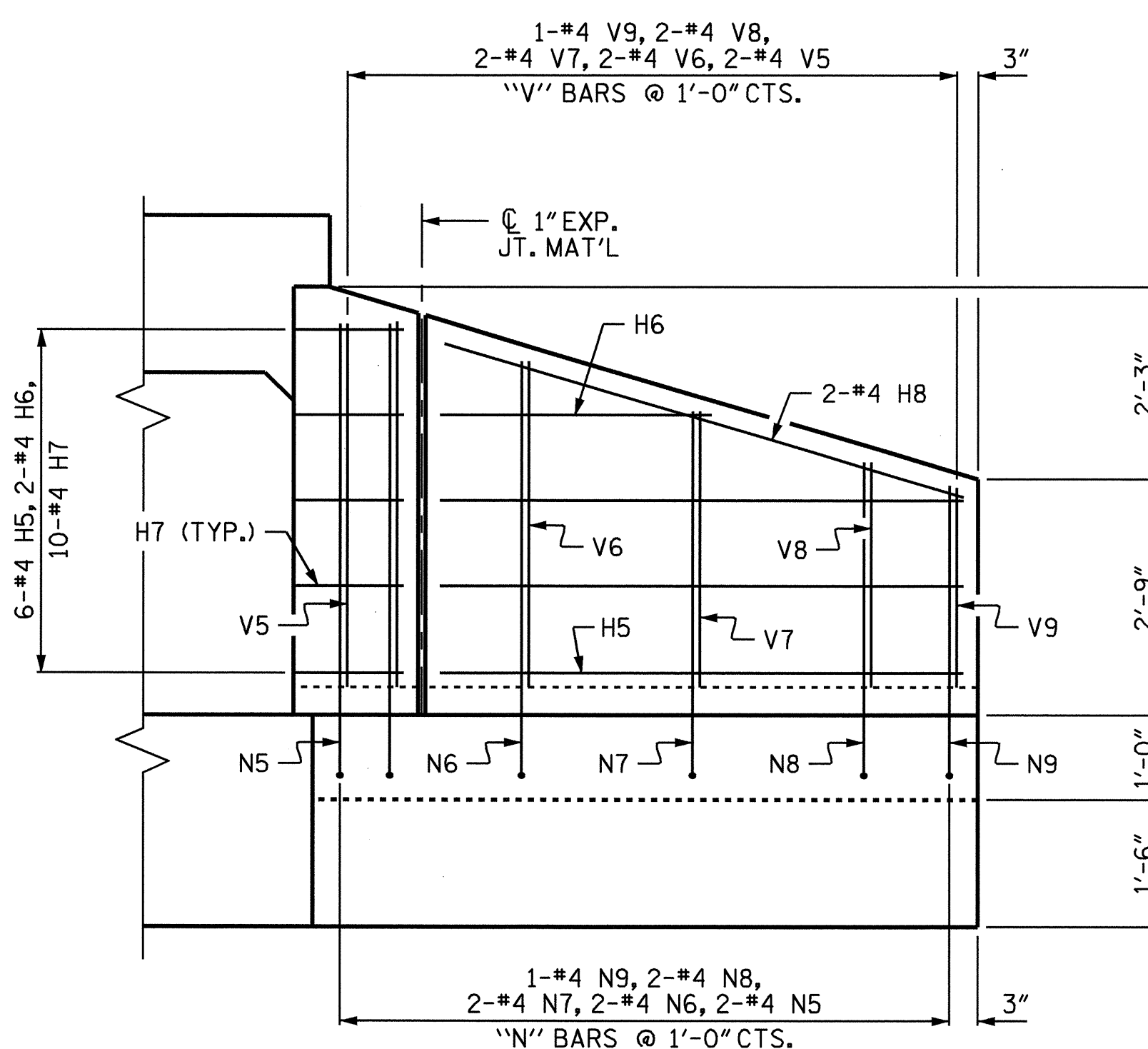
PLAN W2



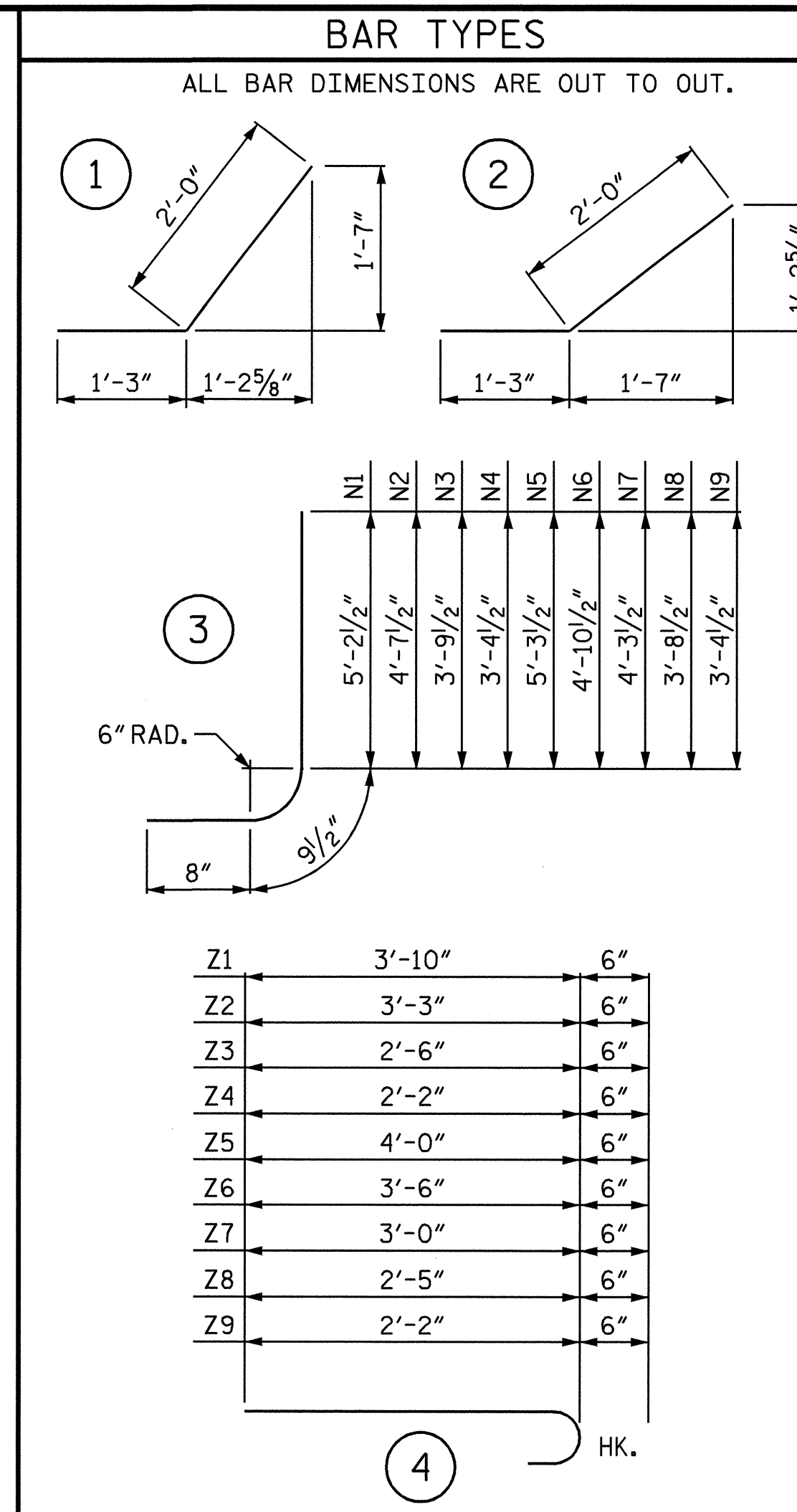
PLAN W1



ELEVATION W2

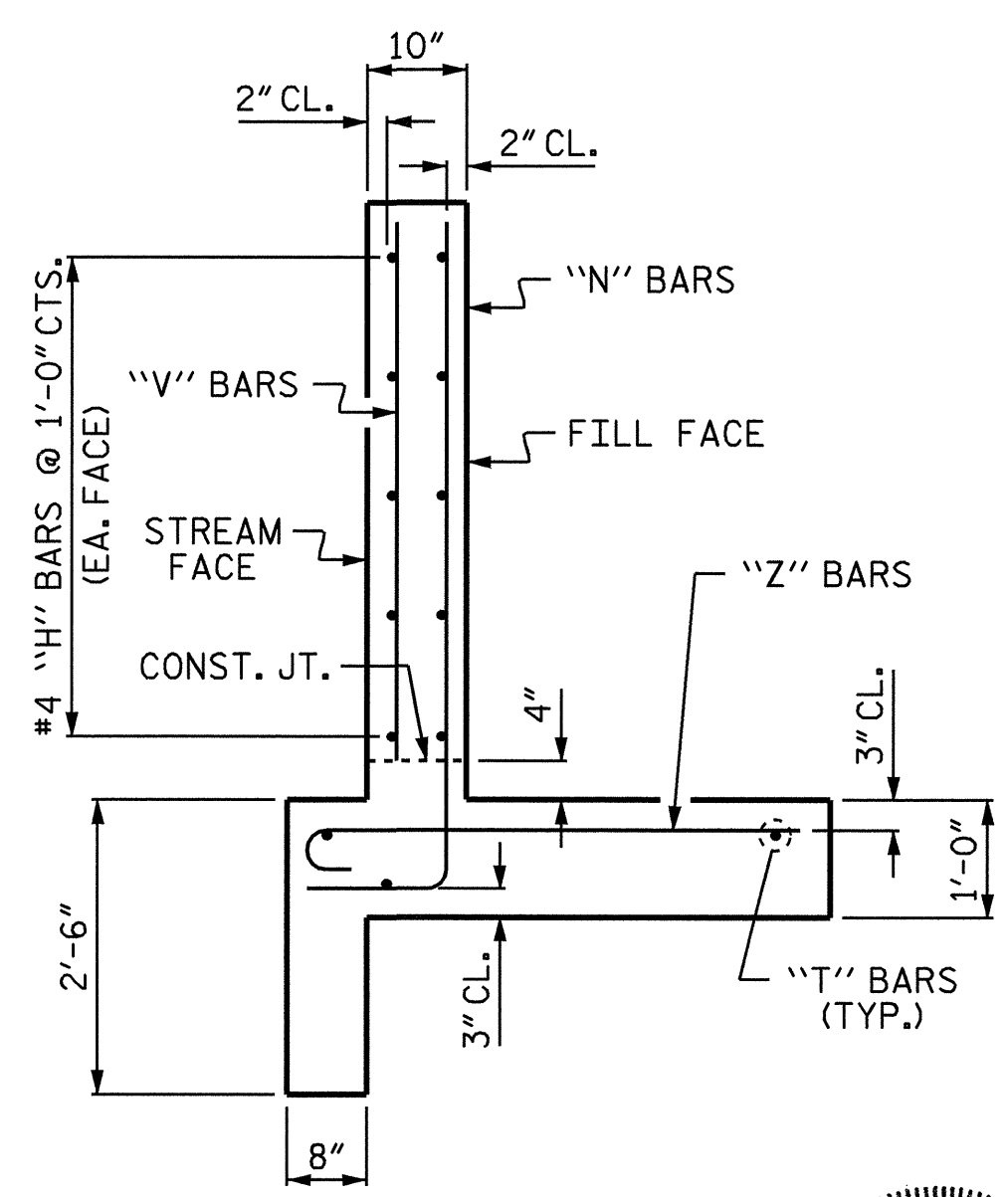


ELEVATION W1



BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	4'-1"	33
H2	4	#4	STR	1'-11"	5
H3	20	#4	1	3'-3"	43
H4	4	#4	STR	4'-5"	12
H5	12	#4	STR	6'-1"	49
H6	4	#4	STR	3'-2"	8
H7	20	#4	2	3'-3"	43
H8	4	#4	STR	6'-4"	17
N1	4	#4	3	6'-8"	18
N2	4	#4	3	6'-1"	16
N3	4	#4	3	5'-3"	14
N4	2	#4	3	4'-10"	6
N5	4	#4	3	6'-9"	18
N6	4	#4	3	6'-4"	17
N7	4	#4	3	5'-9"	15
N8	4	#4	3	5'-2"	14
N9	2	#4	3	4'-10"	6
T1	6	#5	STR	6'-0"	38
T2	6	#5	STR	8'-0"	50
V1	4	#4	STR	4'-2"	11
V2	4	#4	STR	3'-6"	9
V3	4	#4	STR	2'-8"	7
V4	2	#4	STR	2'-4"	3
V5	4	#4	STR	4'-2"	11
V6	4	#4	STR	3'-9"	10
V7	4	#4	STR	3'-2"	8
V8	4	#4	STR	2'-7"	7
V9	2	#4	STR	2'-3"	3
Z1	4	#4	4	4'-4"	12
Z2	4	#4	4	3'-9"	10
Z3	4	#4	4	3'-0"	8
Z4	2	#4	4	2'-8"	4
Z5	4	#4	4	4'-6"	12
Z6	4	#4	4	4'-0"	11
Z7	4	#4	4	3'-6"	9
Z8	4	#4	4	2'-11"	8
Z9	2	#4	4	2'-8"	4

REINFORCING STEEL FOR 4 WINGS	569 LBS.
CLASS A CONCRETE	
4 WINGS	8.6 CY
2 HEADWALLS	0.5 CY
2 END CURTAIN WALLS	0.7 CY
4 EDGE BEAMS	0.8 CY
TOTAL	10.6 CY



PROJECT NO. 37449
 LINCOLN COUNTY
 STATION: 22+94.00 -L-
 SHEET 4 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
WINGS FOR CONCRETE BOX CULVERT					
H = 4'-0"			SLOPE = 2:1 75° SKEW		
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					C-4
					TOTAL SHEETS 4

DRAWN BY: P.C. BREWER DATE: 10/4/07
 CHECKED BY: L.E. SUTTON DATE: 10/8/07