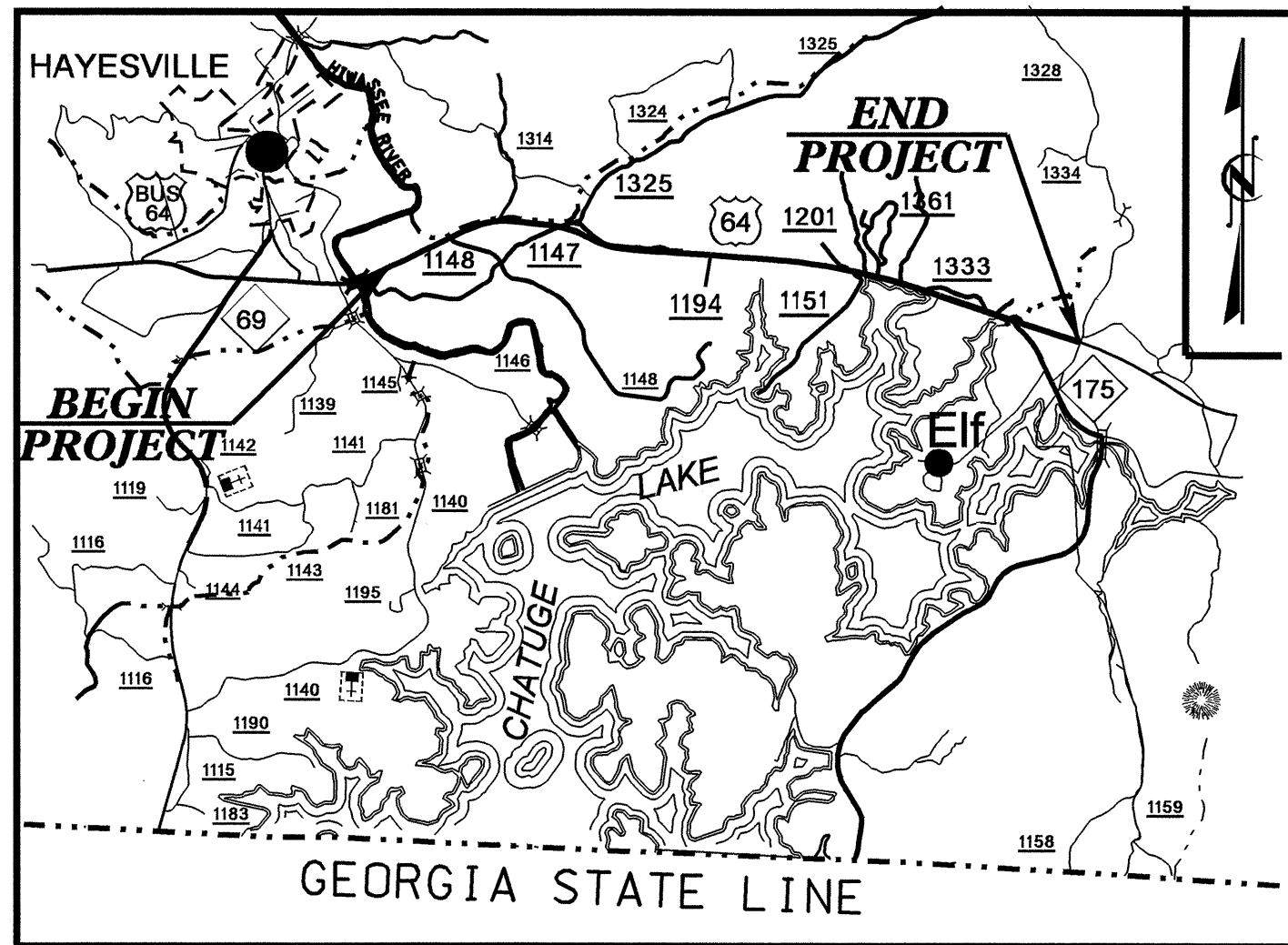


CONTRACT: C201963 TIP NO: A-0011BB



VICINITY MAP

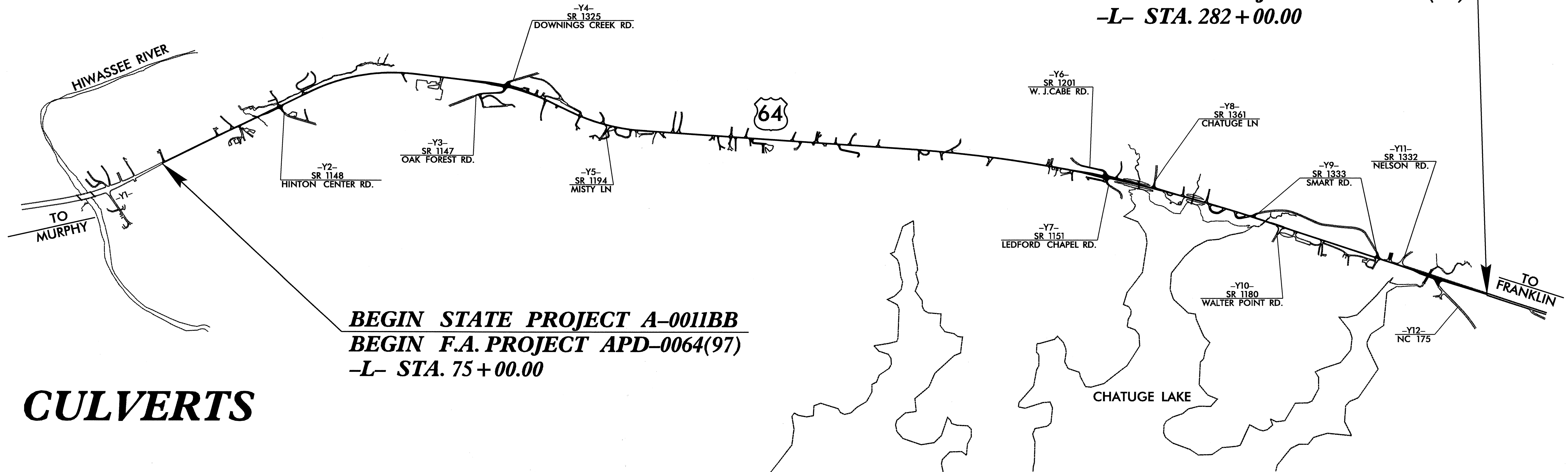
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
CLAY COUNTY

**LOCATION: US 64 FROM EAST OF THE HIWASSEE RIVER
 TO EAST OF NC 175.**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE,
 GUARDRAIL, AND CULVERTS.**

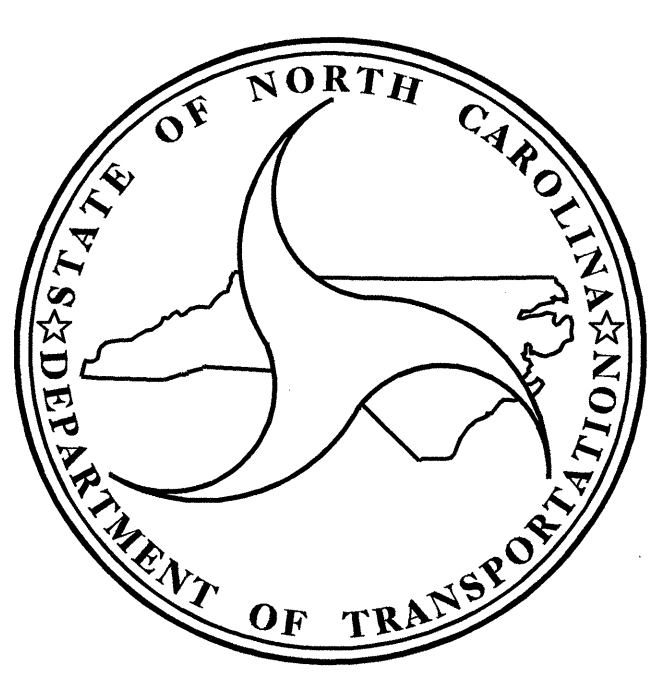
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0011BB		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32574.1.4	APD-16-1(20)	P. E.	
32574.2.3	APD-16-1(22)	RW & UTILITIES	
32574.3.7	APD-0064(97)	CONST.	

**END STATE PROJECT A-0011BB
 END F.A. PROJECT APD-0064(97)
 -L- STA. 282 + 00.00**



**BEGIN STATE PROJECT A-0011BB
 BEGIN F.A. PROJECT APD-0064(97)
 -L- STA. 75 + 00.00**

CULVERTS



DESIGN DATA

ADT 2006 = 6,100 - 8,200
 ADT 2030 = 6,800 - 18,400
 DHV = 12%
 D = 60%
 T = 8% *
 V = 60 MPH

* TTST = 2%
 DUAL = 6%

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT APD-0064(97)
 = 3.920 MILES

TOTAL LENGTH STATE PROJECT 32574.3.7
 = 3.920 MILES

Prepared In the Office of:

DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

LETTING DATE :
 OCTOBER 21, 2008

N.N. BULLOCK, PE
 PROJECT ENGINEER

A.K. PASCHAL, PE
 PROJECT DESIGN ENGINEER

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

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

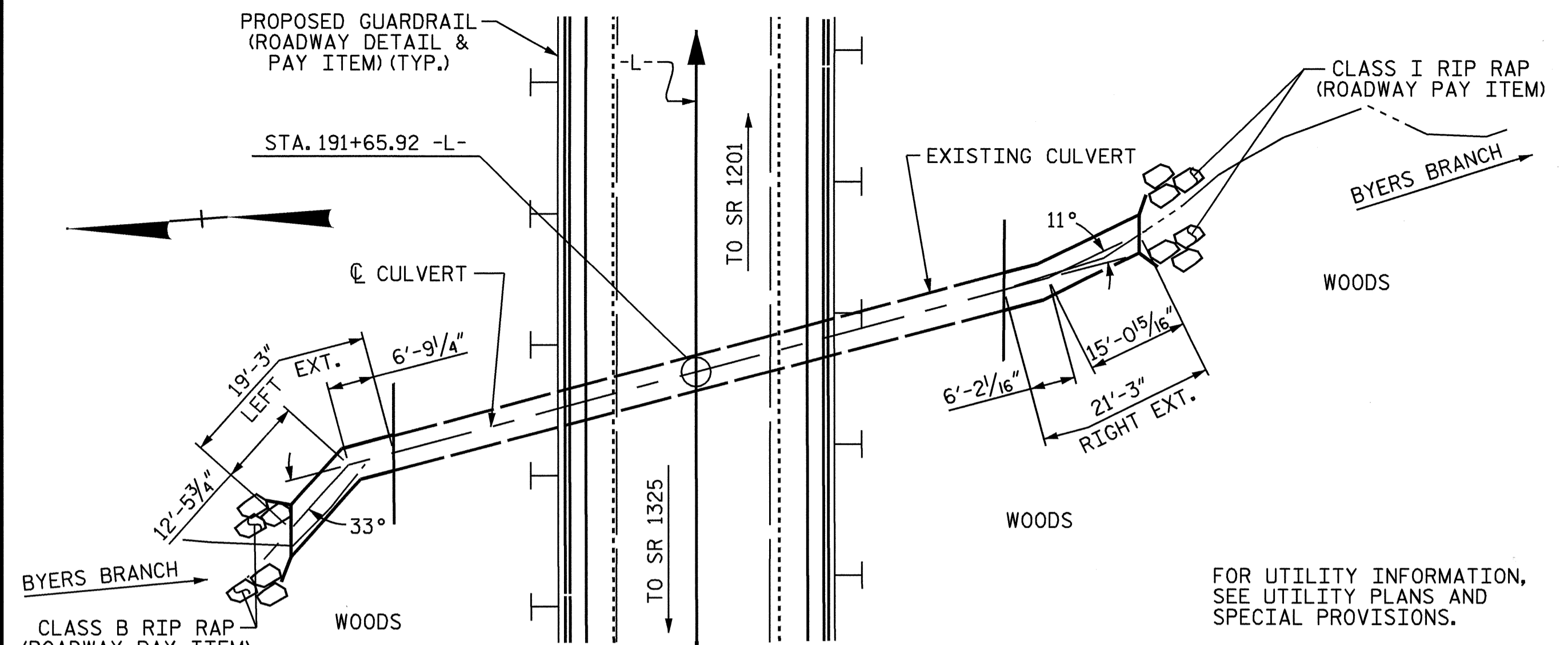
P.E.

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED
 DIVISION ADMINISTRATOR

DATE



GRADE DATA

GRADE POINT ELEV. @ STA. 191+65.92 -L-	= 1960.64
BED ELEV. @ STA. 191+65.92 -L-	= 1937.7
ROADWAY SLOPES	= 2:1

HYDRAULIC DATA

DESIGN DISCHARGE	= 110 c.f.s.
FREQUENCY OF DESIGN FLOOD	= 50 yrs.
DESIGN HIGH WATER ELEVATION	= 1942.7
DRAINAGE AREA	= 67 acres
BASIC DISCHARGE (Q100)	= 130 c.f.s.
BASIC HIGH WATER ELEVATION	= 1943.4

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 190 c.f.s.
FREQUENCY OF OVERTOPPING FLOOD	= 500 + yrs.
OVERTOPPING FLOOD ELEVATION	= 1959.9

LOCATION SKETCH

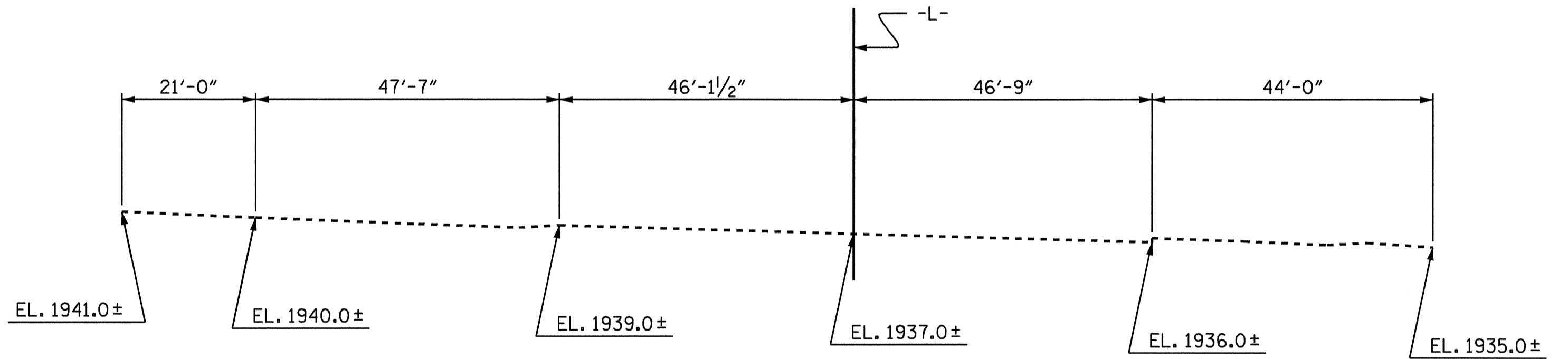
NOTES

ASSUMED LIVE LOAD -----HS20-44 OR ALTERNATE LOADING.
 DESIGN FILL----- 18.38' LEFT EXTENSION AND 21.40' RIGHT EXTENSION
 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, WINGS FULL HEIGHT, 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.

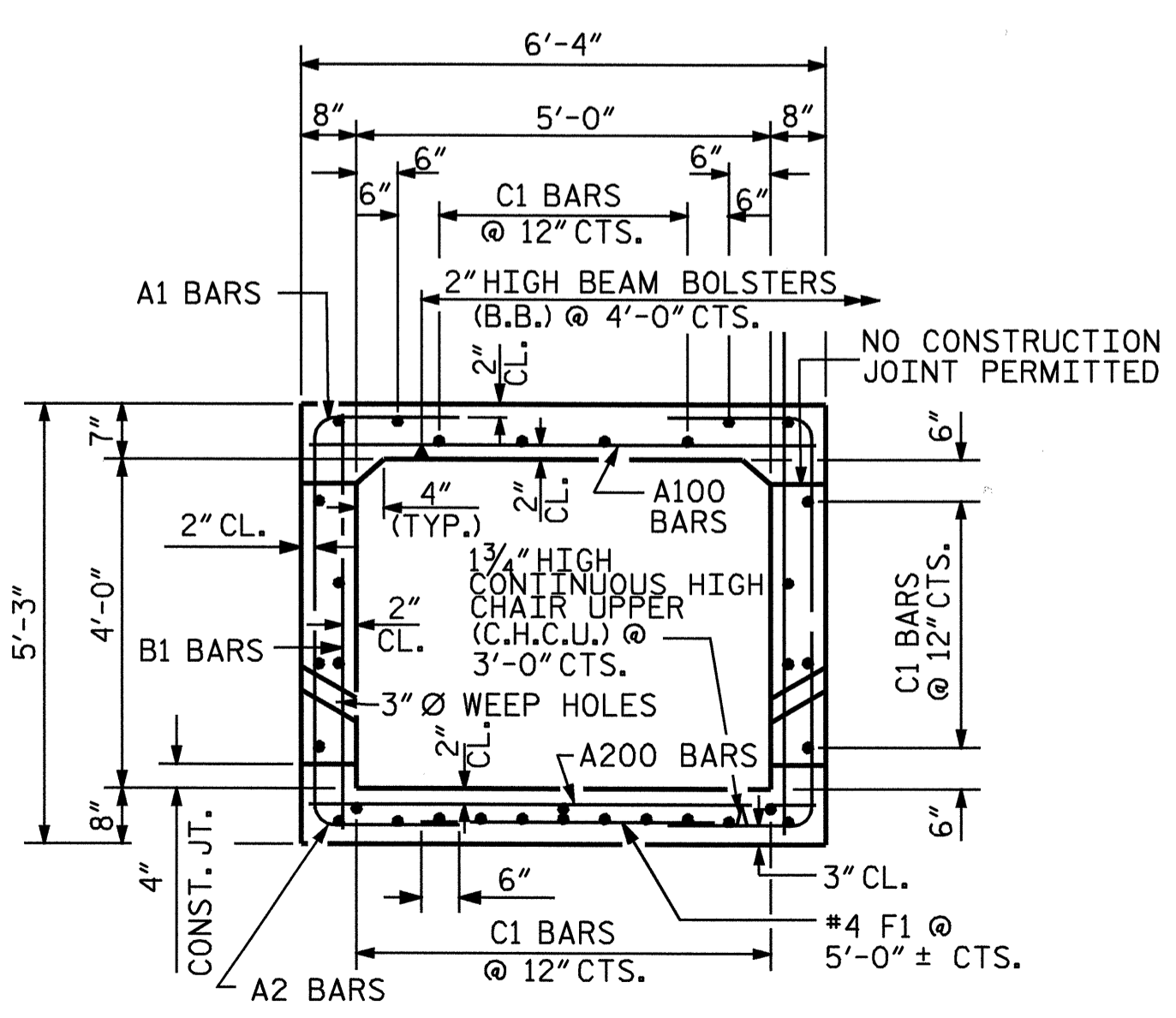
IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSIONS. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE 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. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.
 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.
 NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
 FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
 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.

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
LEFT EXTENSION	17.7 C.Y.
RIGHT EXTENSION	16.2 C.Y.
TOTAL	33.9 C.Y.
REINFORCING STEEL	
LEFT EXTENSION	1969 LBS.
RIGHT EXTENSION	1988 LBS.
TOTAL	3957 LBS.
FOUNDATION COND. MAT'L	19 TONS
CULVERT EXCAVATION	LUMP SUM

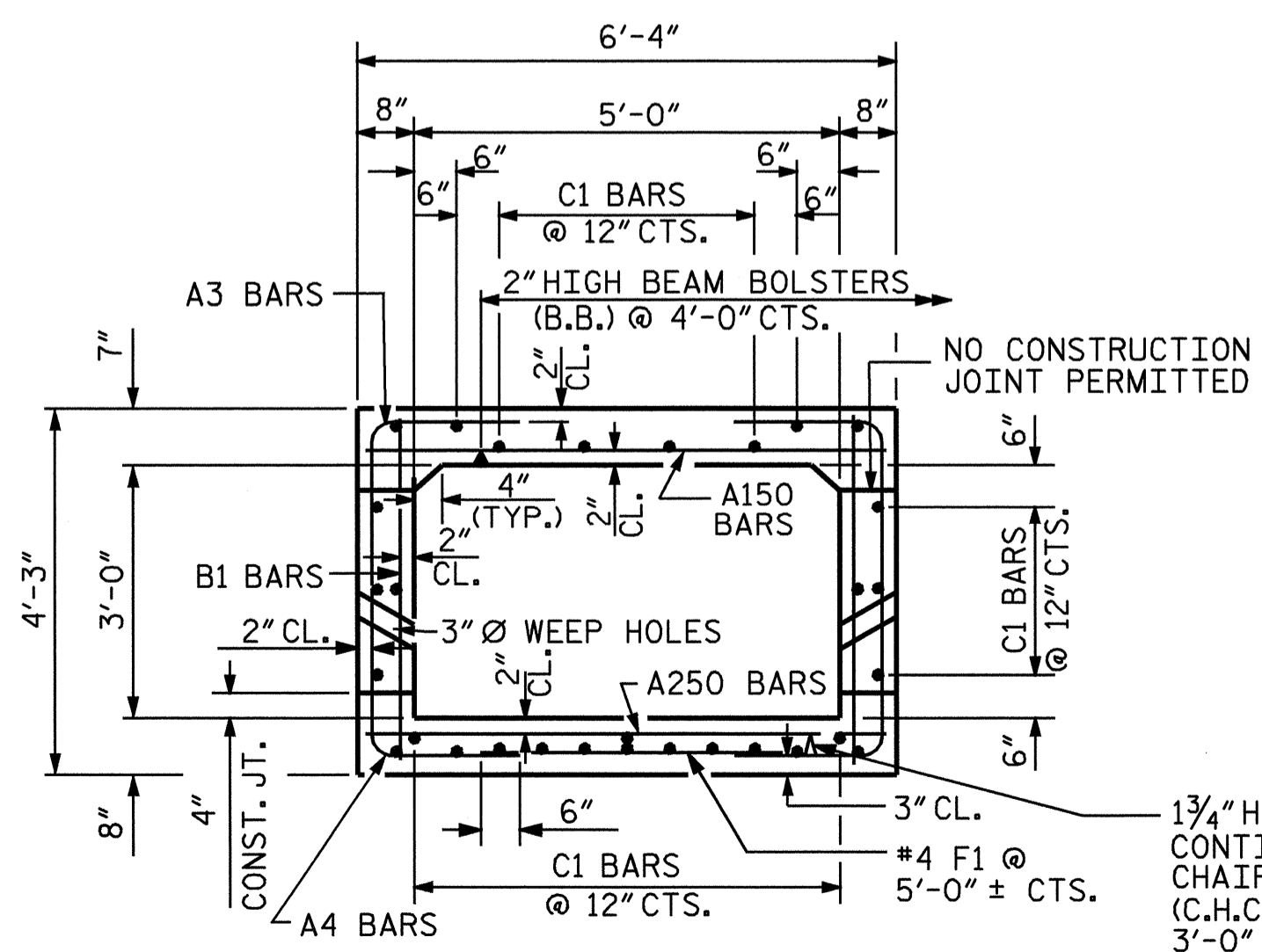


PROFILE ALONG C CULVERT



RIGHT ANGLE SECTION OF BARREL - LEFT EXTENSION

THERE ARE 32 "C" BARS IN SECTION OF BARREL



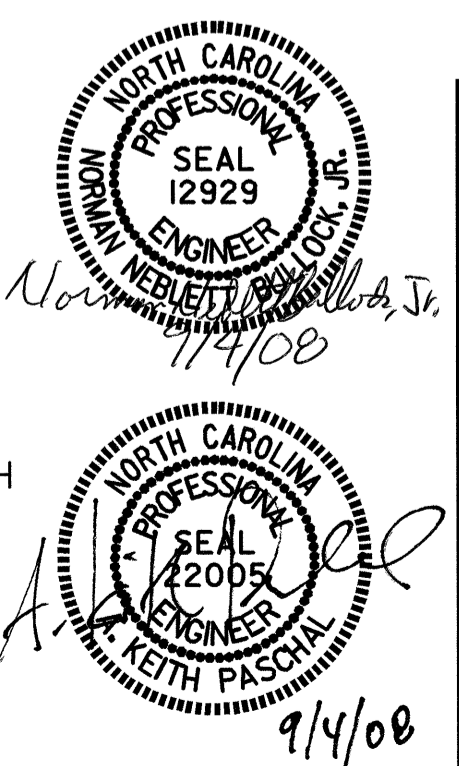
RIGHT ANGLE SECTION OF BARREL - RIGHT EXTENSION

THERE ARE 30 "C" BARS IN SECTION OF BARREL

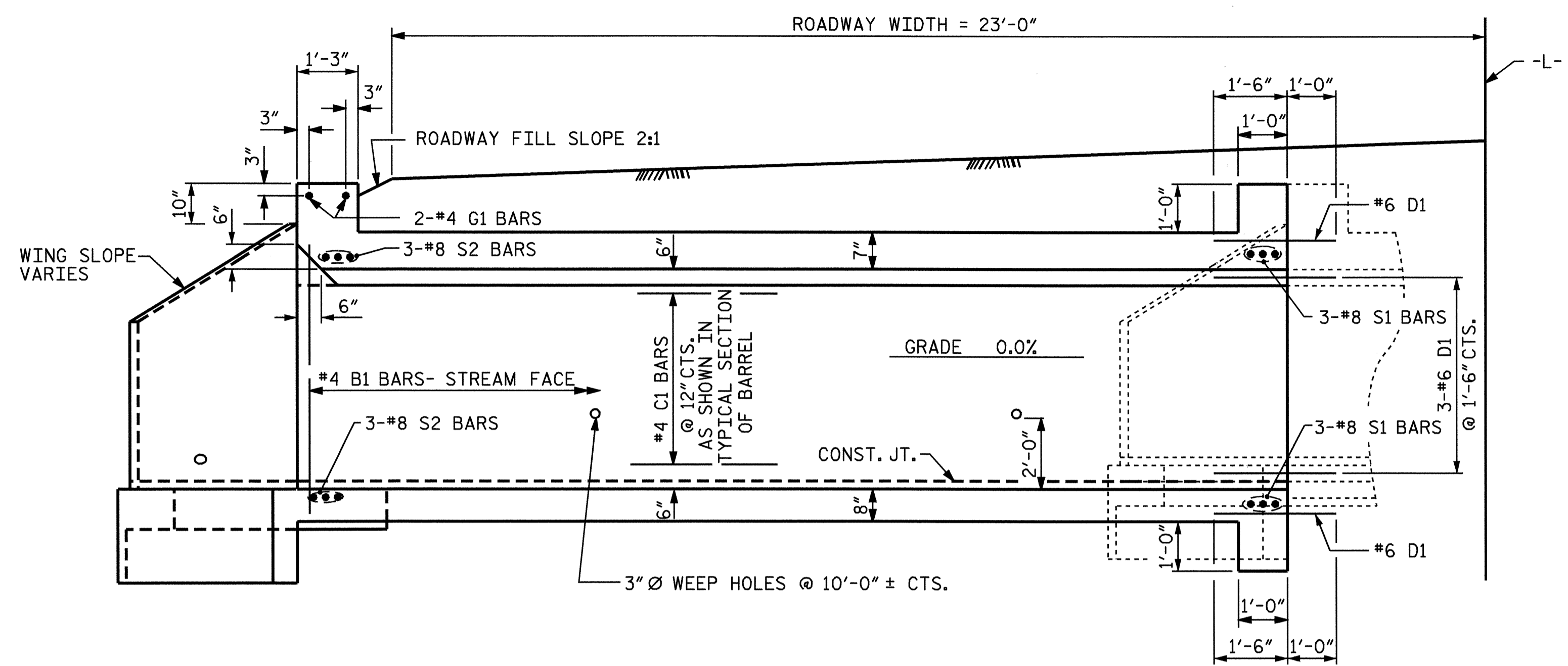
PROJECT NO. A-0011BB
 CLAY COUNTY
 STATION: 191+65.92 -L-

SHEET 1 OF 7

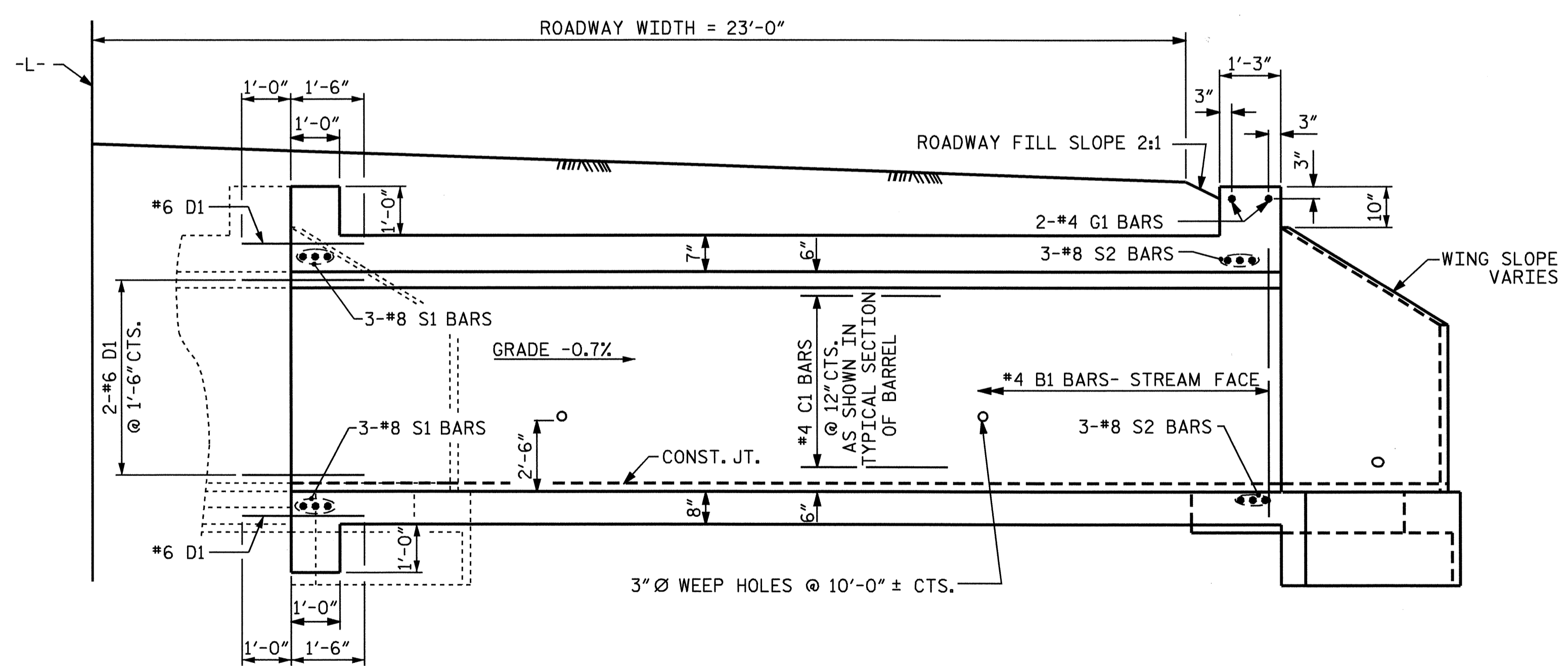
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SINGLE BARREL CONCRETE BOX CULVERT LEFT AND RIGHT EXTENSIONS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. C-1
					TOTAL SHEETS 14



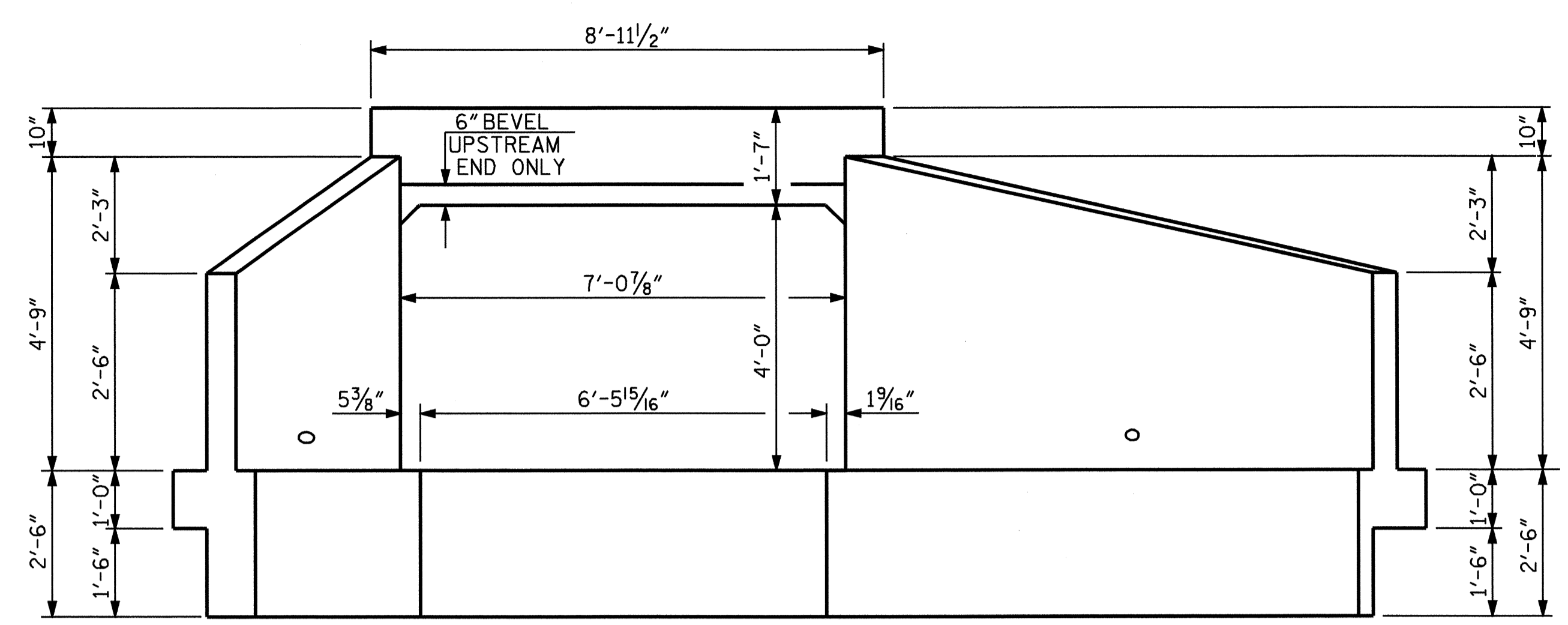
DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08



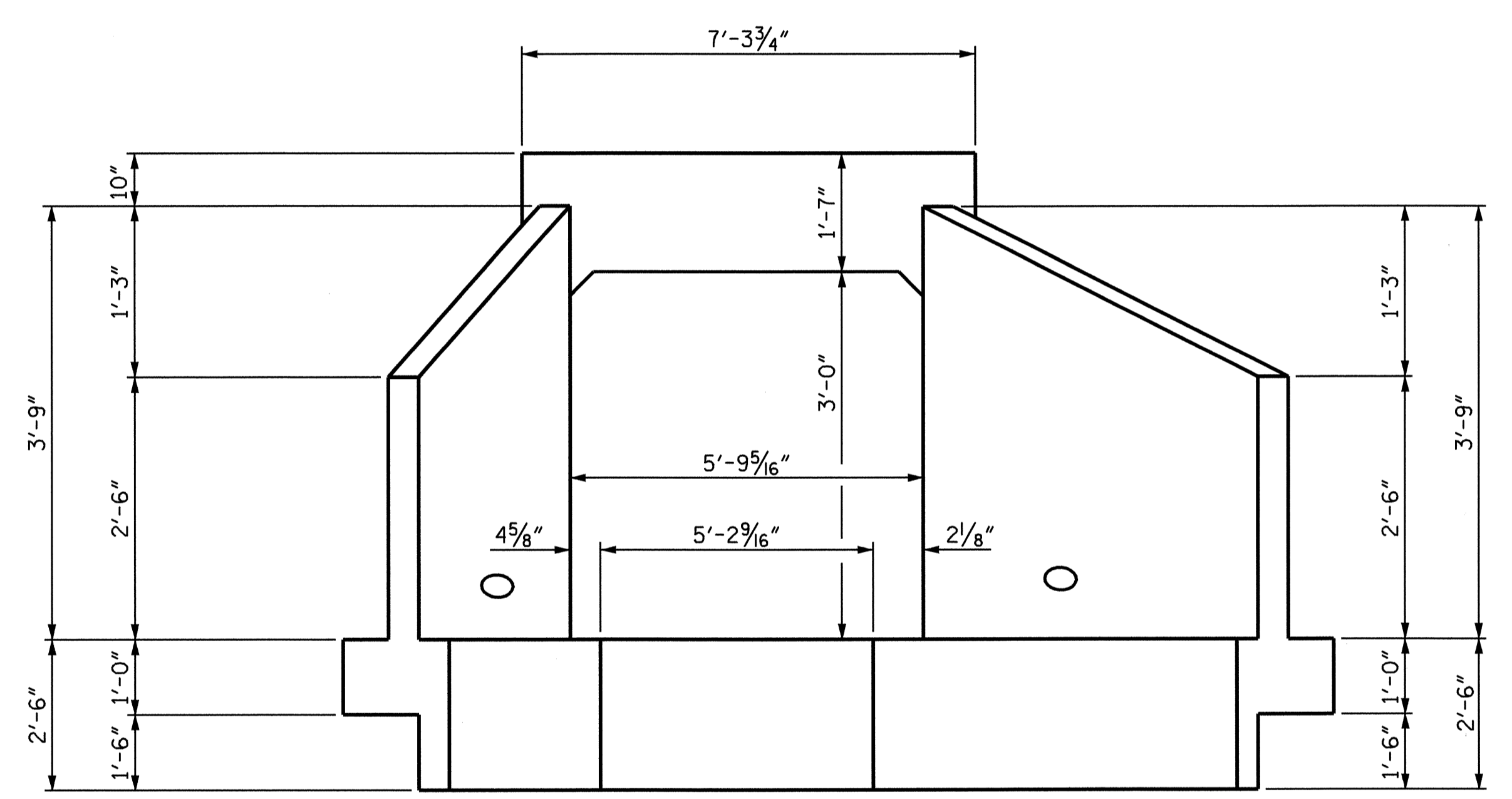
CULVERT SECTION NORMAL TO ROADWAY - LEFT EXTENSION



CULVERT SECTION NORMAL TO ROADWAY - RIGHT EXTENSION



END ELEVATION NORMAL TO SKEW - LEFT EXTENSION

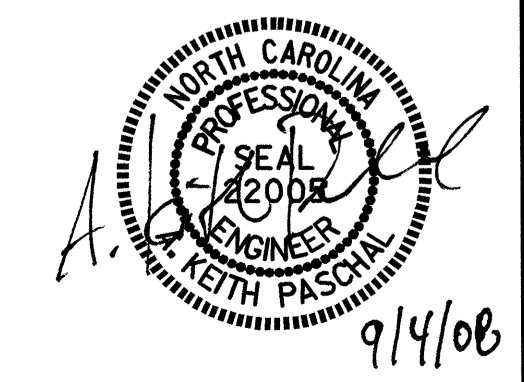


END ELEVATION NORMAL TO SKEW - RIGHT EXTENSION

PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 191+65.92 -L-

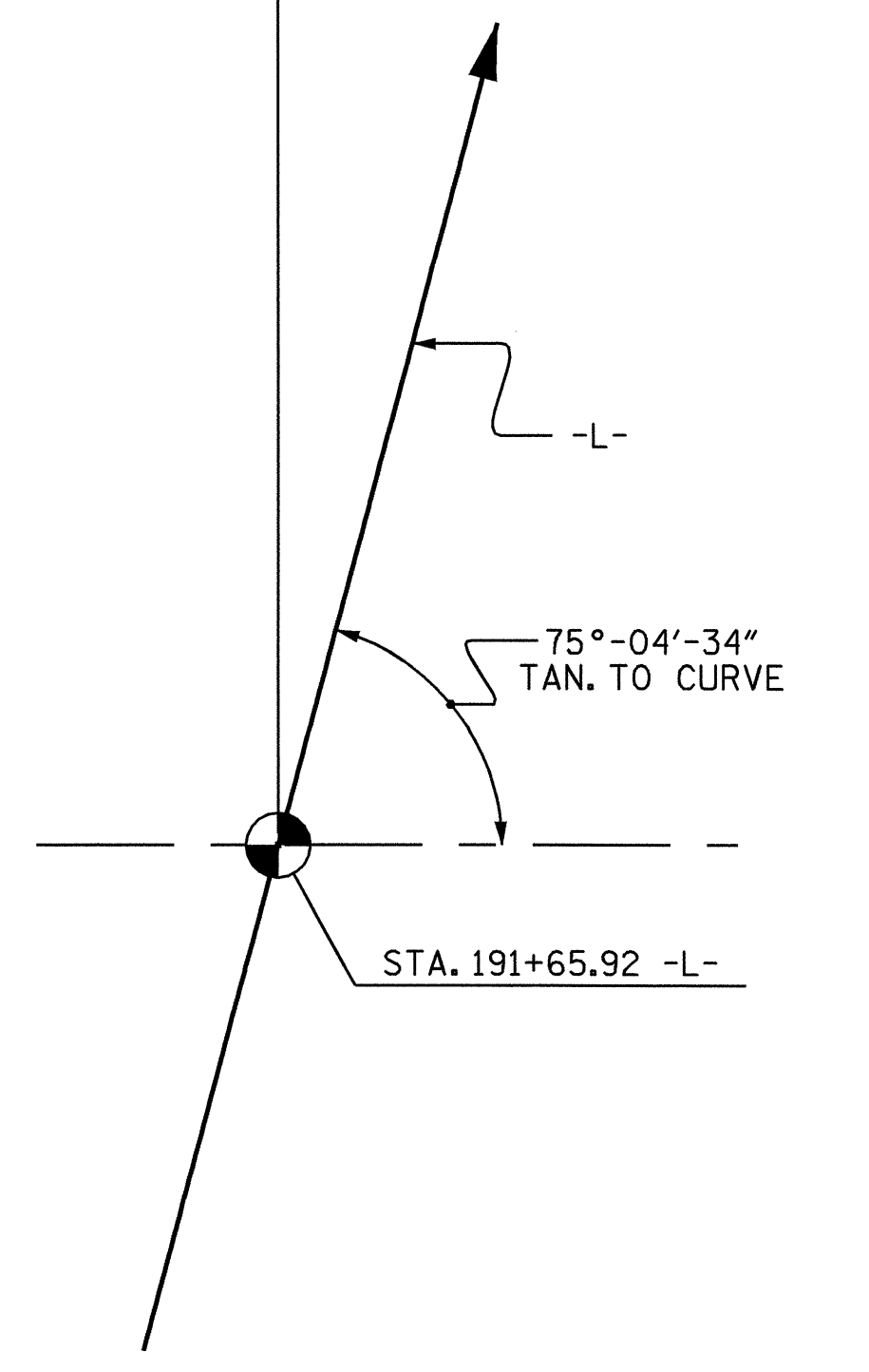
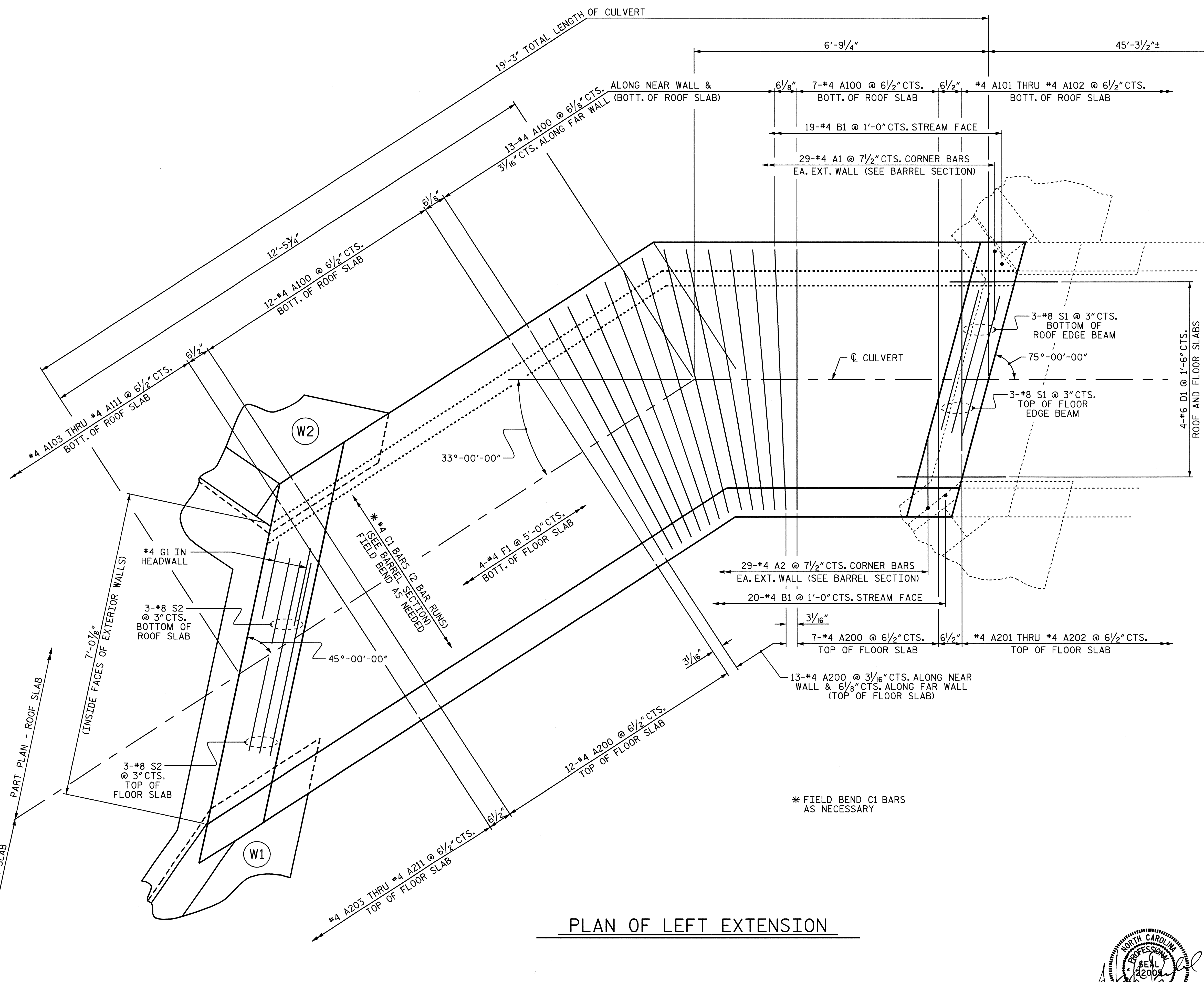
SHEET 2 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE BARREL
 CONCRETE BOX CULVERT
 LEFT AND RIGHT
 EXTENSIONS



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			14

DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08



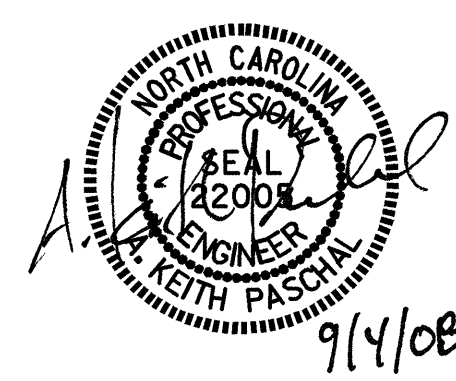
PLAN OF LEFT EXTENSION

PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 191+65.92 -L-

SHEET 3 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

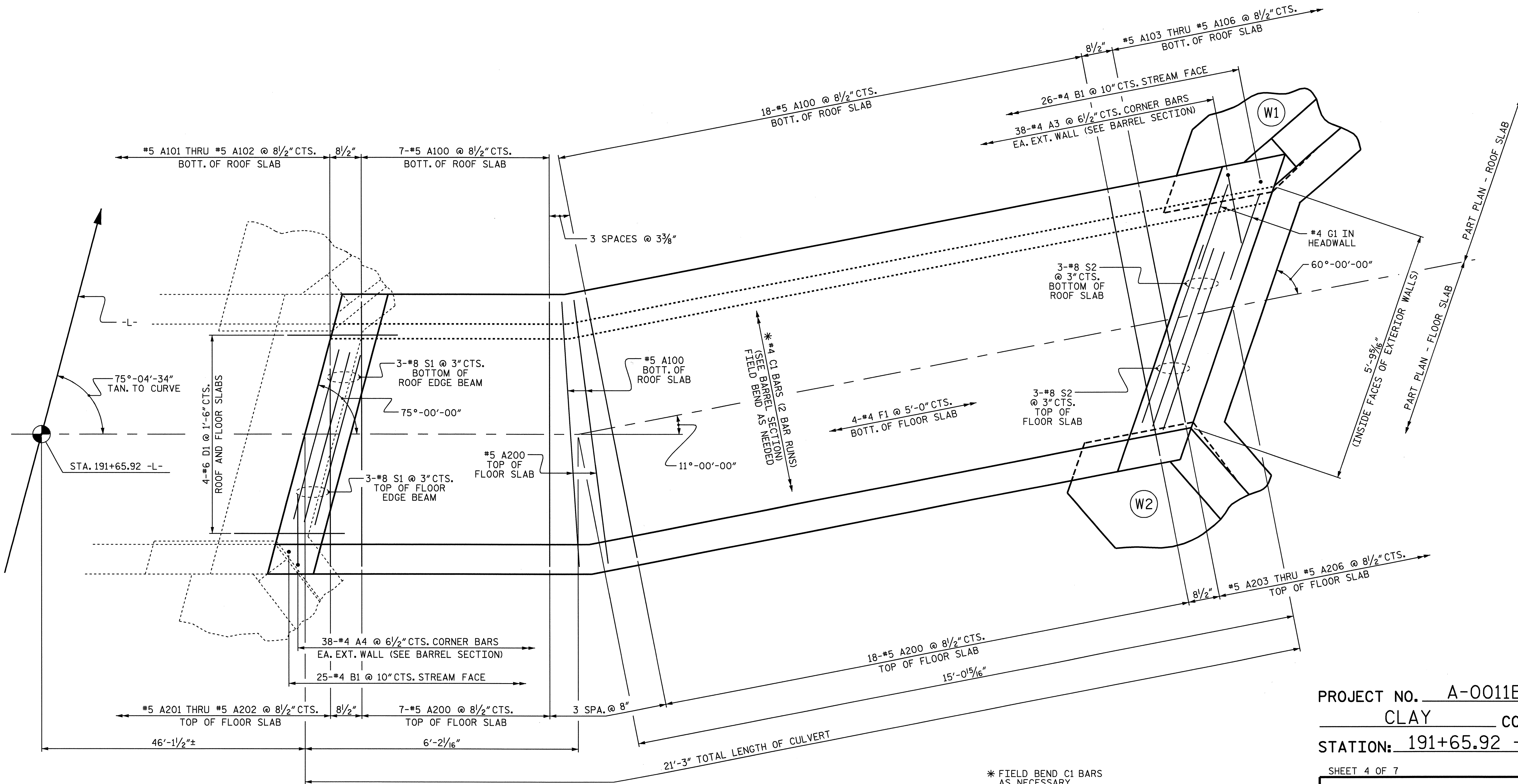
**LEFT EXTENSION
 SINGLE 5 FT. X 4 FT.
 CONCRETE BOX CULVERT**



DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08

26-AUG-2008 12:09
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 kpaschal

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			14



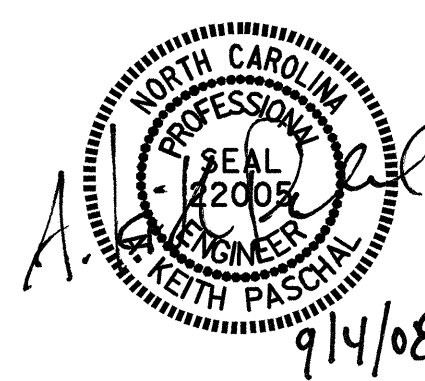
PLAN OF RIGHT EXTENSION

PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 191+65.92 -L-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RIGHT EXTENSION
 SINGLE 5 FT. X 3 FT.
 CONCRETE BOX CULVERT



DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08

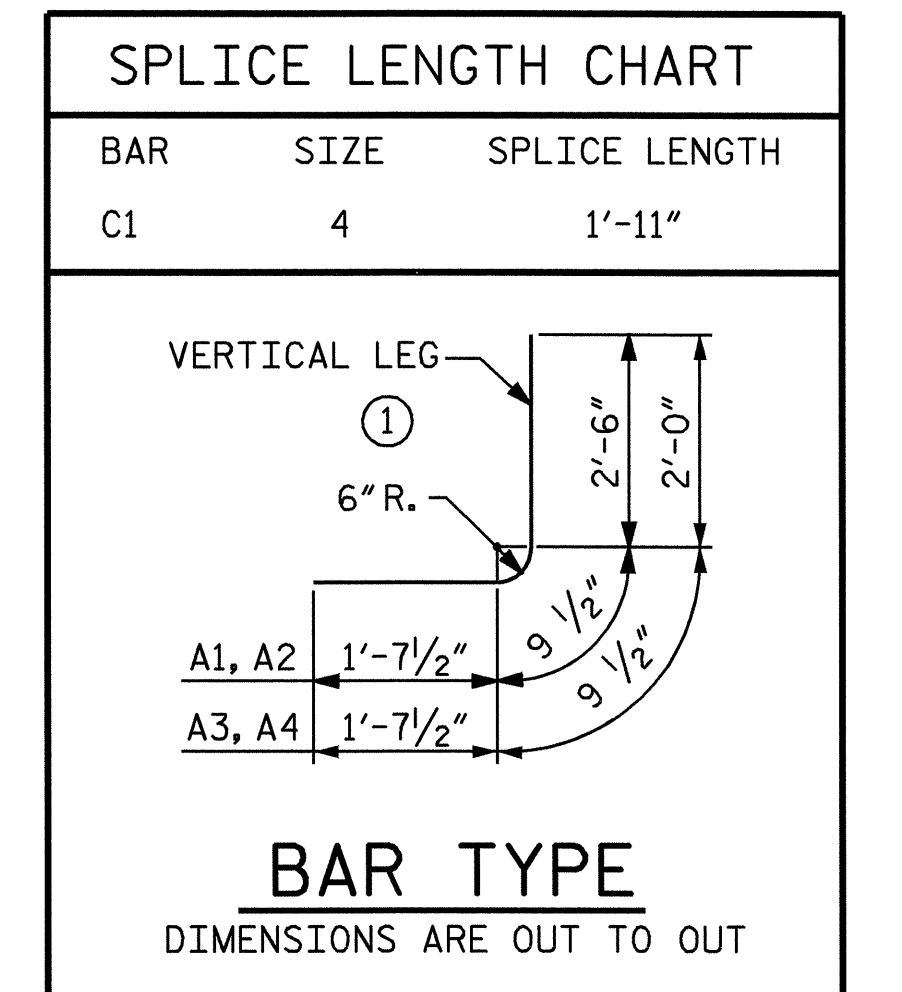
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NO.	BY:	DATE:	NO.	BY:	DATE:	C-4
1			3			TOTAL SHEETS
2			4			14

26-AUG-2008 12:09
 R:\Structures\bngrady\Microstation\A0011BB_sd_cu_01.dgn
 kpaschal

BAR SCHEDULE						
LEFT EXTENSION						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
A1	58	#4	1	4'-11"	190	
A2	58	#4	1	4'-11"	190	
A100	32	#4	STR	6'-0"	128	
A101	1	#4	STR	4'-7"	3	
A102	1	#4	STR	2'-7"	2	
A103	1	#4	STR	5'-8"	4	
A104	1	#4	STR	5'-1"	3	
A105	1	#4	STR	4'-7"	3	
A106	1	#4	STR	4'-0"	3	
A107	1	#4	STR	3'-6"	2	
A108	1	#4	STR	2'-11"	2	
A109	1	#4	STR	2'-5"	2	
A110	1	#4	STR	1'-10"	1	
A111	1	#4	STR	1'-4"	1	
A200	32	#4	STR	6'-0"	128	
A201	1	#4	STR	4'-7"	3	
A202	1	#4	STR	2'-7"	2	
A203	1	#4	STR	5'-8"	4	
A204	1	#4	STR	5'-1"	3	
A205	1	#4	STR	4'-7"	3	
A206	1	#4	STR	4'-0"	3	
A207	1	#4	STR	3'-6"	2	
A208	1	#4	STR	2'-11"	2	
A209	1	#4	STR	2'-5"	2	
A210	1	#4	STR	1'-10"	1	
A211	1	#4	STR	1'-4"	1	
B1	39	#4	STR	4'-9"	124	
C1	64	#4	STR	10'-8"	456	
D1	14	#6	STR	2'-6"	53	
F1	4	#4	STR	3'-9"	10	
G1	2	#4	STR	8'-5"	11	
S1	6	#8	STR	6'-2"	99	
S2	6	#8	STR	8'-5"	135	
REINFORCING STEEL					=	1576 LBS

BAR SCHEDULE						
RIGHT EXTENSION						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
A3	76	#4	1	4'-5"	224	
A4	76	#4	1	4'-5"	224	
A100	25	#5	STR	6'-0"	156	
A101	1	#5	STR	4'-5"	5	
A102	1	#5	STR	1'-10"	2	
A103	1	#5	STR	5'-4"	6	
A104	1	#5	STR	4'-1"	4	
A105	1	#5	STR	2'-10"	3	
A106	1	#5	STR	1'-8"	2	
A200	25	#5	STR	6'-0"	156	
A201	1	#5	STR	4'-5"	5	
A202	1	#5	STR	1'-10"	2	
A203	1	#5	STR	5'-4"	6	
A204	1	#5	STR	4'-1"	4	
A205	1	#5	STR	2'-10"	3	
A206	1	#5	STR	1'-8"	2	
B1	51	#4	STR	3'-9"	128	
C1	60	#4	STR	11'-7"	464	
D1	12	#6	STR	2'-6"	45	
F1	4	#4	STR	3'-9"	10	
G1	2	#4	STR	6'-11"	9	
S1	6	#8	STR	6'-2"	99	
S2	6	#8	STR	6'-11"	111	
REINFORCING STEEL					=	1670 LBS

TOTAL BILL OF MATERIALS			
LEFT EXTENSION		RIGHT EXTENSION	
CLASS A CONCRETE		CLASS A CONCRETE	
BARREL @ 0.495	CY/FT 9.5 C.Y.	BARREL @ 0.445	CY/FT 9.5 C.Y.
WINGS ETC.	8.2 C.Y.	WINGS ETC.	6.7 C.Y.
TOTAL	17.7 C.Y.	TOTAL	16.2 C.Y.
FOUNDATION COND. MAT'L ----- 9 TONS		FOUNDATION COND. MAT'L ----- 10 TONS	
REINFORCING STEEL		REINFORCING STEEL	
BARREL	1576 LBS.	BARREL	1670 LBS.
WINGS ETC.	393 LBS.	WINGS ETC.	318 LBS.
TOTAL	1969 LBS.	TOTAL	1988 LBS.



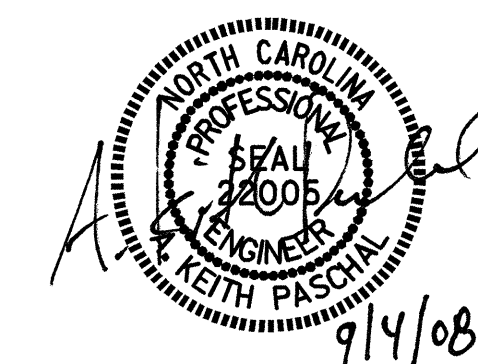
PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 191+65.92 -L-

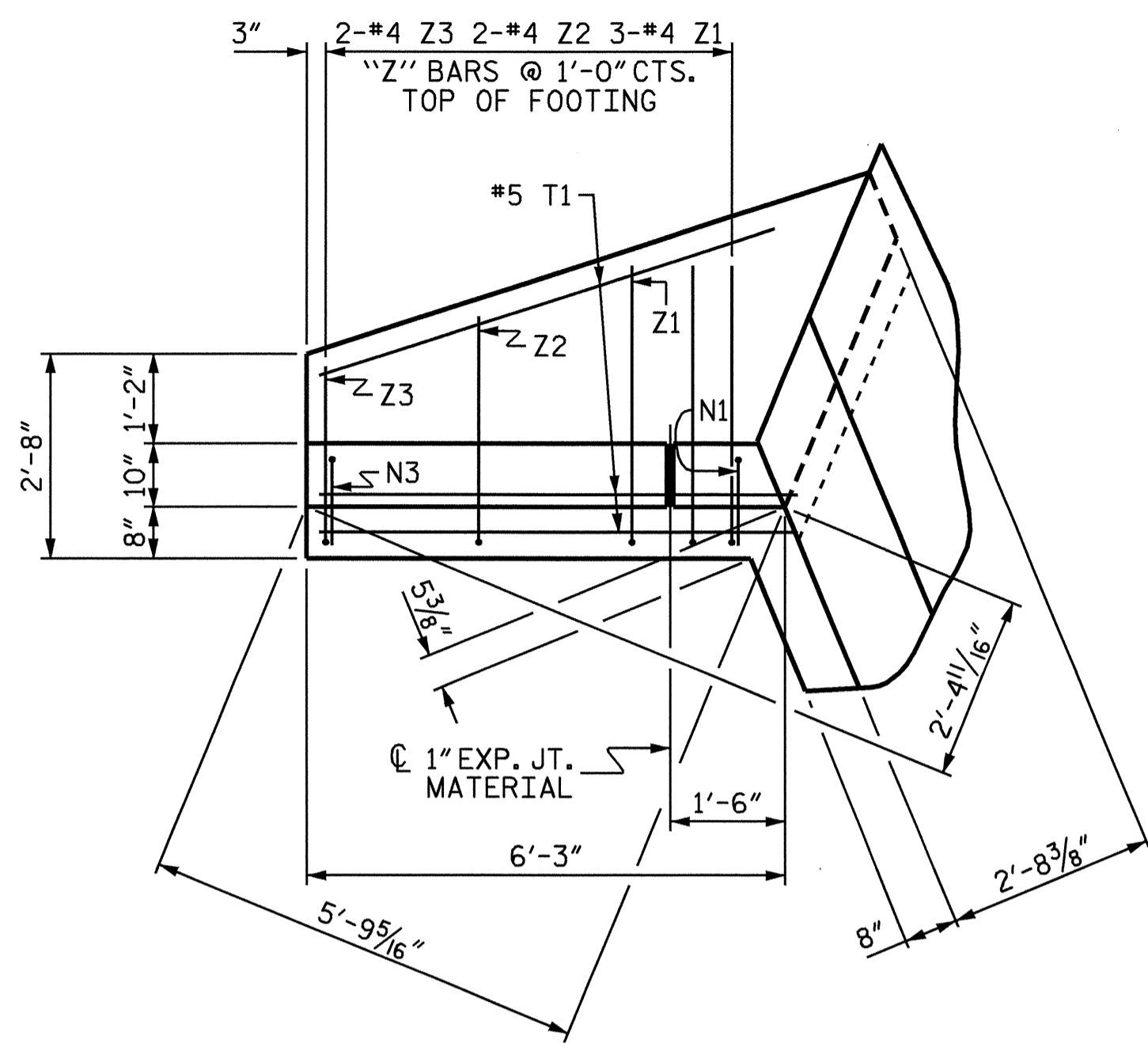
SHEET 5 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE BARREL
 CONCRETE BOX CULVERT
 LEFT AND RIGHT
 EXTENSIONS

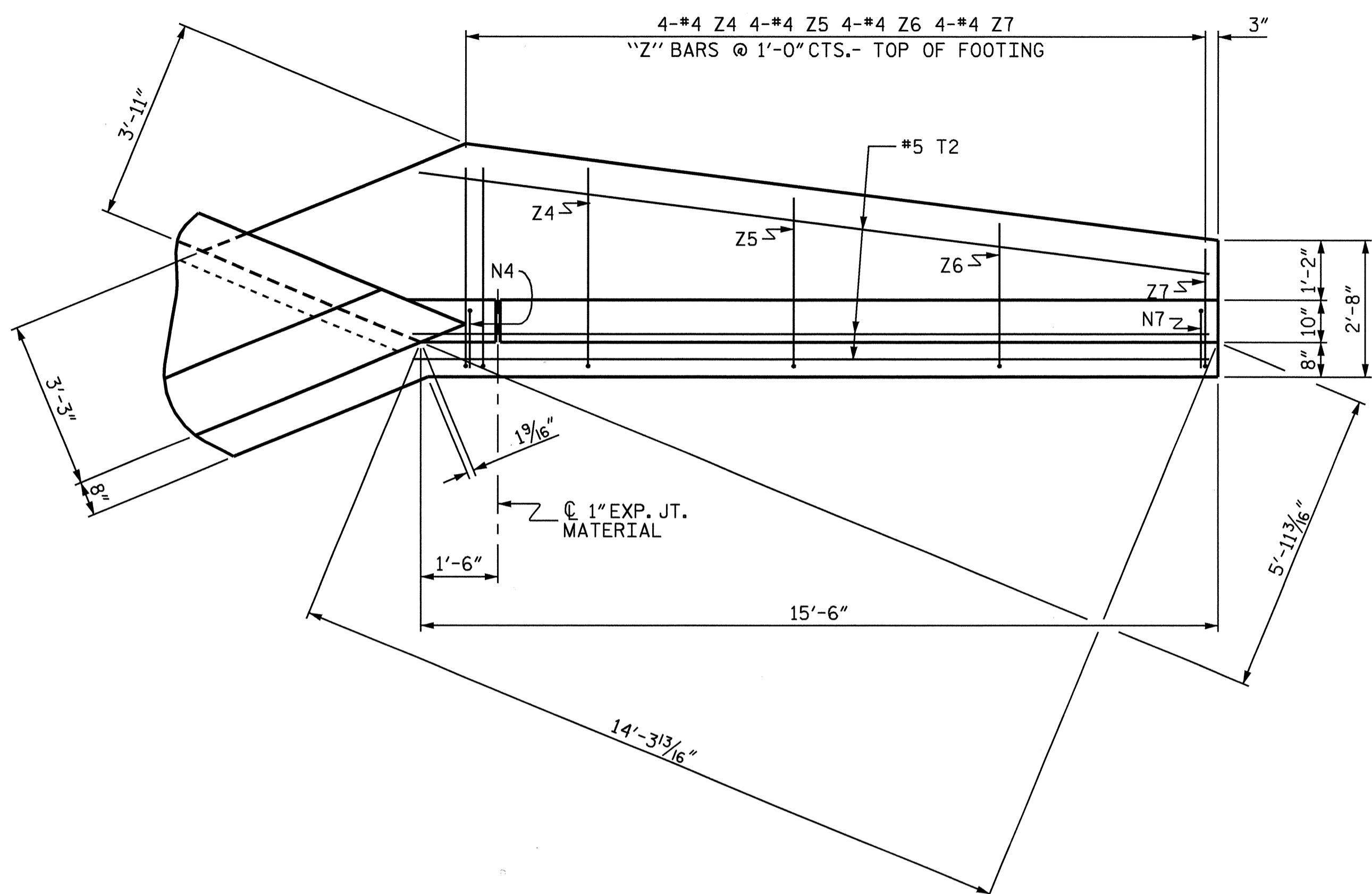
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-5
1			3			TOTAL SHEETS
2			4			14

DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08

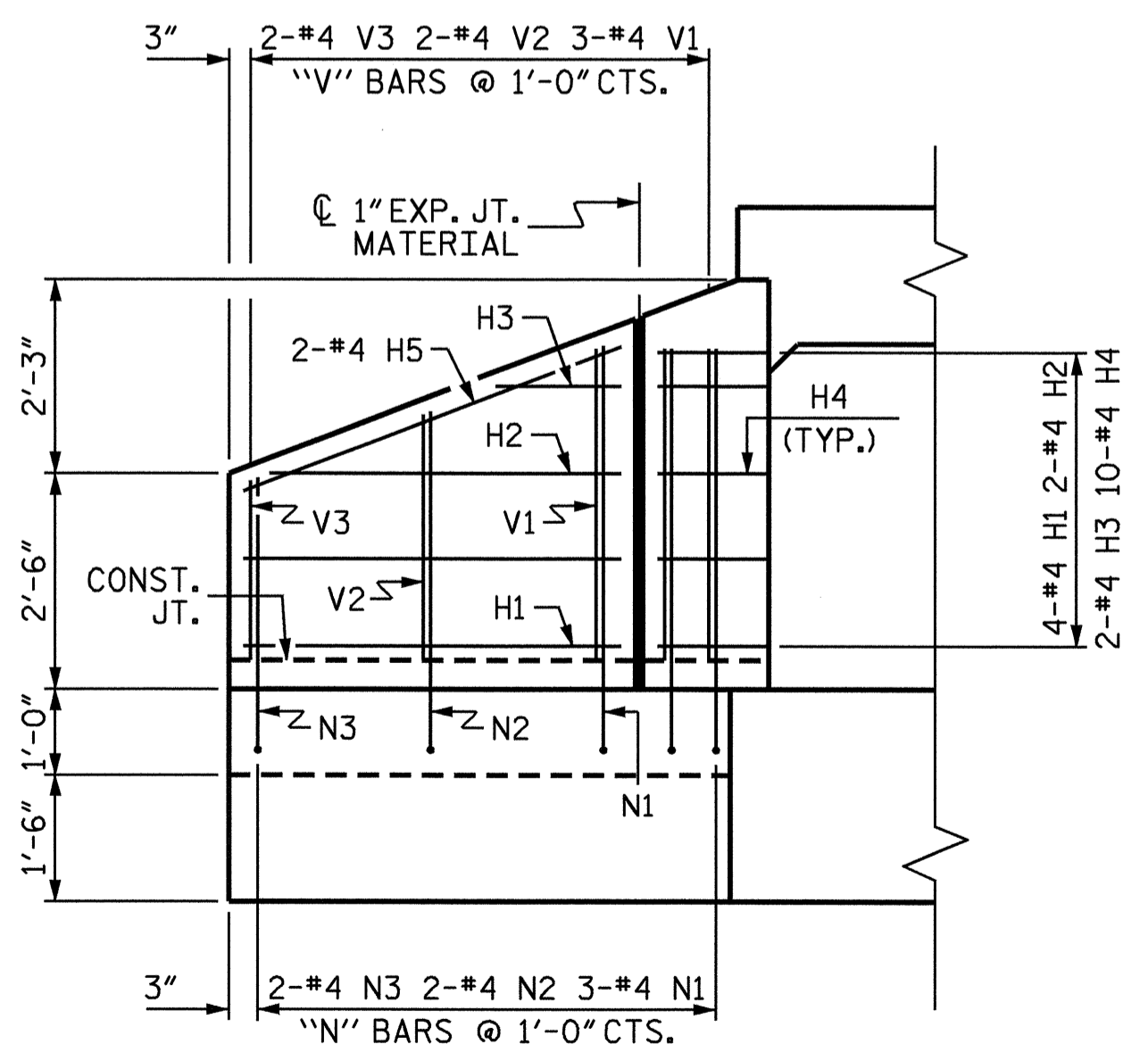




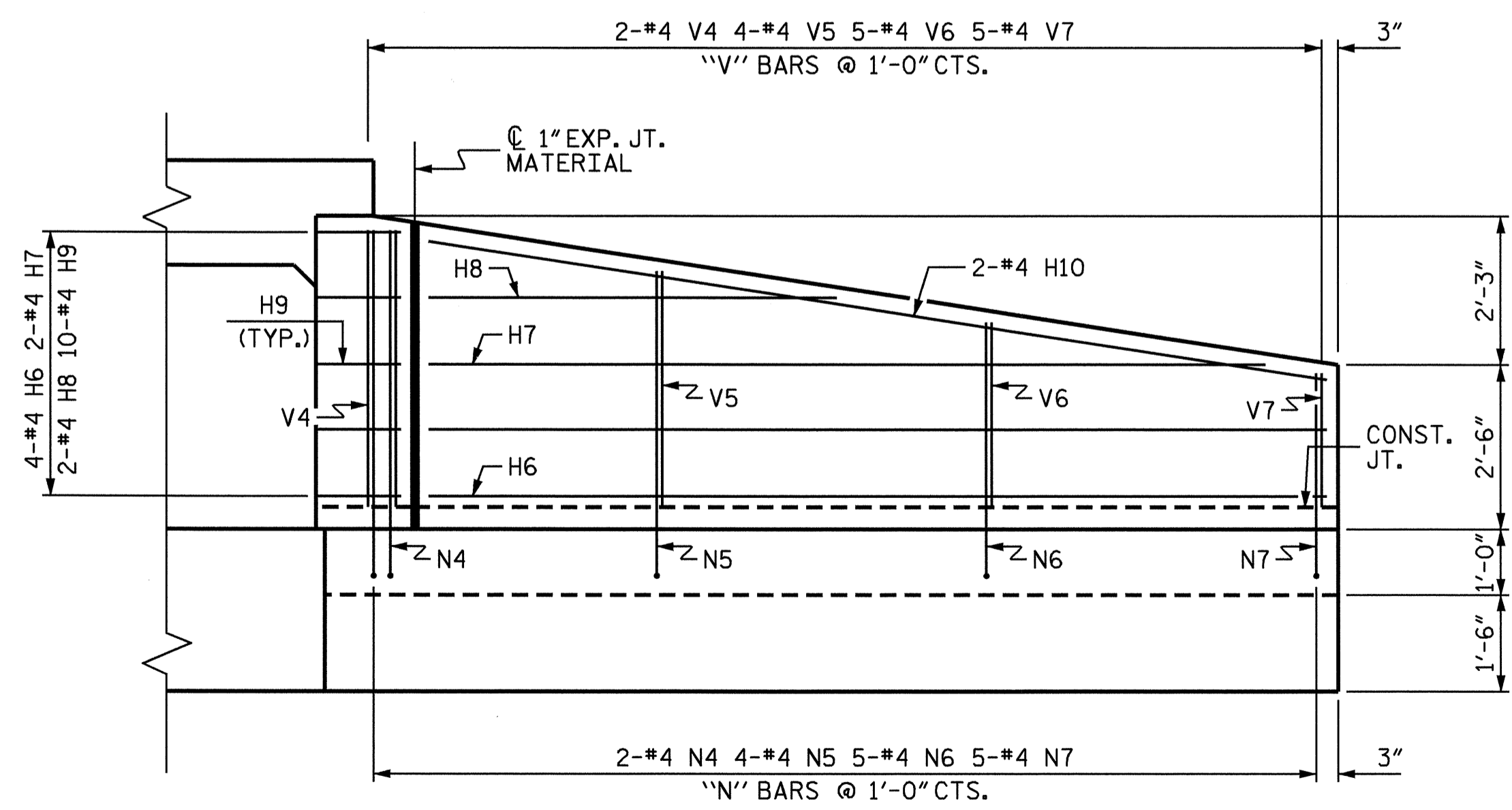
PLAN W2



PLAN W1



ELEVATION W2

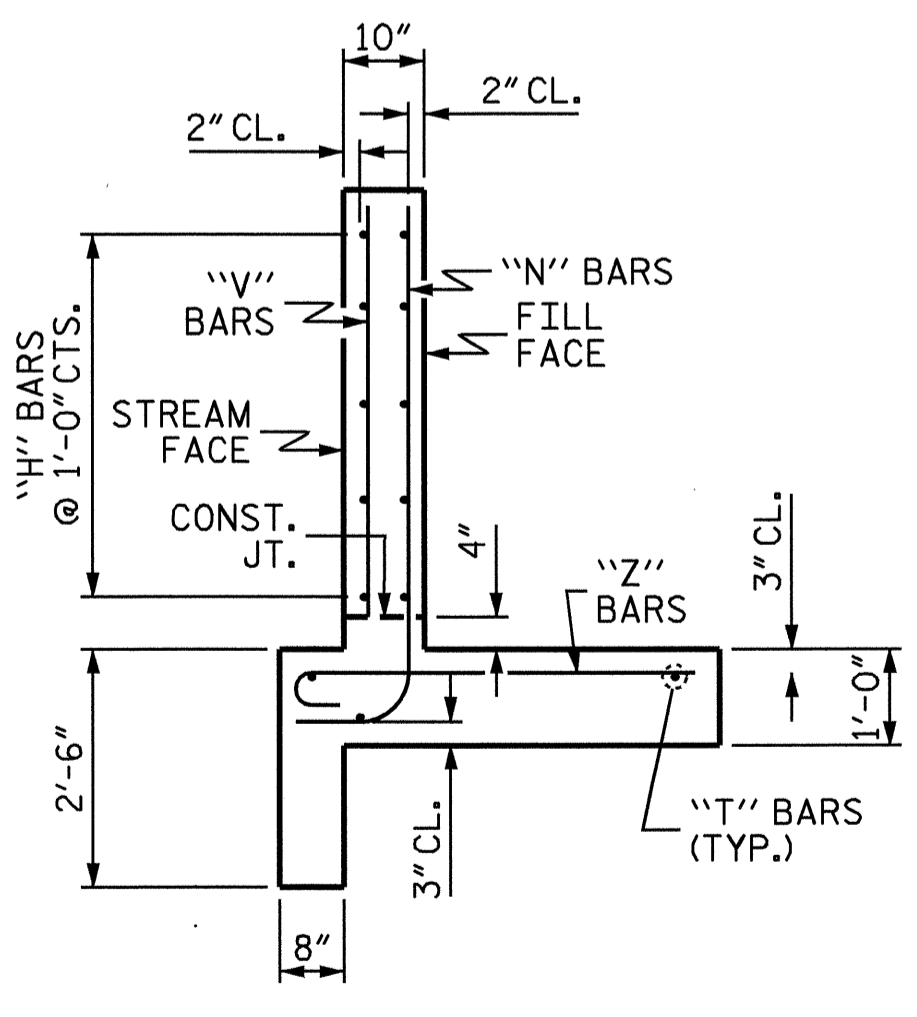


ELEVATION W1

BAR TYPES
ALL BAR DIMENSIONS ARE OUT TO OUT.

Z1	3'-8"	6"
Z2	3'-0"	6"
Z3	2'-4"	6"
Z4	3'-11"	6"
Z5	3'-4"	6"
Z6	2'-10"	6"
Z7	2'-4"	6"

BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	4	#4	STR	4'-4"	12
H2	2	#4	STR	4'-0"	5
H3	2	#4	STR	1'-5"	2
H4	10	#4	1	3'-3"	22
H5	2	#4	STR	4'-8"	6
H6	4	#4	STR	13'-7"	36
H7	2	#4	STR	12'-8"	17
H8	2	#4	STR	6'-2"	8
H9	10	#4	2	3'-3"	22
H10	2	#4	STR	13'-9"	18
N1	3	#4	3	5'-8"	11
N2	2	#4	3	4'-11"	7
N3	2	#4	3	4'-1"	5
N4	2	#4	3	6'-2"	8
N5	4	#4	3	5'-7"	15
N6	5	#4	3	4'-10"	16
N7	5	#4	3	4'-1"	14
T1	3	#5	STR	6'-3"	20
T2	3	#5	STR	15'-6"	48
V1	3	#4	STR	3'-7"	7
V2	2	#4	STR	2'-10"	4
V3	2	#4	STR	2'-1"	3
V4	2	#4	STR	4'-2"	6
V5	4	#4	STR	3'-6"	9
V6	5	#4	STR	2'-9"	9
V7	5	#4	STR	2'-0"	7
Z1	3	#4	4	4'-2"	8
Z2	2	#4	4	3'-6"	5
Z3	2	#4	4	2'-10"	4
Z4	4	#4	4	4'-5"	12
Z5	4	#4	4	3'-10"	10
Z6	4	#4	4	3'-4"	9
Z7	4	#4	4	2'-10"	8
REINFORCING STEEL FOR 2 WINGS					393 LBS
CLASS A CONCRETE					
2 WINGS					7.4 CY
1 HEADWALL					0.4 CY
1 END CURTAIN WALL					0.4 CY
TOTAL					8.2 CY



TYPICAL WING SECTION

PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 191+65.92 -L-

SHEET 6 OF 7

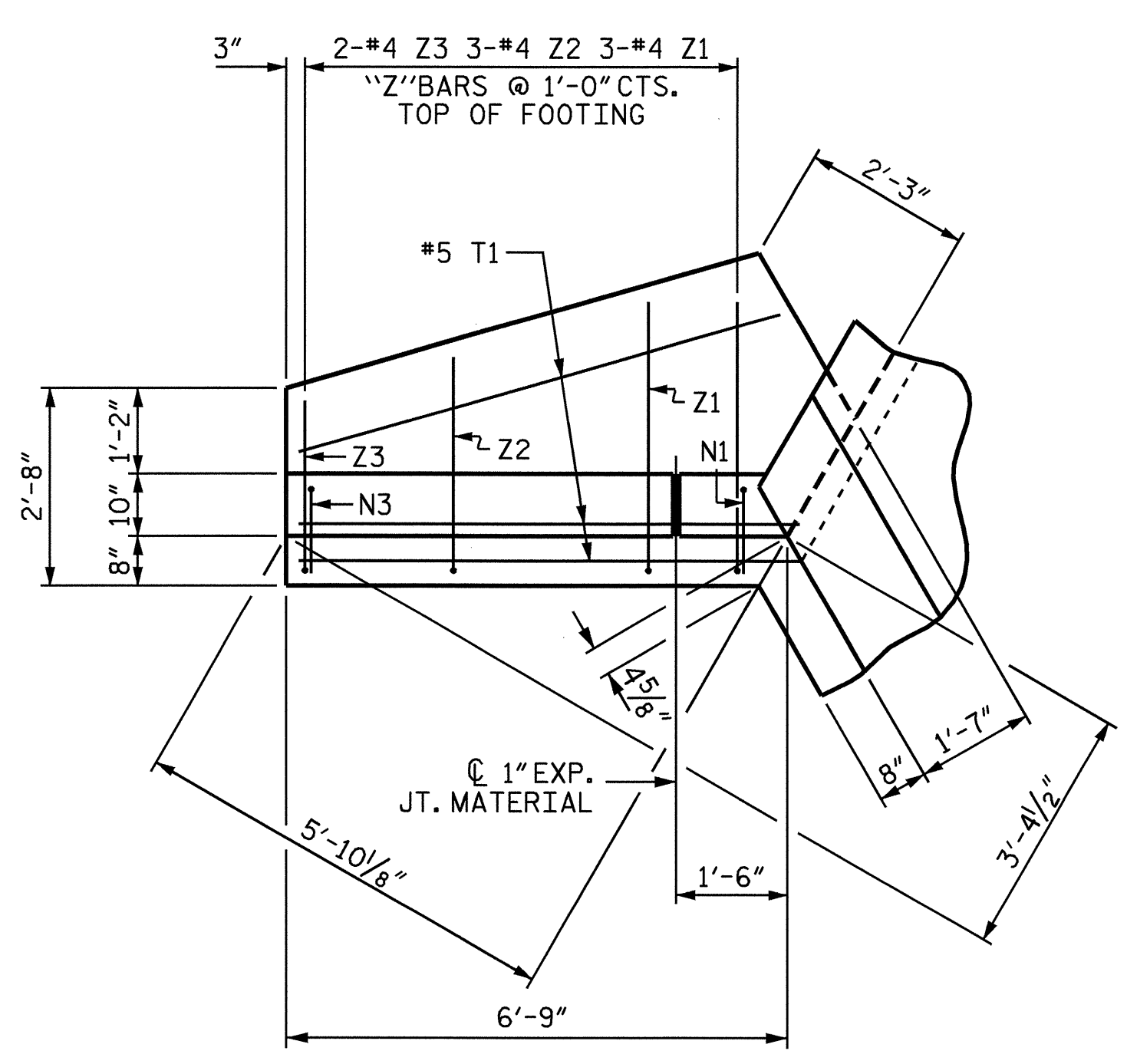
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

WINGS FOR CONCRETE BOX CULVERT -LEFT EXTENSION-
 H = 4'-0" SLOPE = VARIES
 45° SKEW

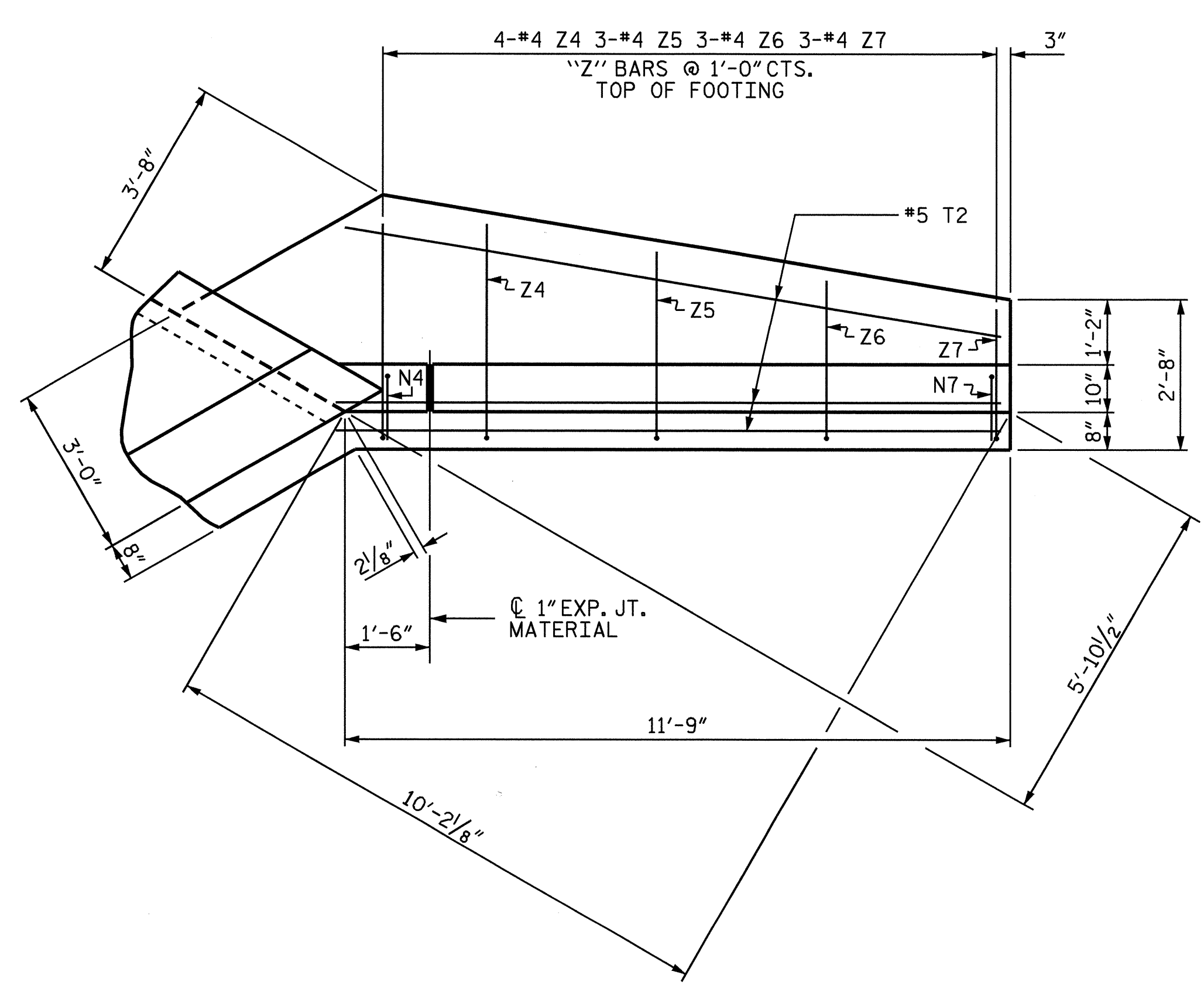
DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08



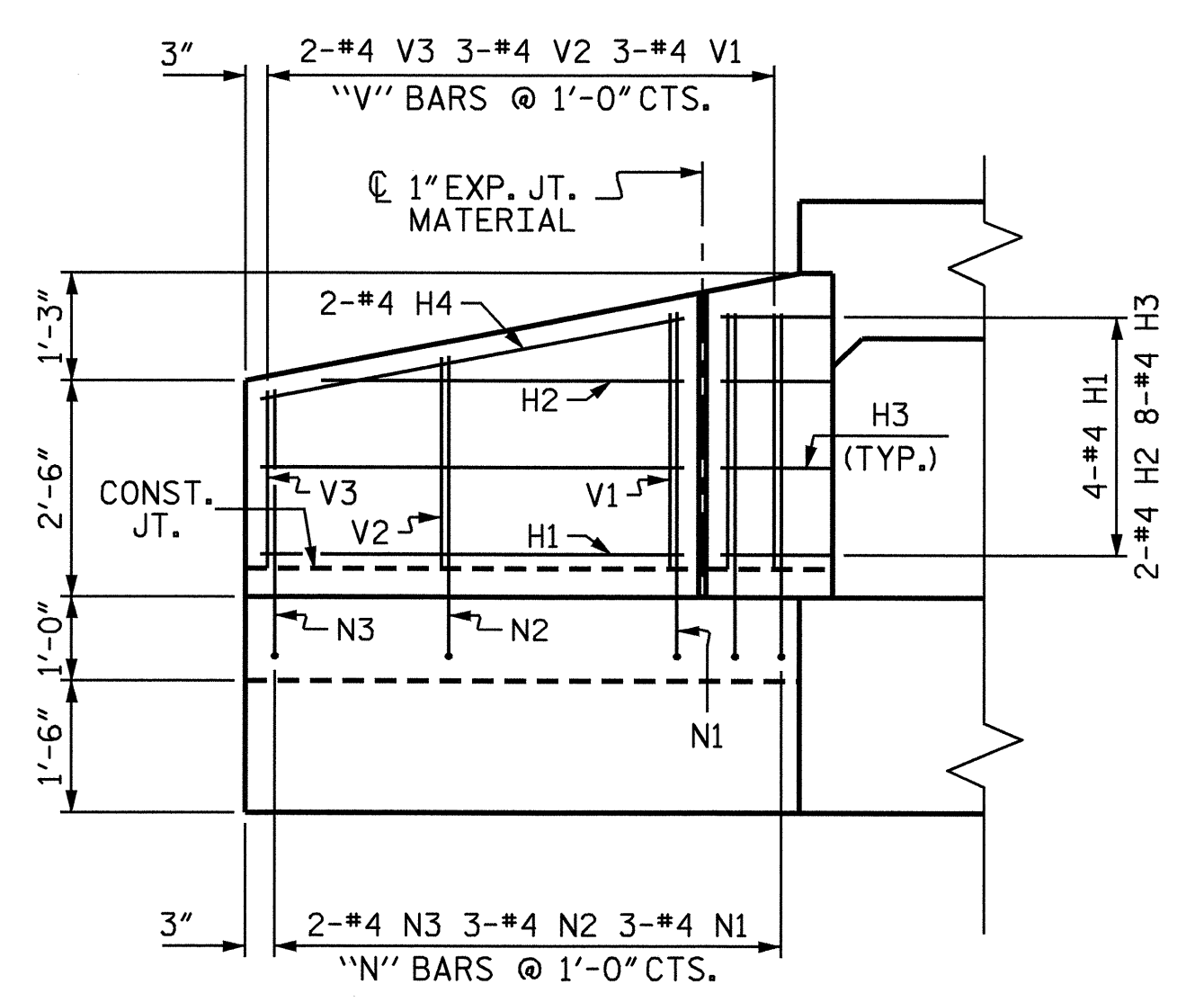
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-6
1			3			TOTAL SHEETS
2			4			14



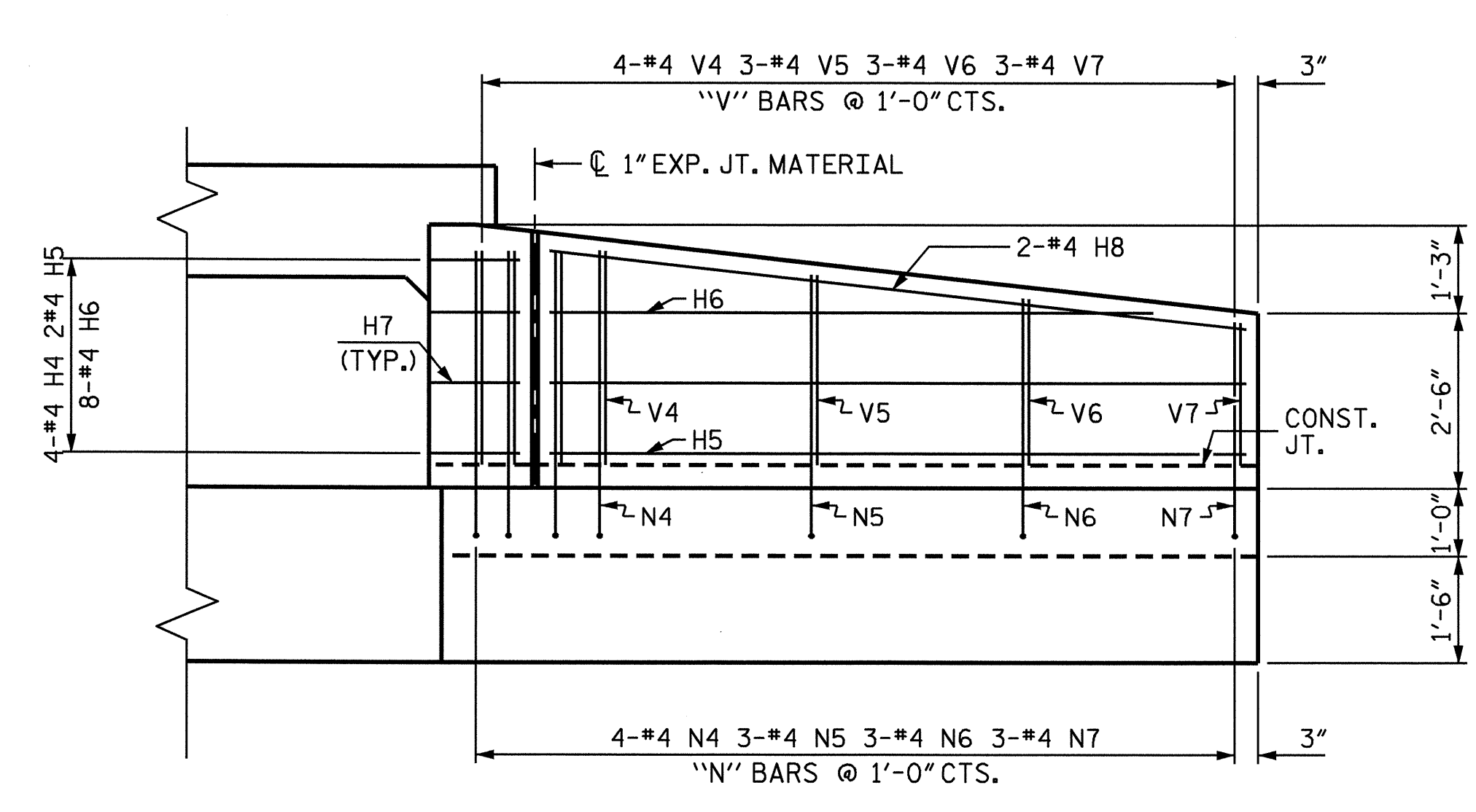
PLAN W2



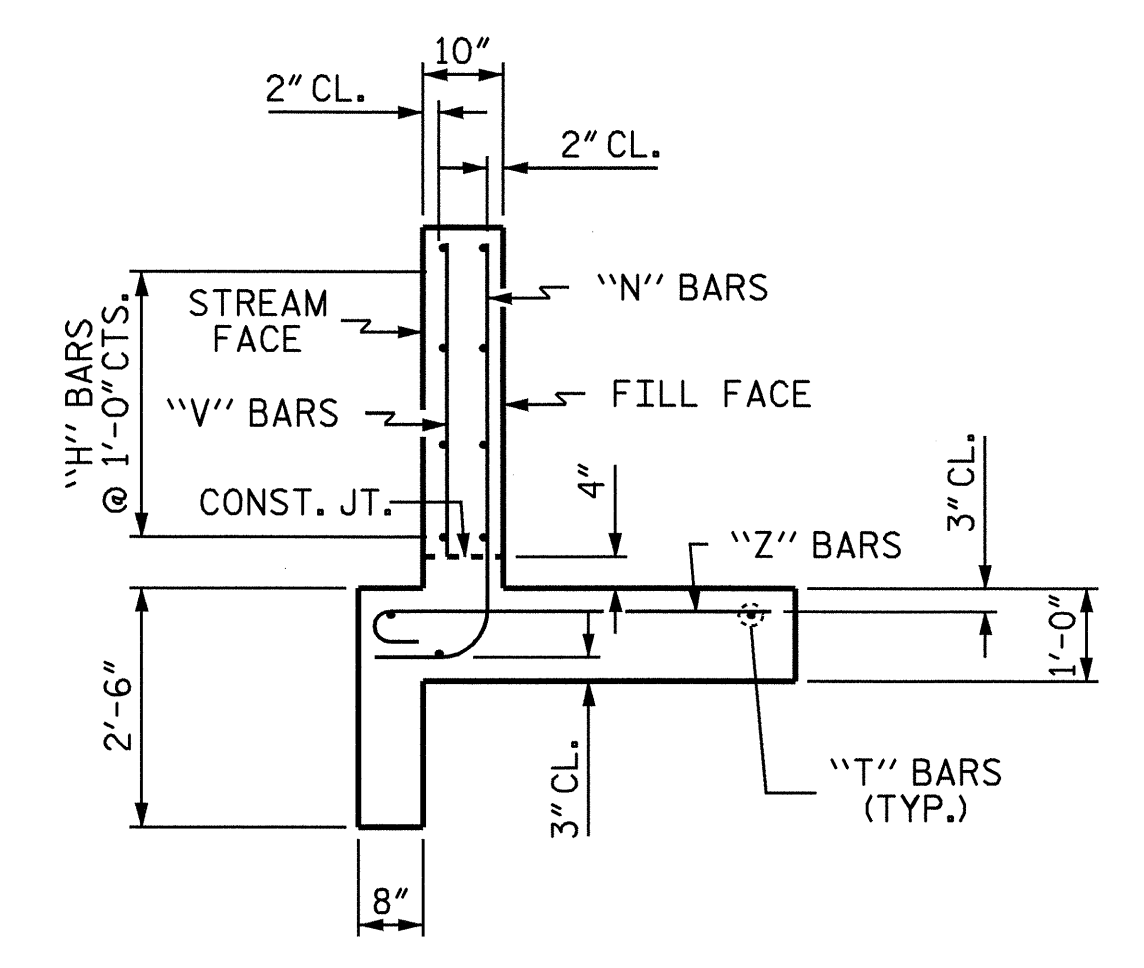
PLAN W1



ELEVATION W2



ELEVATION W1



TYPICAL WING SECTION

BAR TYPES
 ALL BAR DIMENSIONS ARE OUT TO OUT.

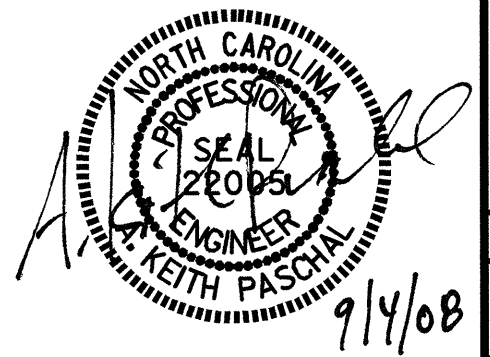
Z1	3'-8"	6"
Z2	2'-11"	6"
Z3	2'-4"	6"
Z4	3'-10"	6"
Z5	3'-4"	6"
Z6	2'-10"	6"
Z7	2'-4"	6"

BILL OF MATERIAL					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
H1	4	#4	STR	4'-10"	13
H2	2	#4	STR	4'-2"	6
H3	8	#4	1	3'-3"	17
H4	2	#4	STR	4'-11"	7
H5	4	#4	STR	9'-10"	26
H6	2	#4	STR	8'-6"	11
H7	8	#4	2	3'-3"	17
H8	2	#4	STR	9'-11"	13
N1	3	#4	3	5'-0"	10
N2	3	#4	3	4'-5"	9
N3	2	#4	3	4'-1"	5
N4	4	#4	3	5'-1"	14
N5	3	#4	3	4'-9"	10
N6	3	#4	3	4'-5"	6
N7	3	#4	3	4'-0"	8
T1	3	#5	STR	6'-9"	21
T2	3	#5	STR	11'-9"	37
V1	3	#4	STR	2'-11"	6
V2	3	#4	STR	2'-5"	5
V3	2	#4	STR	2'-0"	3
V4	4	#4	STR	3'-0"	8
V5	3	#4	STR	2'-8"	5
V6	3	#4	STR	2'-4"	5
V7	3	#4	STR	2'-0"	4
Z1	3	#4	4	4'-2"	8
Z2	3	#4	4	3'-4"	7
Z3	2	#4	4	2'-10"	4
Z4	4	#4	4	4'-4"	12
Z5	3	#4	4	4'-0"	8
Z6	3	#4	4	3'-4"	7
Z7	3	#4	4	2'-10"	6

REINFORCING STEEL FOR 2 WINGS		318 LBS
CLASS A CONCRETE		
2 WINGS		6.1 CY
1 HEADWALL		0.3 CY
1 END CURTAIN WALL		0.3 CY
TOTAL		6.7 CY

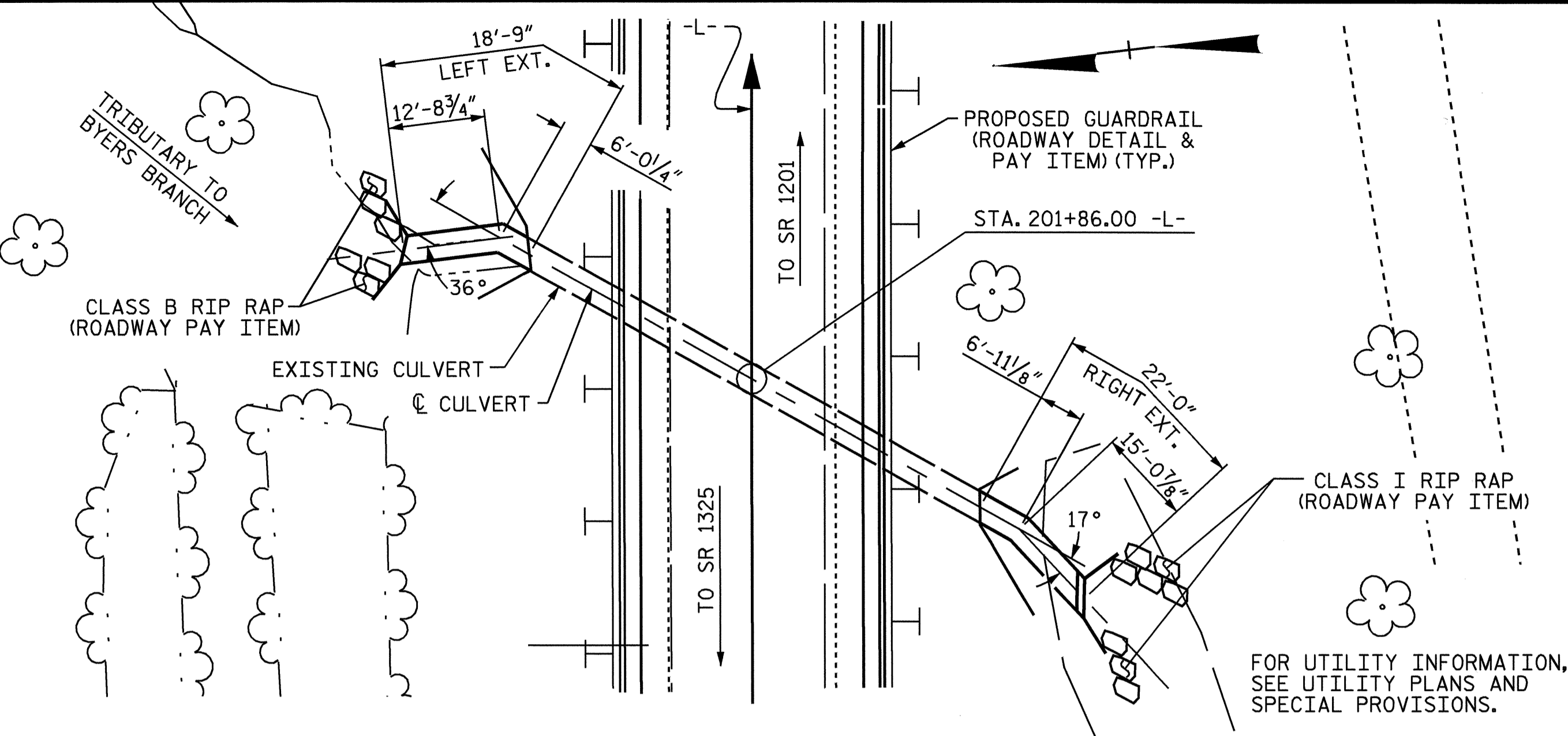
PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 191+65.92 -L-
 SHEET 7 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
WINGS FOR CONCRETE BOX CULVERT -RIGHT EXTENSION-
 H = 3'-0" SLOPE = VARIES
 60° SKEW



DRAWN BY: B.N. GRADY DATE: 7-08
 CHECKED BY: J.D. HAWK DATE: 8-08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-7
1			3			TOTAL SHEETS
2			4			14



GRADE DATA

GRADE POINT ELEV. @ STA. 201+86.00 -L-	= 1972.23
BED ELEV. @ STA. 201+86.00 -L-	= 1952.50
ROADWAY SLOPES	= 2:1

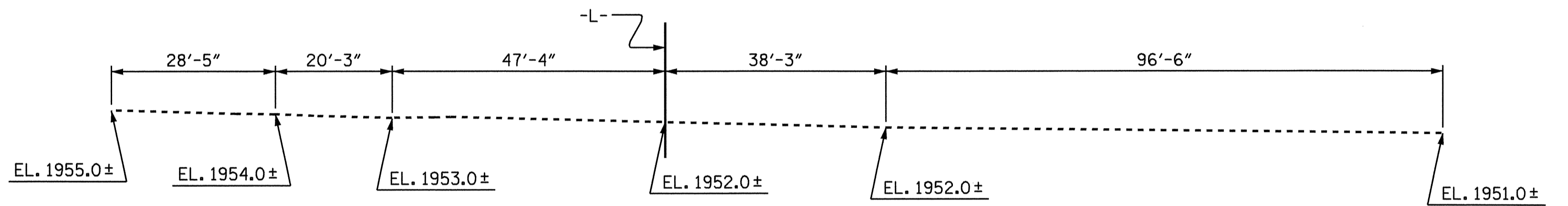
HYDRAULIC DATA

DESIGN DISCHARGE	= 100 c.f.s.
FREQUENCY OF DESIGN FLOOD	= 50 yrs.
DESIGN HIGH WATER ELEVATION	= 1957.7
DRAINAGE AREA	= 79 acres
BASIC DISCHARGE (Q100)	= 120 c.f.s.
BASIC HIGH WATER ELEVATION	= 1958.2

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 380 c.f.s.
FREQUENCY OF OVERTOPPING FLOOD	= 500 + yrs.
OVERTOPPING FLOOD ELEVATION	= 1965.0

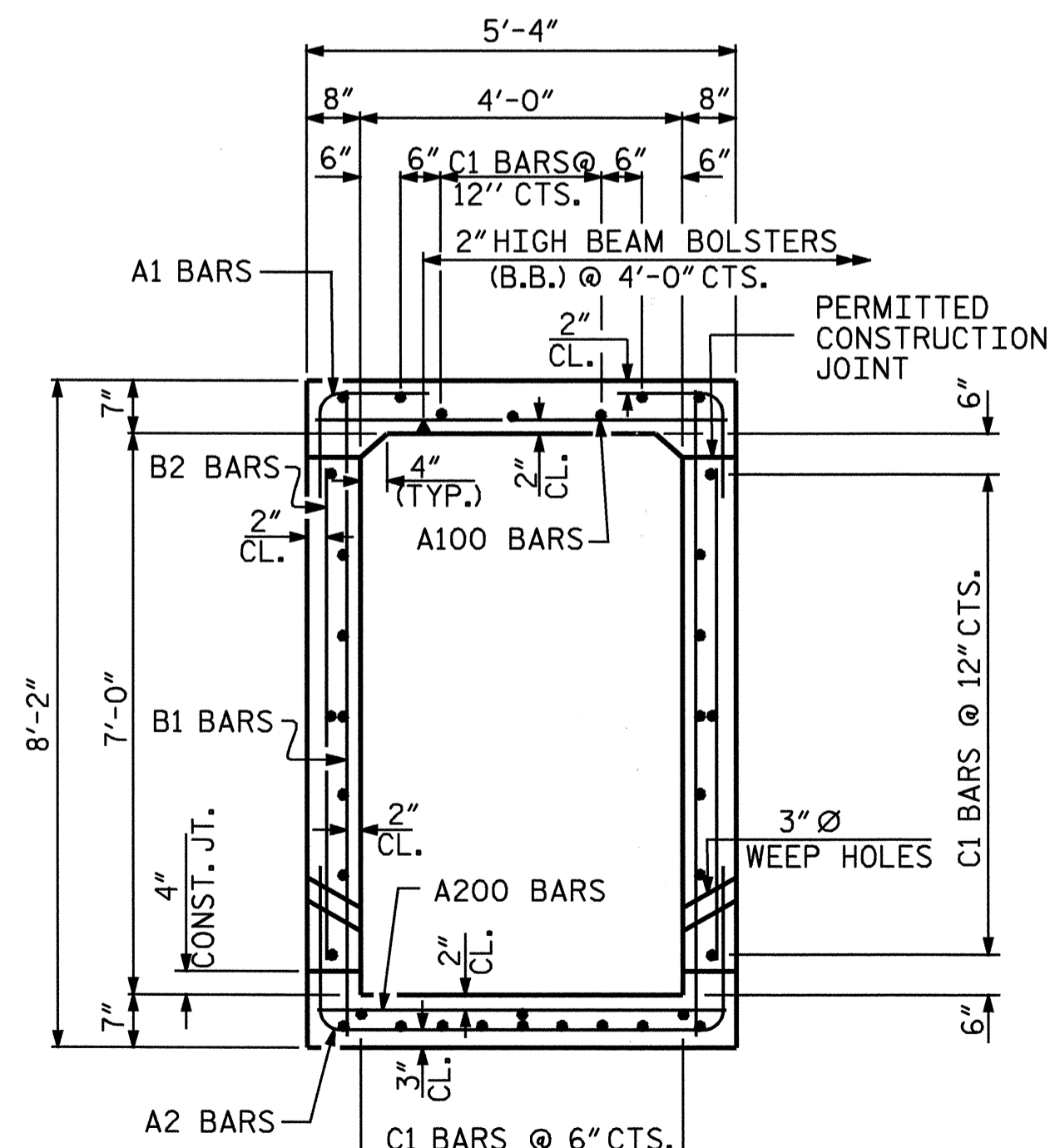
LOCATION SKETCH



PROFILE ALONG CULVERT

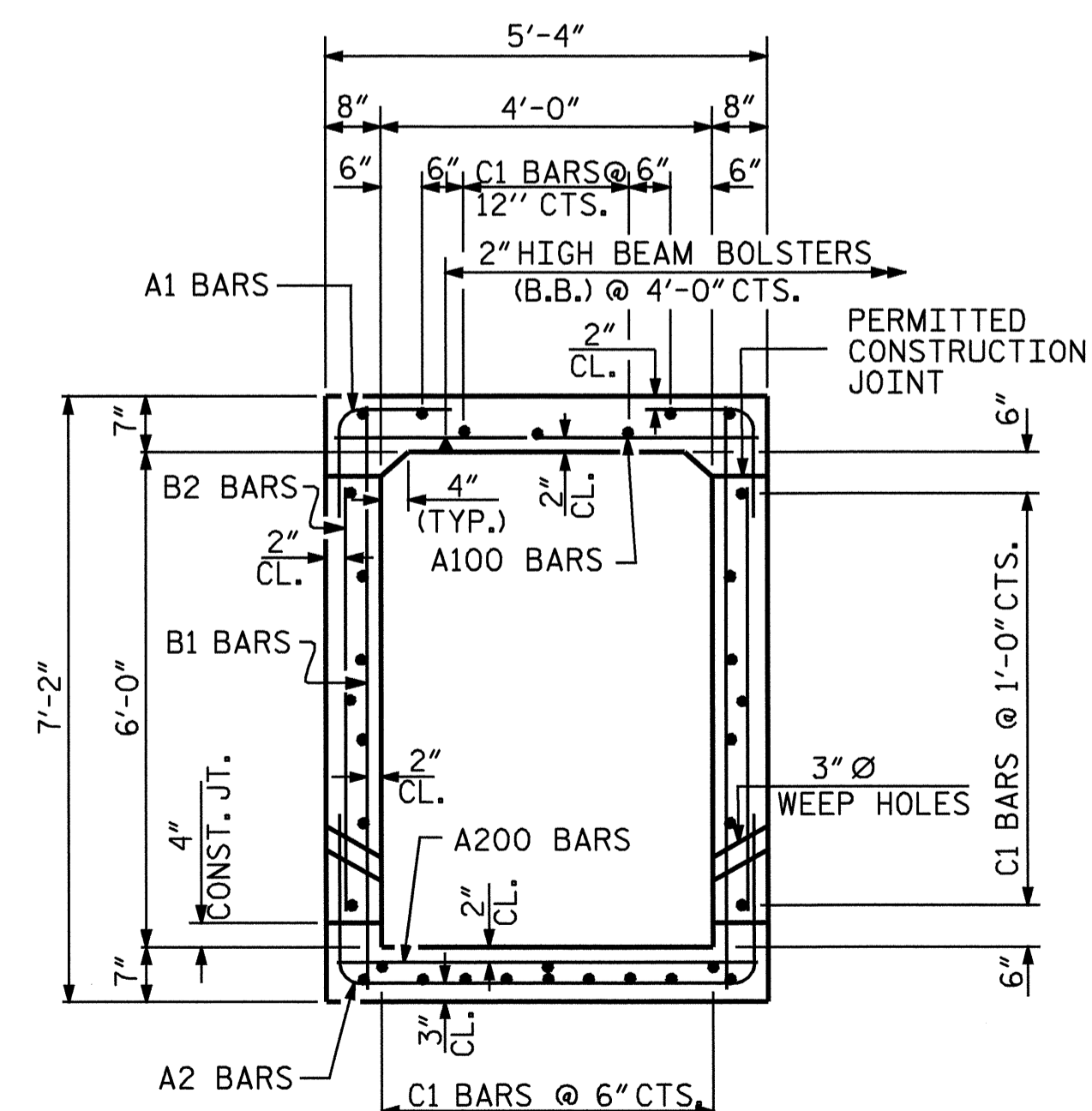
TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
LEFT EXTENSION	20.5	C.Y.
RIGHT EXTENSION	21.6	C.Y.
TOTAL	42.1	C.Y.
REINFORCING STEEL		
LEFT EXTENSION	2096	LBS.
RIGHT EXTENSION	2409	LBS.
TOTAL	4505	LBS.
FOUNDATION COND. MAT'L	16	TONS
CULVERT EXCAVATION	LUMP SUM	



RIGHT ANGLE SECTION OF BARREL - LEFT EXTENSION

THERE ARE 35 "C" BARS IN SECTION OF BARREL



RIGHT ANGLE SECTION OF BARREL - RIGHT EXTENSION

THERE ARE 33 "C" BARS IN SECTION OF BARREL

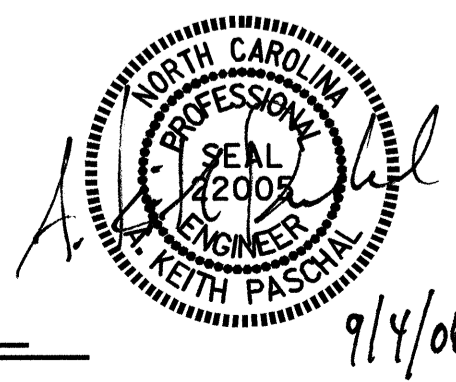
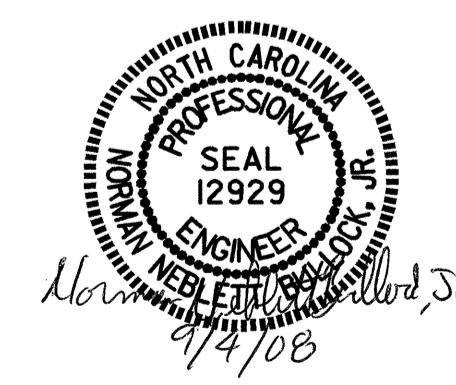
NOTES

- ASSUMED LIVE LOAD -----HS20-44 OR ALTERNATE LOADING.
- DESIGN FILL----- 13.87' LEFT EXTENSION AND 14.46' RIGHT EXTENSION
- 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.
- 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.

- 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. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.
- 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.
- NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- 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.

PROJECT NO. A-0011BB
 CLAY COUNTY
 STATION: 201+86.00 -L-

SHEET 1 OF 7

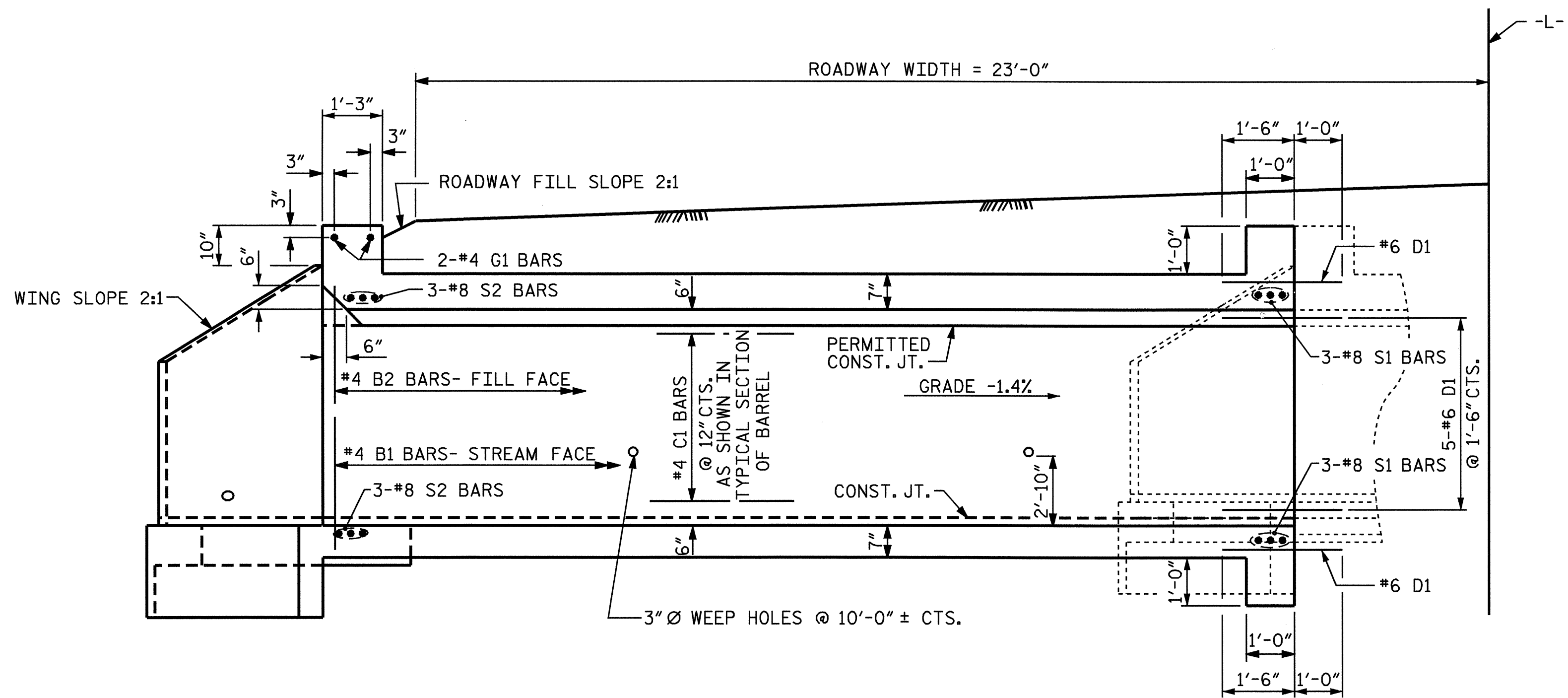


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

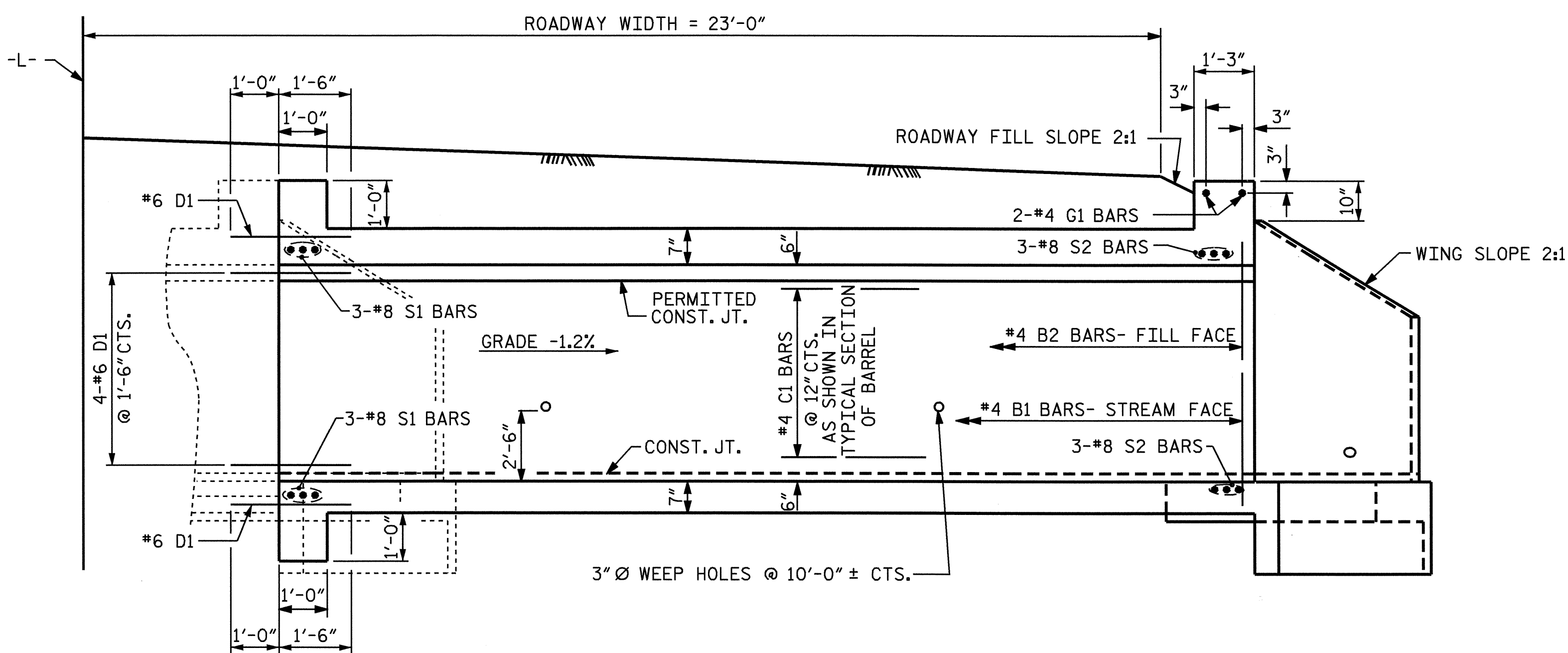
**SINGLE BARREL
 CONCRETE BOX CULVERT
 LEFT AND RIGHT
 EXTENSIONS**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-8
1			3			TOTAL SHEETS
2			4			14

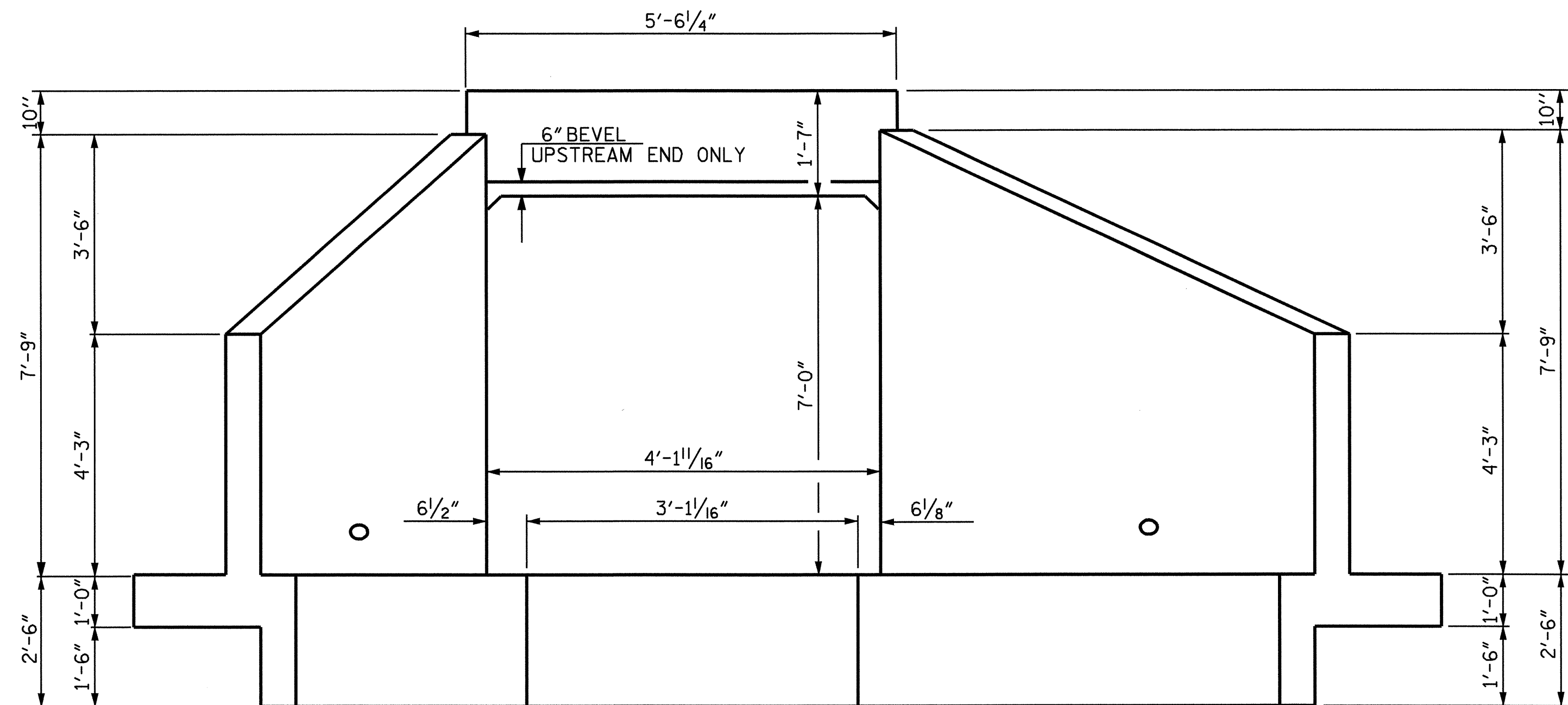
DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08



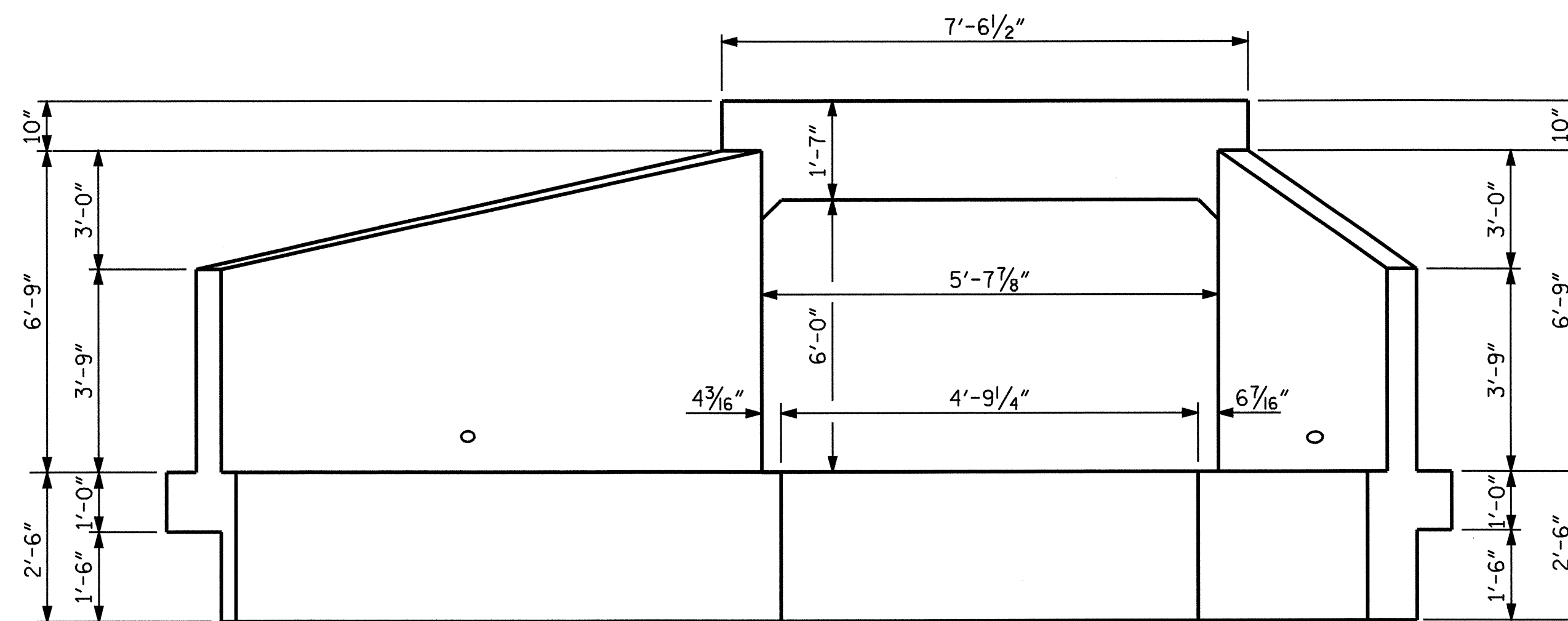
CULVERT SECTION NORMAL TO ROADWAY - LEFT EXTENSION



CULVERT SECTION NORMAL TO ROADWAY - RIGHT EXTENSION



END ELEVATION NORMAL TO SKEW - LEFT EXTENSION



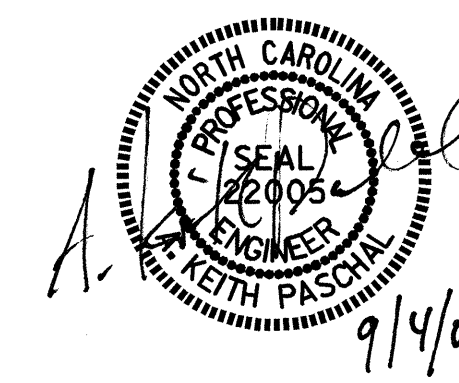
END ELEVATION NORMAL TO SKEW - RIGHT EXTENSION

PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 201+86.00 -L-

SHEET 2 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

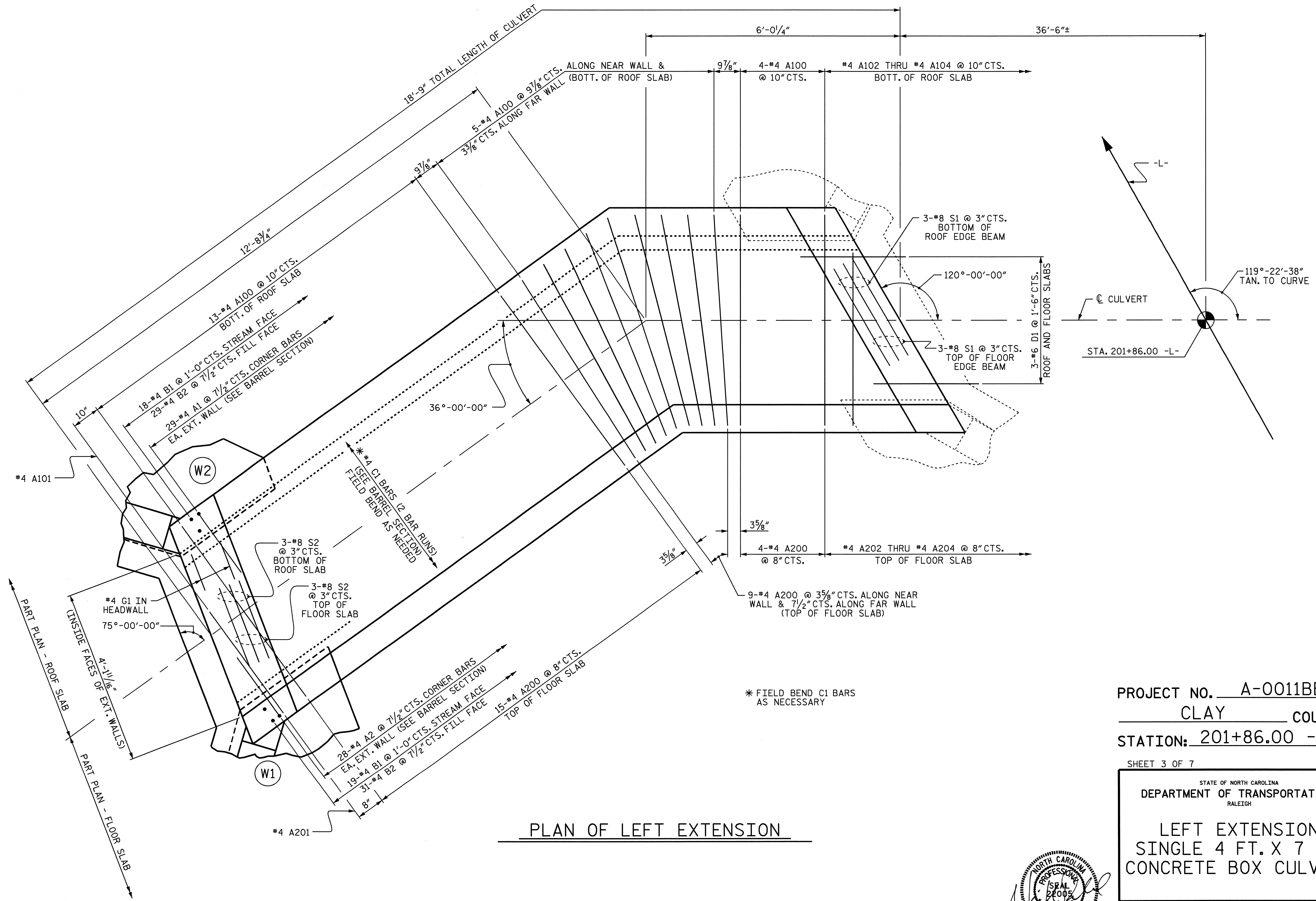
SINGLE BARREL
 CONCRETE BOX CULVERT
 LEFT AND RIGHT
 EXTENSIONS



DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08

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 jdhawk

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-9
1			3			TOTAL SHEETS
2			4			14



PLAN OF LEFT EXTENSION

PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 201+86.00 -L-

SHEET 3 OF 7

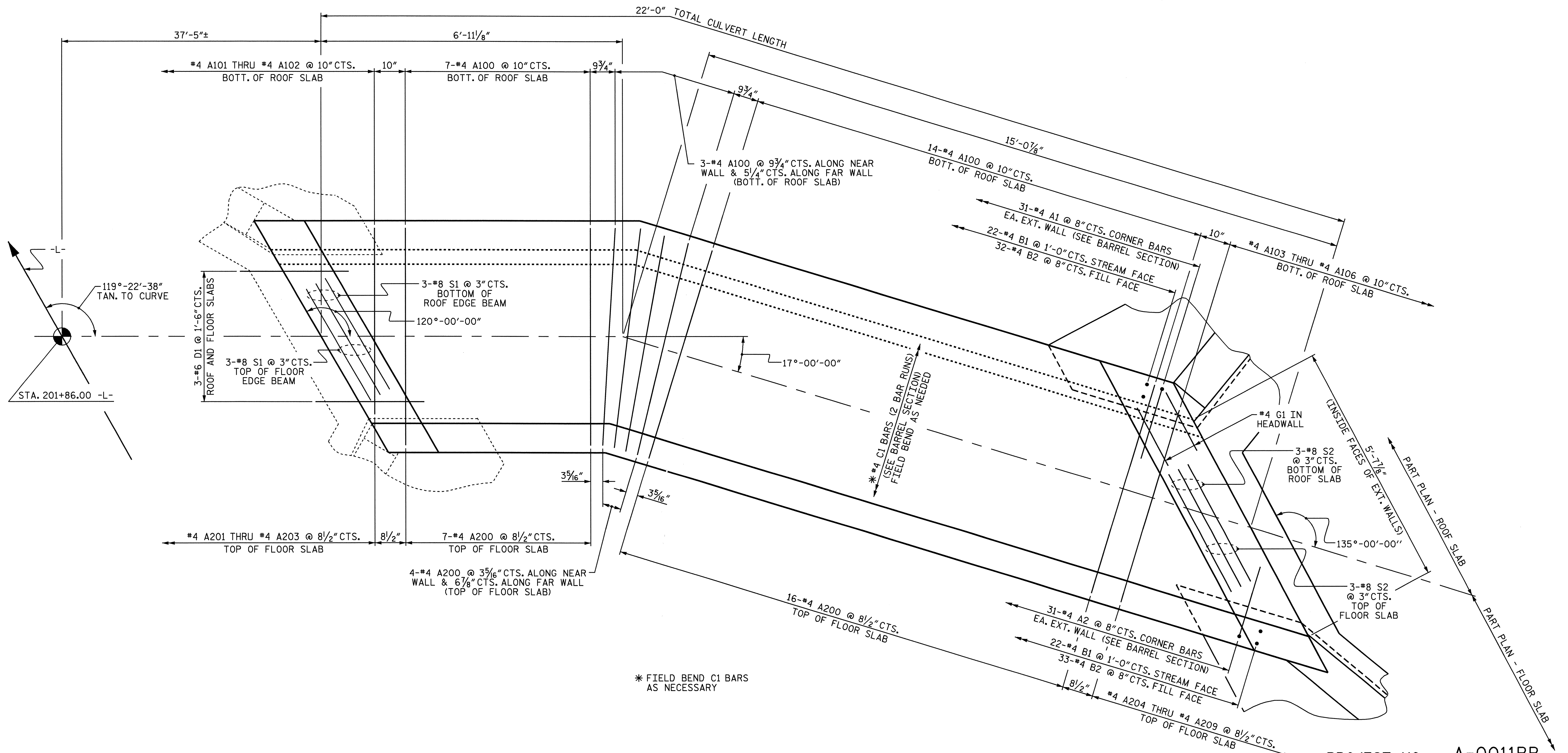
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 LEFT EXTENSION
 SINGLE 4 FT. X 7 FT.
 CONCRETE BOX CULVERT



DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	C-10	
1			3			TOTAL	14
2			4			SHEETS	

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 kpaschal



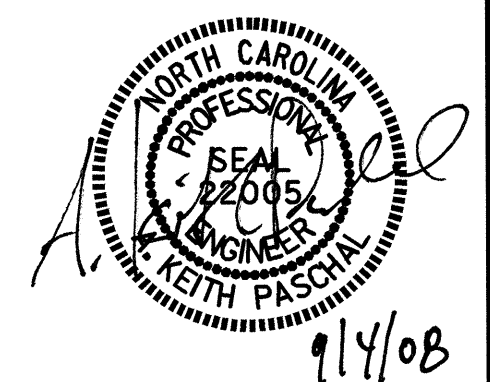
PLAN OF RIGHT EXTENSION

PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 201+86.00 -L-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**RIGHT EXTENSION
 SINGLE 4 FT. X 6 FT.
 CONCRETE BOX CULVERT**



DRAWN BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-11
1			3			TOTAL SHEETS
2			4			14

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

BAR TYPE
DIMENSIONS ARE OUT TO OUT

BAR SCHEDULE						
LEFT EXTENSION						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
A1	58	#4	1	3'-7"	139	
A2	56	#4	1	3'-7"	134	
A100	22	#4	STR	5'-0"	73	
A101	1	#4	STR	2'-7"	2	
A102	1	#4	STR	3'-11"	3	
A103	1	#4	STR	2'-6"	2	
A104	1	#4	STR	1'-0"	1	
A200	28	#4	STR	5'-0"	94	
A201	1	#4	STR	2'-11"	2	
A202	1	#4	STR	4'-1"	3	
A203	1	#4	STR	2'-11"	2	
A204	1	#4	STR	1'-9"	1	
B1	37	#4	STR	7'-8"	189	
B2	60	#4	STR	6'-4"	254	
C1	70	#4	STR	10'-5"	487	
D1	16	#6	STR	2'-6"	60	
G1	2	#4	STR	5'-2"	7	
S1	6	#8	STR	5'-9"	92	
S2	6	#8	STR	5'-2"	83	
REINFORCING STEEL					=	1628 LBS

BAR SCHEDULE						
RIGHT EXTENSION						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
A1	62	#4	1	4'-11"	204	
A2	62	#4	1	4'-11"	204	
A100	24	#4	STR	5'-0"	80	
A101	1	#4	STR	3'-7"	2	
A102	1	#4	STR	2'-2"	1	
A103	1	#4	STR	4'-2"	3	
A104	1	#4	STR	3'-4"	2	
A105	1	#4	STR	2'-6"	2	
A106	1	#4	STR	1'-8"	1	
A200	27	#4	STR	5'-0"	90	
A201	1	#4	STR	4'-3"	3	
A202	1	#4	STR	3'-0"	2	
A203	1	#4	STR	1'-10"	1	
A204	1	#4	STR	4'-7"	3	
A205	1	#4	STR	3'-10"	3	
A206	1	#4	STR	3'-2"	2	
A207	1	#4	STR	2'-5"	2	
A208	1	#4	STR	1'-9"	1	
A209	1	#4	STR	1'-0"	1	
B1	44	#4	STR	6'-8"	196	
B2	65	#4	STR	5'-4"	232	
C1	66	#4	STR	11'-11"	525	
D1	14	#6	STR	2'-6"	53	
G1	2	#4	STR	7'-0"	9	
S1	6	#8	STR	5'-9"	92	
S2	6	#8	STR	7'-0"	112	
REINFORCING STEEL					=	1826 LBS

TOTAL BILL OF MATERIALS			
LEFT EXTENSION		RIGHT EXTENSION	
CLASS A CONCRETE			
BARREL @ 0.580	CY/FT	10.9	C.Y.
WINGS ETC.		9.6	C.Y.
TOTAL		20.5	C.Y.
FOUNDATION COND. MAT'L	-----	7	TONS
REINFORCING STEEL			
BARREL		1628	LBS.
WINGS ETC.		468	LBS.
TOTAL		2096	LBS.
CLASS A CONCRETE			
BARREL @ 0.531	CY/FT	11.7	C.Y.
WINGS ETC.		9.9	C.Y.
TOTAL		21.6	C.Y.
FOUNDATION COND. MAT'L	-----	9	TONS
REINFORCING STEEL			
BARREL		1826	LBS.
WINGS ETC.		583	LBS.
TOTAL		2409	LBS.

PROJECT NO. A-0011BB
CLAY COUNTY
STATION: 201+86.00 -L-
SHEET 5 OF 7

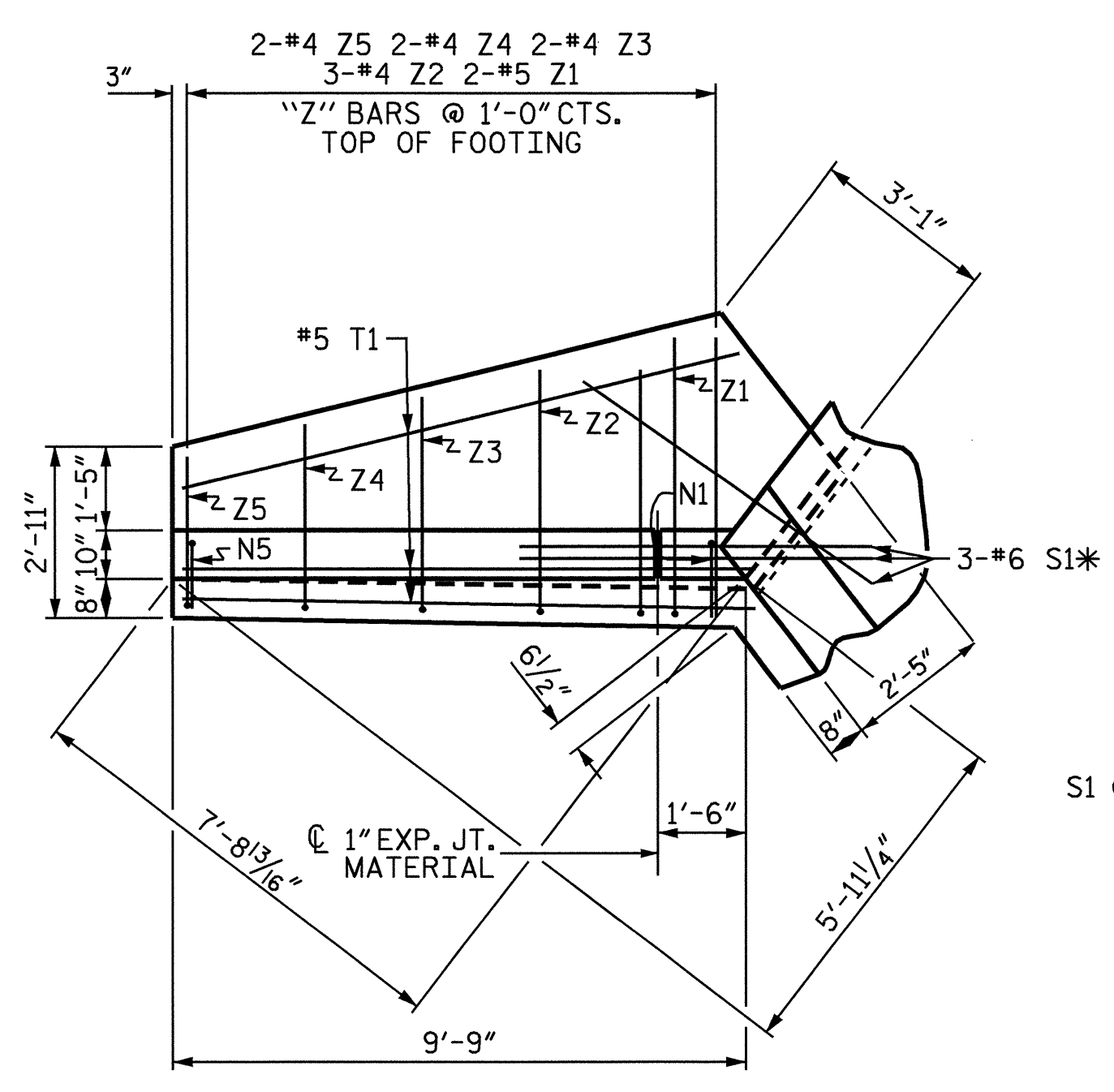
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE BARREL
CONCRETE BOX CULVERT
LEFT AND RIGHT
EXTENSIONS

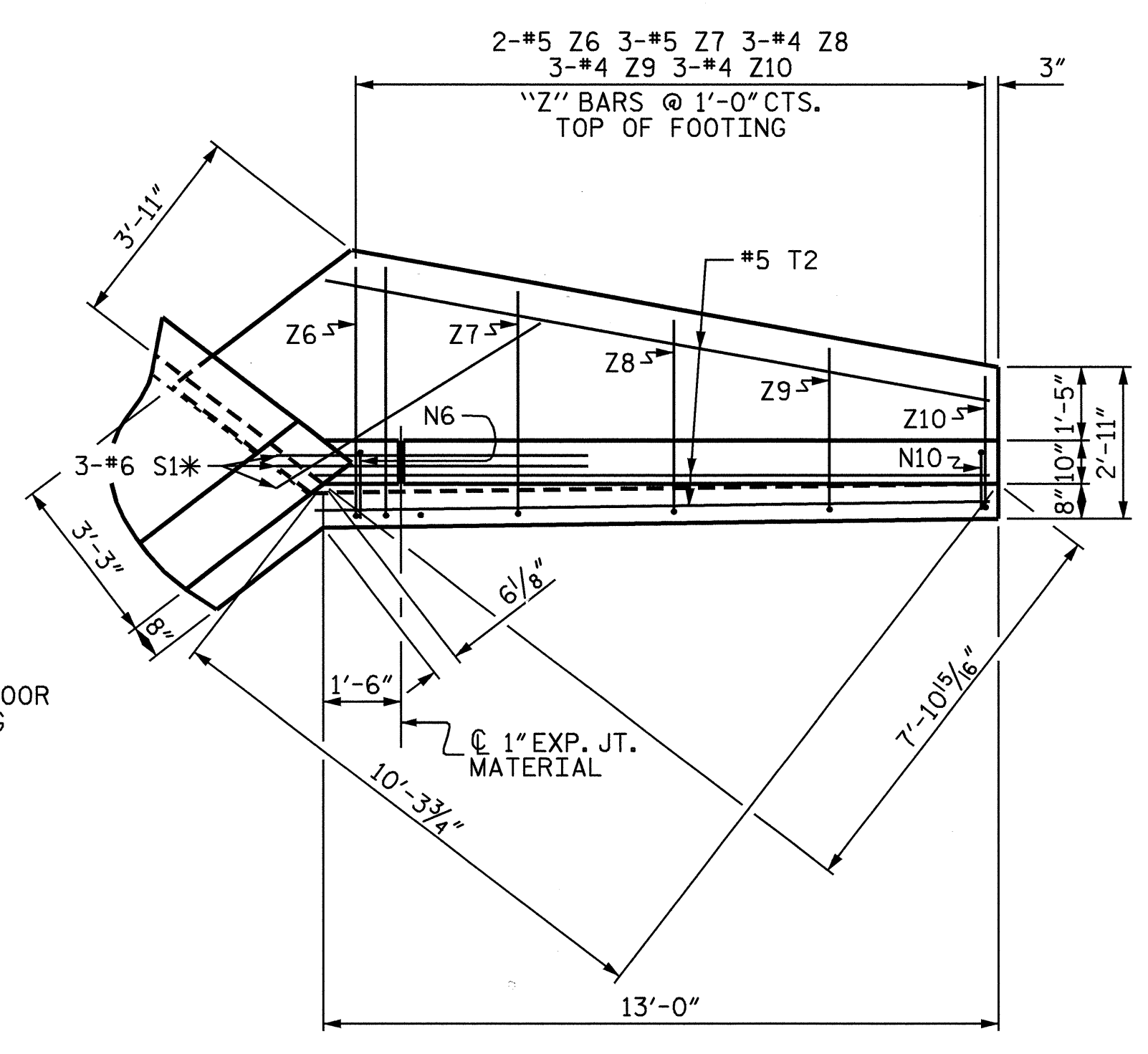
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-12
1			3			TOTAL SHEETS
2			4			14



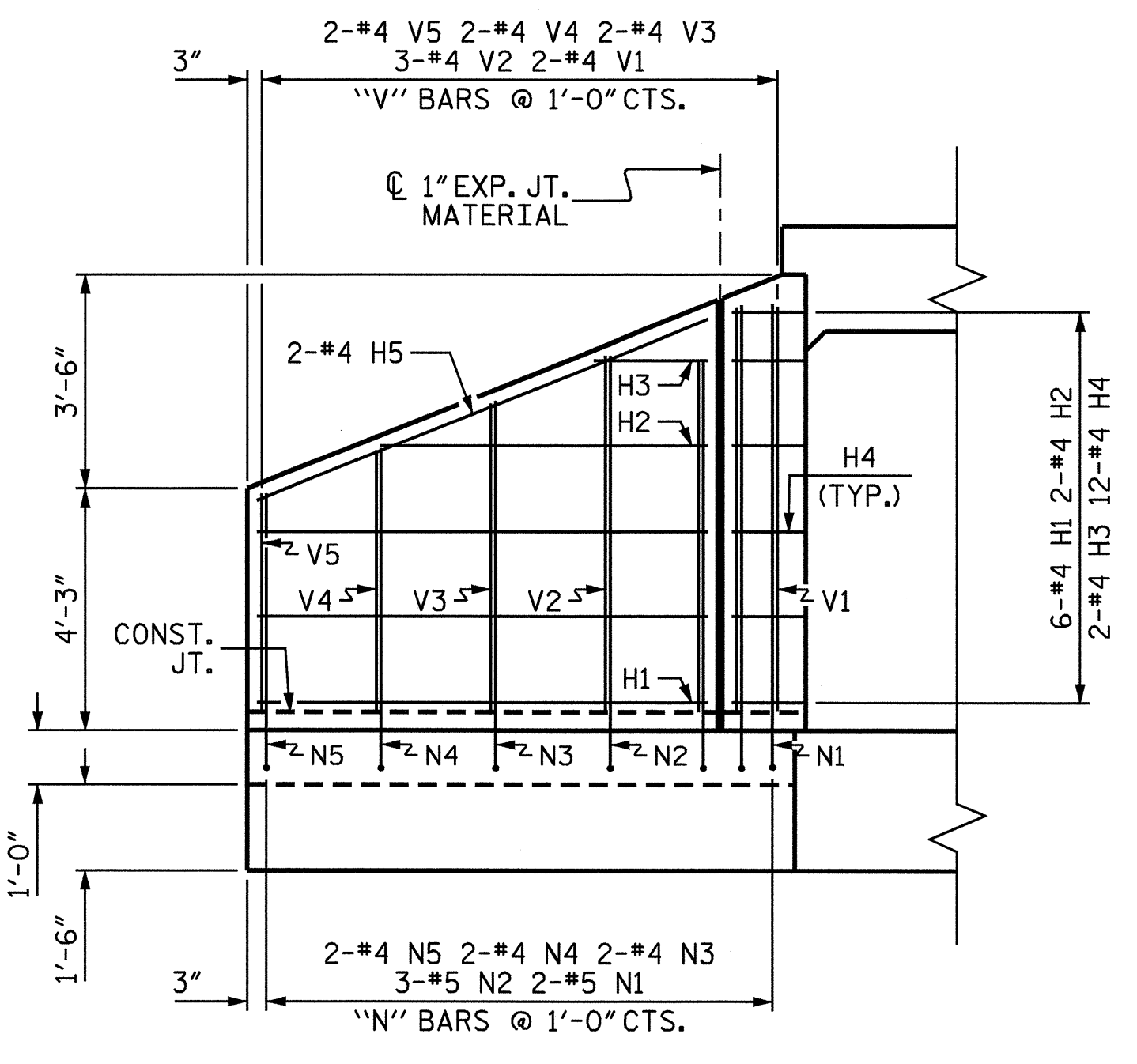
DRAWN BY : B.N. GRADY DATE : 7-08
CHECKED BY : J.D. HAWK DATE : 8-08



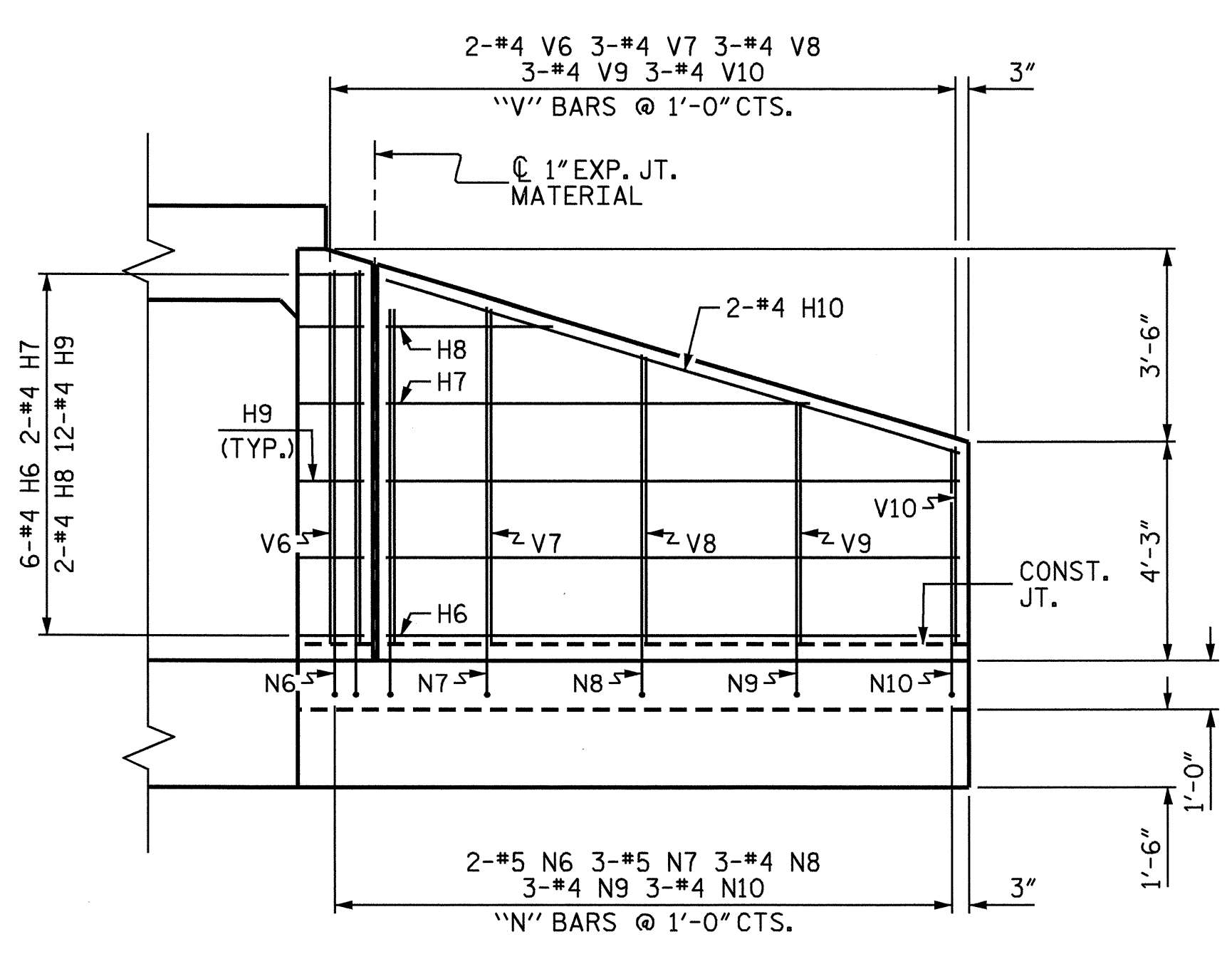
PLAN W2



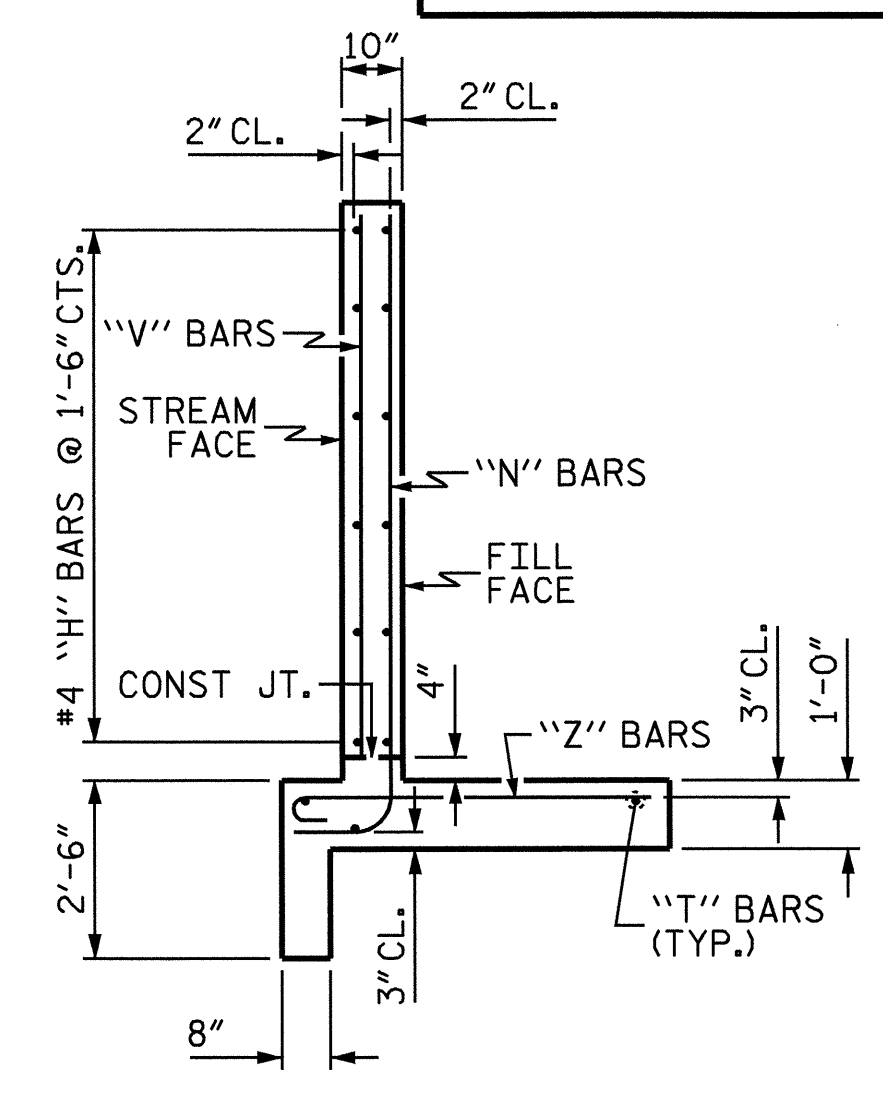
PLAN W1



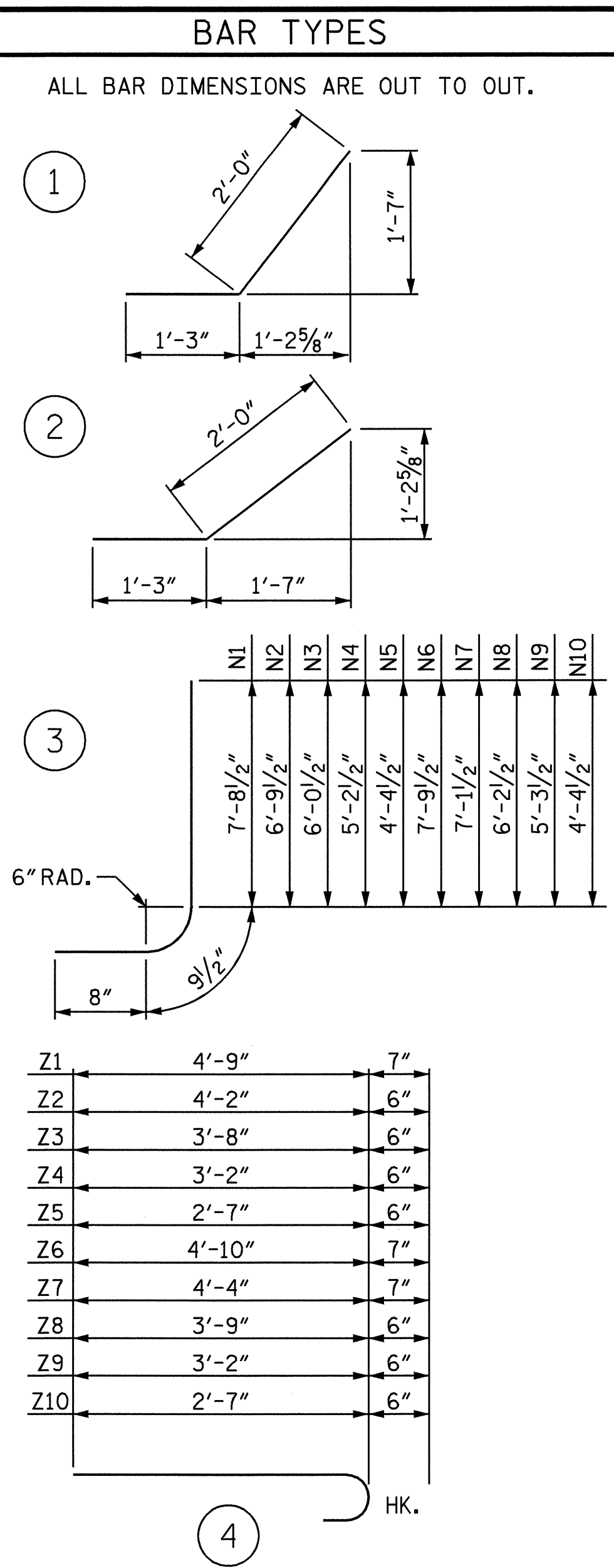
ELEVATION W2



ELEVATION W1



TYPICAL WING SECTION

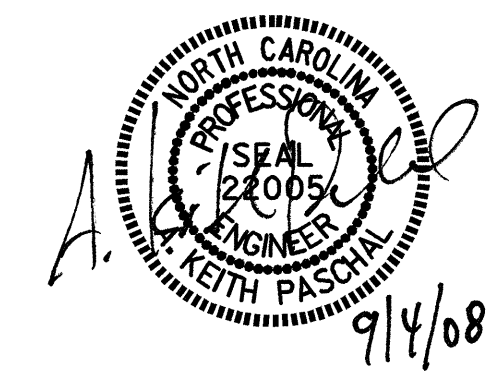


BAR TYPES					BILL OF MATERIAL						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	7'-10"	31	N1	2	#5	3	9'-2"	19
H2	2	#4	STR	5'-8"	8	N2	3	#5	3	8'-3"	26
H3	2	#4	STR	2'-0"	3	N3	2	#4	3	7'-6"	10
H4	12	#4	1	3'-3"	26	N4	2	#4	3	6'-8"	9
H5	2	#4	STR	8'-5"	11	N5	2	#4	3	5'-10"	8
H6	6	#4	STR	11'-1"	44	N6	2	#5	3	9'-3"	19
H7	2	#4	STR	8'-2"	11	N7	3	#5	3	8'-7"	27
H8	2	#4	STR	3'-3"	4	N8	3	#4	3	7'-8"	24
H9	12	#4	2	3'-3"	26	N9	3	#4	3	6'-9"	14
H10	2	#4	STR	11'-7"	15	N10	3	#4	3	5'-10"	12
						S1	6	#6	STR	6'-0"	54
						T1	3	#5	STR	9'-9"	31
						T2	3	#5	STR	13'-0"	41
						V1	2	#4	STR	7'-1"	9
						V2	3	#4	STR	6'-3"	13
						V3	2	#4	STR	5'-5"	7
						V4	2	#4	STR	4'-7"	6
						V5	2	#4	STR	3'-10"	5
						V6	2	#4	STR	7'-3"	10
						V7	3	#4	STR	6'-6"	13
						V8	3	#4	STR	5'-7"	11
						V9	3	#4	STR	4'-8"	9
						V10	3	#4	STR	3'-10"	8
						Z1	2	#5	4	5'-4"	11
						Z2	3	#4	4	4'-8"	9
						Z3	2	#4	4	4'-2"	6
						Z4	2	#4	4	3'-8"	5
						Z5	2	#4	4	3'-1"	4
						Z6	2	#5	4	5'-5"	11
						Z7	3	#5	4	4'-11"	15
						Z8	3	#4	4	4'-3"	9
						Z9	3	#4	4	3'-8"	7
						Z10	3	#4	4	3'-1"	6
						REINFORCING STEEL				468	LBS
						FOR 2 WINGS					
						CLASS A CONCRETE					
						2 WINGS				9.1	CY
						1 HEADWALL				0.3	CY
						1 END CURTAIN WALL				0.2	CY
						TOTAL				9.6	CY

ASSEMBLED BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08
 DRAWN BY : CCJ 12/99
 CHECKED BY : RWW 03/00

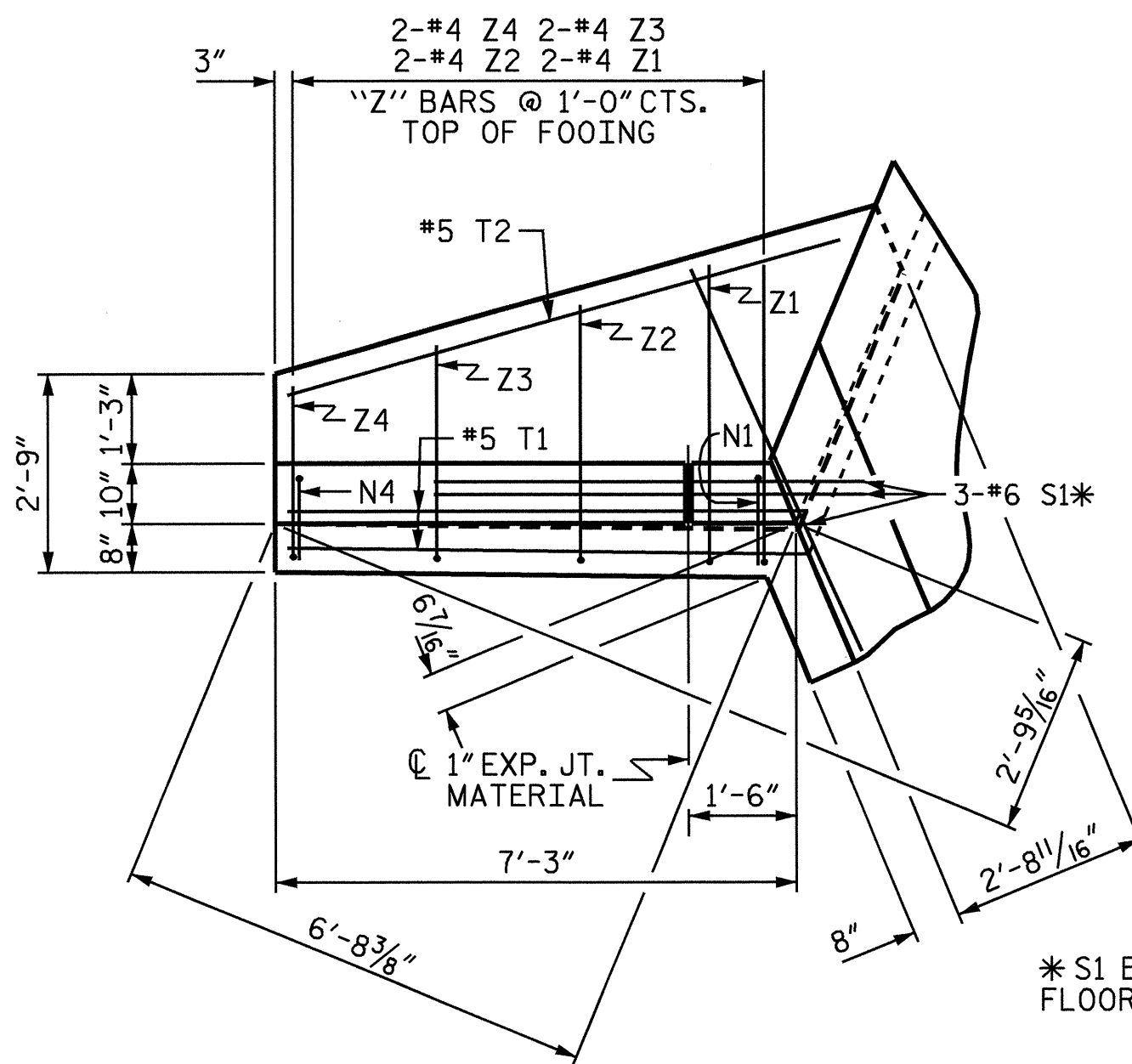
PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 201+86.00 -L-
 SHEET 6 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD WINGS FOR
 CONCRETE BOX CULVERT
 -LEFT EXTENSION-
 H = 7'-0" SLOPE = 2:1
 75° SKEW

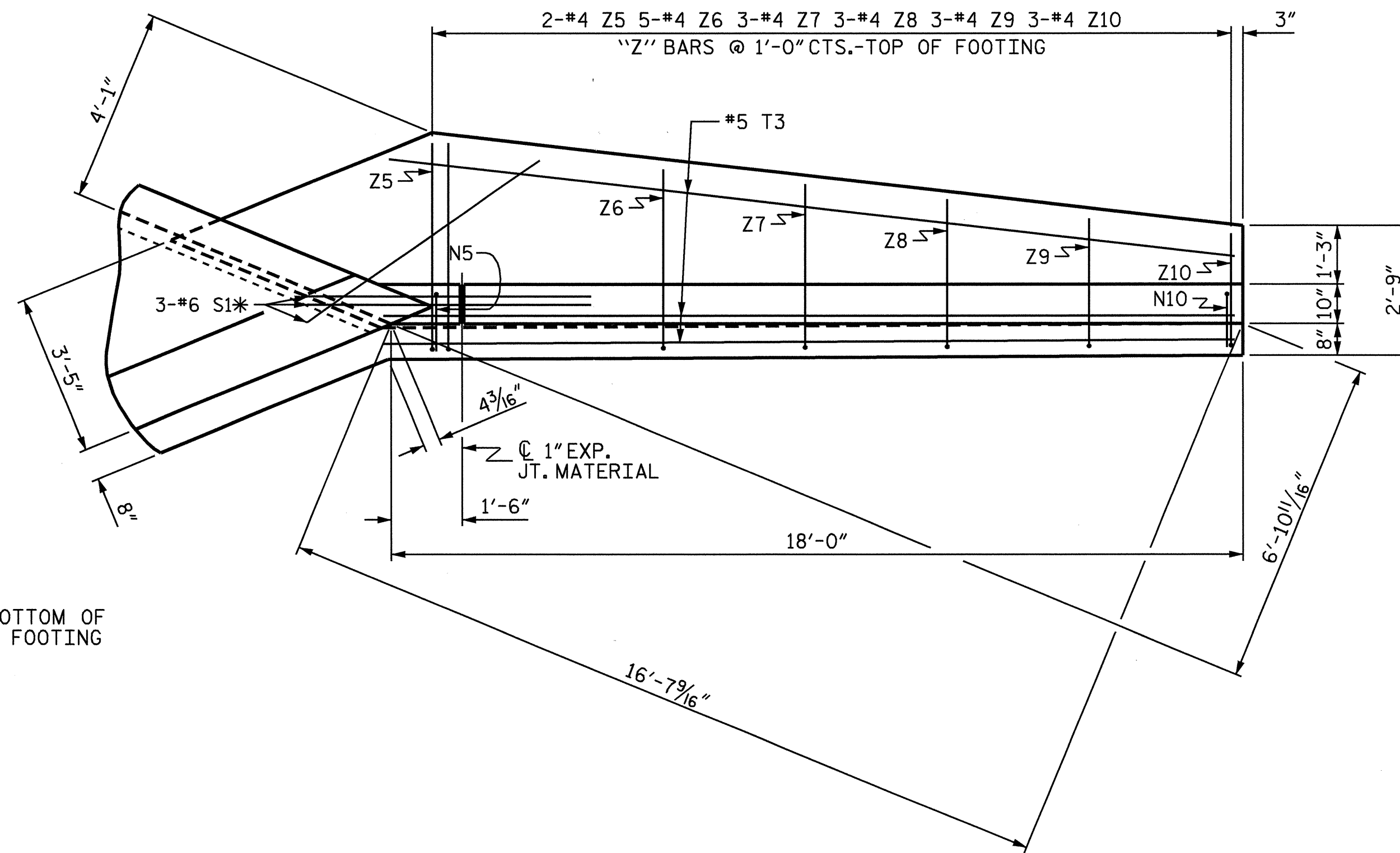


REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

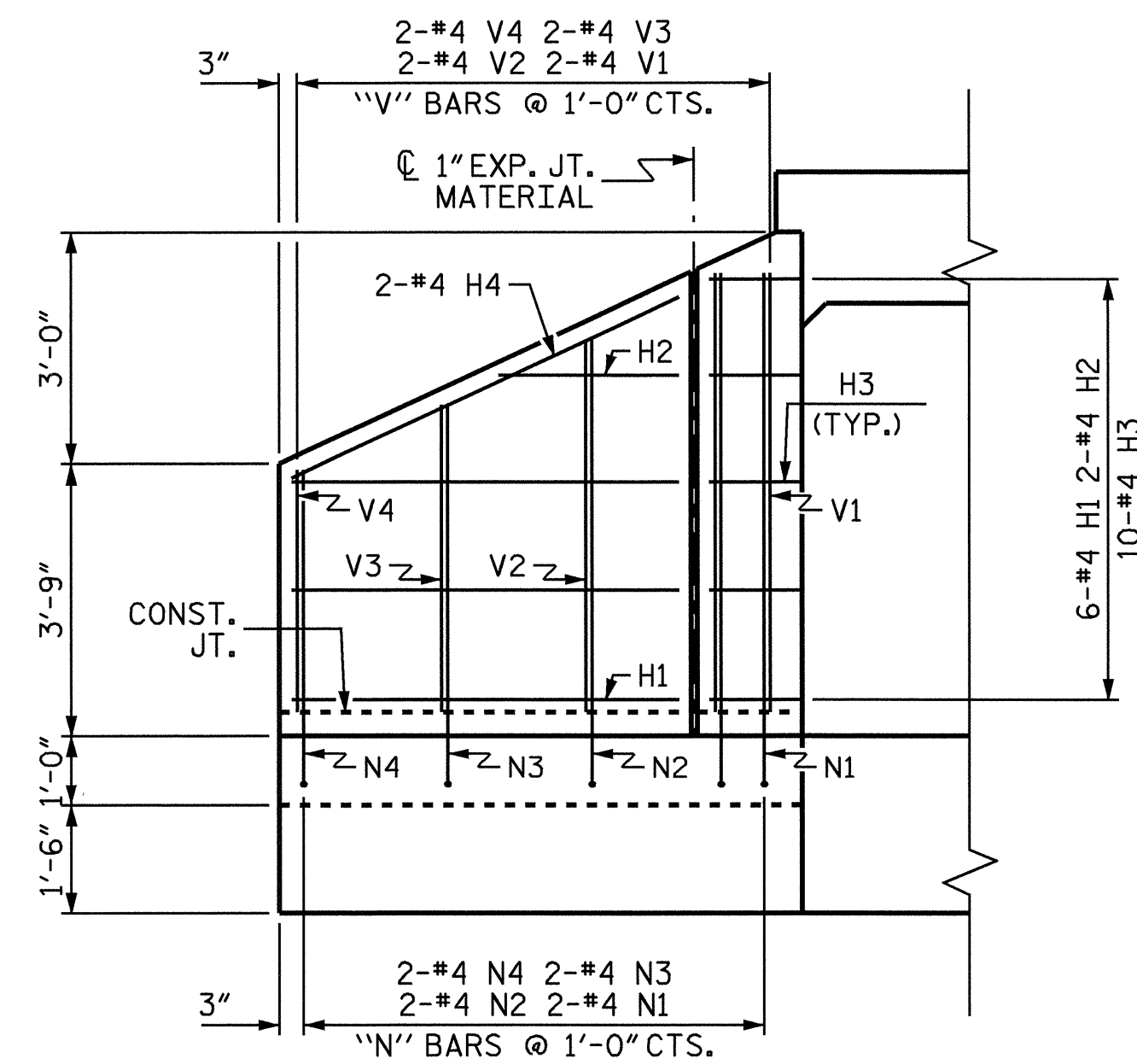
TOTAL SHEETS: 14



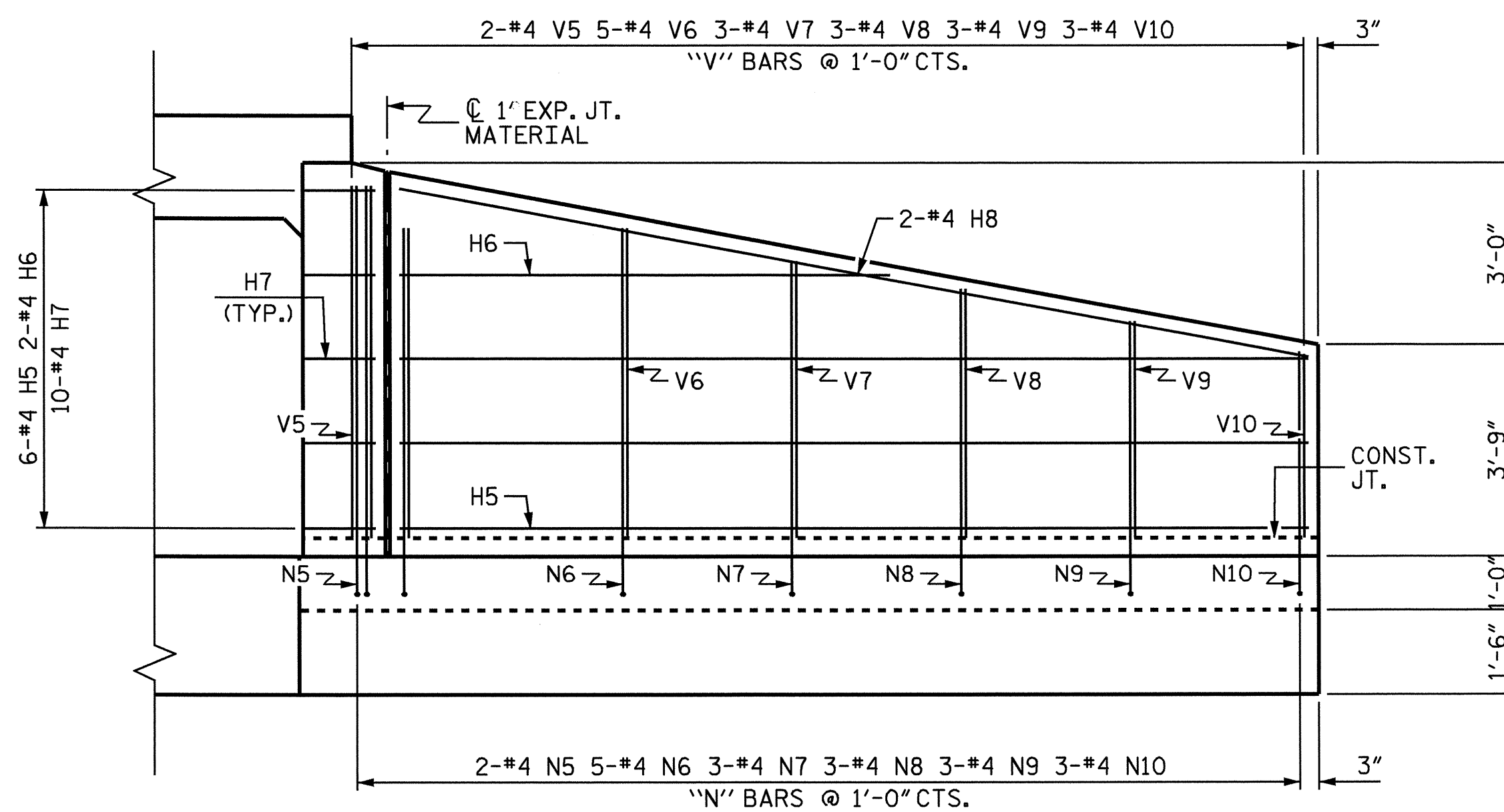
PLAN W2



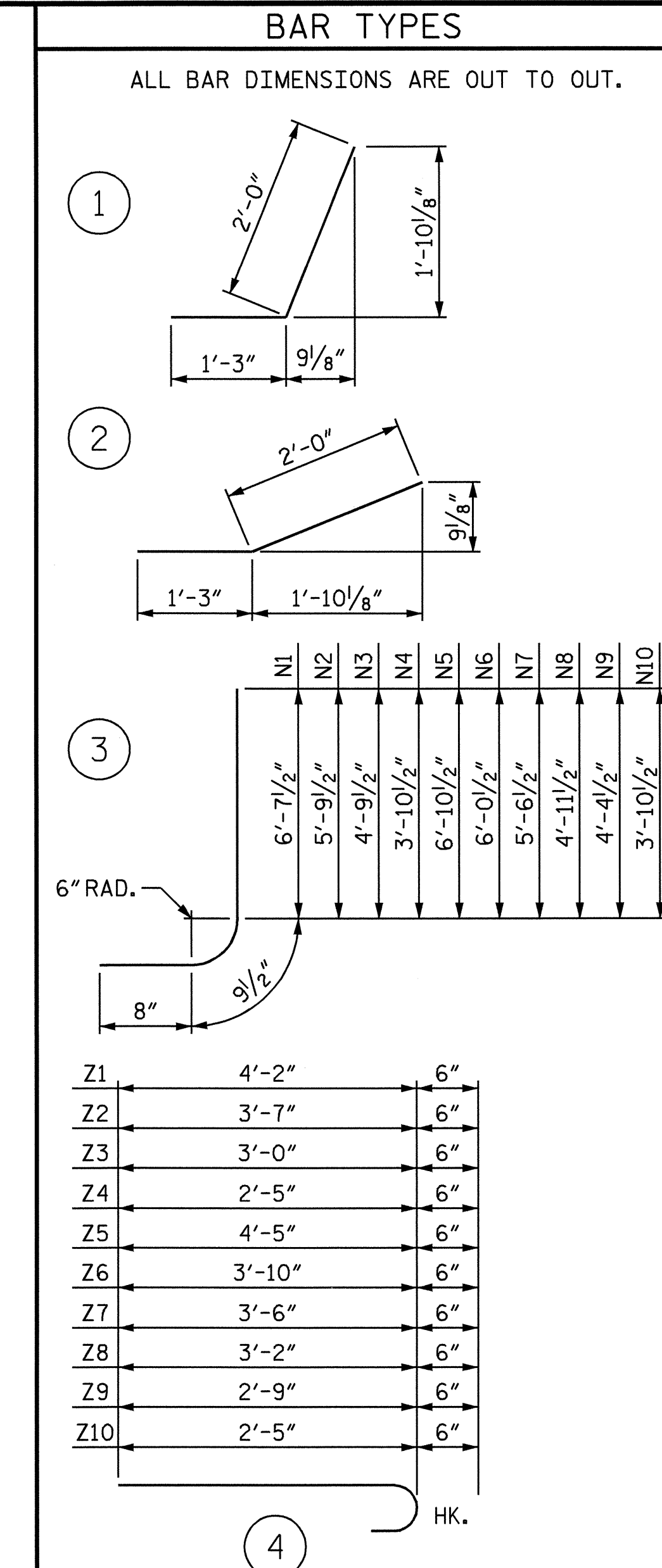
PLAN W1



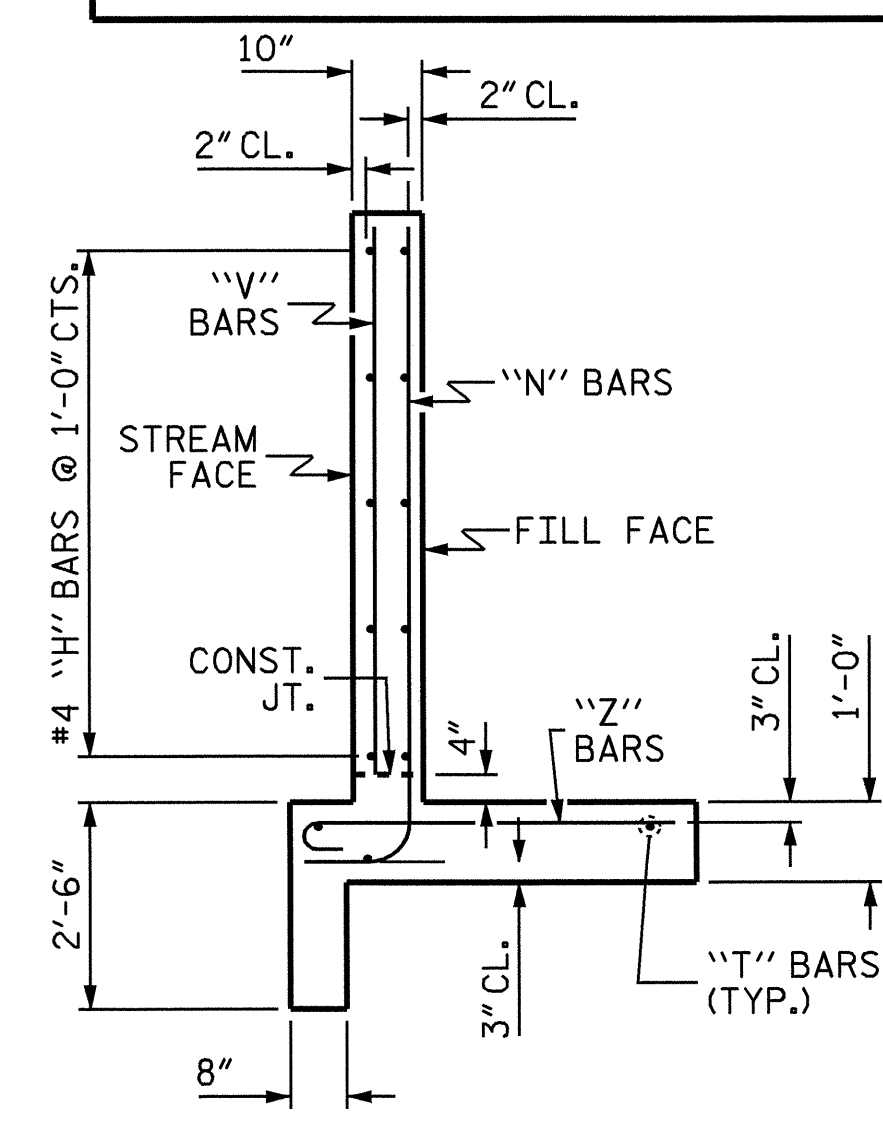
ELEVATION W2



ELEVATION W1



BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	5'-4"	21
H2	2	#4	STR	2'-6"	3
H3	10	#4	1	3'-3"	22
H4	2	#4	STR	5'-11"	8
H5	6	#4	STR	16'-1"	64
H6	2	#4	STR	8'-8"	12
H7	10	#4	2	3'-3"	22
H8	2	#4	STR	16'-4"	22
N1	2	#4	3	8'-1"	11
N2	2	#4	3	7'-3"	10
N3	2	#4	3	6'-3"	8
N4	2	#4	3	5'-4"	7
N5	2	#4	3	8'-4"	11
N6	5	#4	3	7'-6"	25
N7	3	#4	3	7'-0"	14
N8	3	#4	3	6'-5"	13
N9	3	#4	3	5'-10"	12
N10	3	#4	3	5'-4"	11
S1	6	#6	STR	6'-0"	54
T1	2	#5	STR	7'-3"	15
T2	1	#5	STR	8'-0"	8
T3	3	#5	STR	18'-0"	56
V1	2	#4	STR	6'-1"	8
V2	2	#4	STR	5'-2"	7
V3	2	#4	STR	4'-3"	6
V4	2	#4	STR	3'-4"	4
V5	2	#4	STR	6'-3"	8
V6	5	#4	STR	5'-6"	18
V7	3	#4	STR	4'-11"	10
V8	3	#4	STR	4'-5"	9
V9	3	#4	STR	3'-10"	8
V10	3	#4	STR	3'-3"	7
Z1	2	#4	4	4'-8"	6
Z2	2	#4	4	4'-1"	5
Z3	2	#4	4	3'-6"	5
Z4	2	#4	4	2'-11"	4
Z5	2	#4	4	4'-11"	7
Z6	5	#4	4	4'-4"	14
Z7	3	#4	4	4'-0"	8
Z8	3	#4	4	3'-8"	7
Z9	3	#4	4	3'-3"	7
Z10	3	#4	4	2'-11"	6
REINFORCING STEEL FOR 2 WINGS					583 LBS
CLASS A CONCRETE					
2 WINGS					9.3 CY
1 HEADWALL					0.3 CY
1 END CURTAIN WALL					0.3 CY
TOTAL					9.9 CY

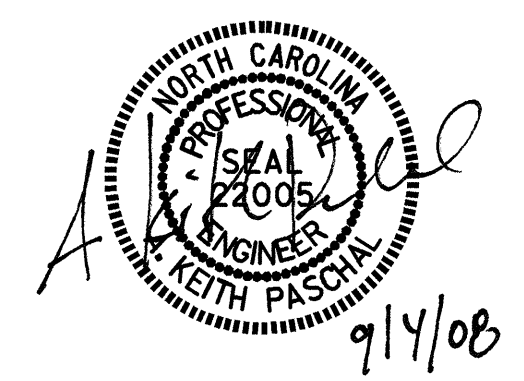


TYPICAL WING SECTION

PROJECT NO. A-0011BB
CLAY COUNTY
 STATION: 201+86.00 -L-

SHEET 7 OF 7
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD WINGS FOR
 CONCRETE BOX CULVERT
 -RIGHT EXTENSION-
 H = 6'-0" SLOPE = 2:1
 135° SKEW

ASSEMBLED BY : B.N. GRADY DATE : 7-08
 CHECKED BY : J.D. HAWK DATE : 8-08
 DRAWN BY : CCJ 01/00
 CHECKED BY : RWW 03/00



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-14
1			3			TOTAL SHEETS
2			4			14

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.

ENGLISH

JANUARY, 1990

STD. NO. SN