

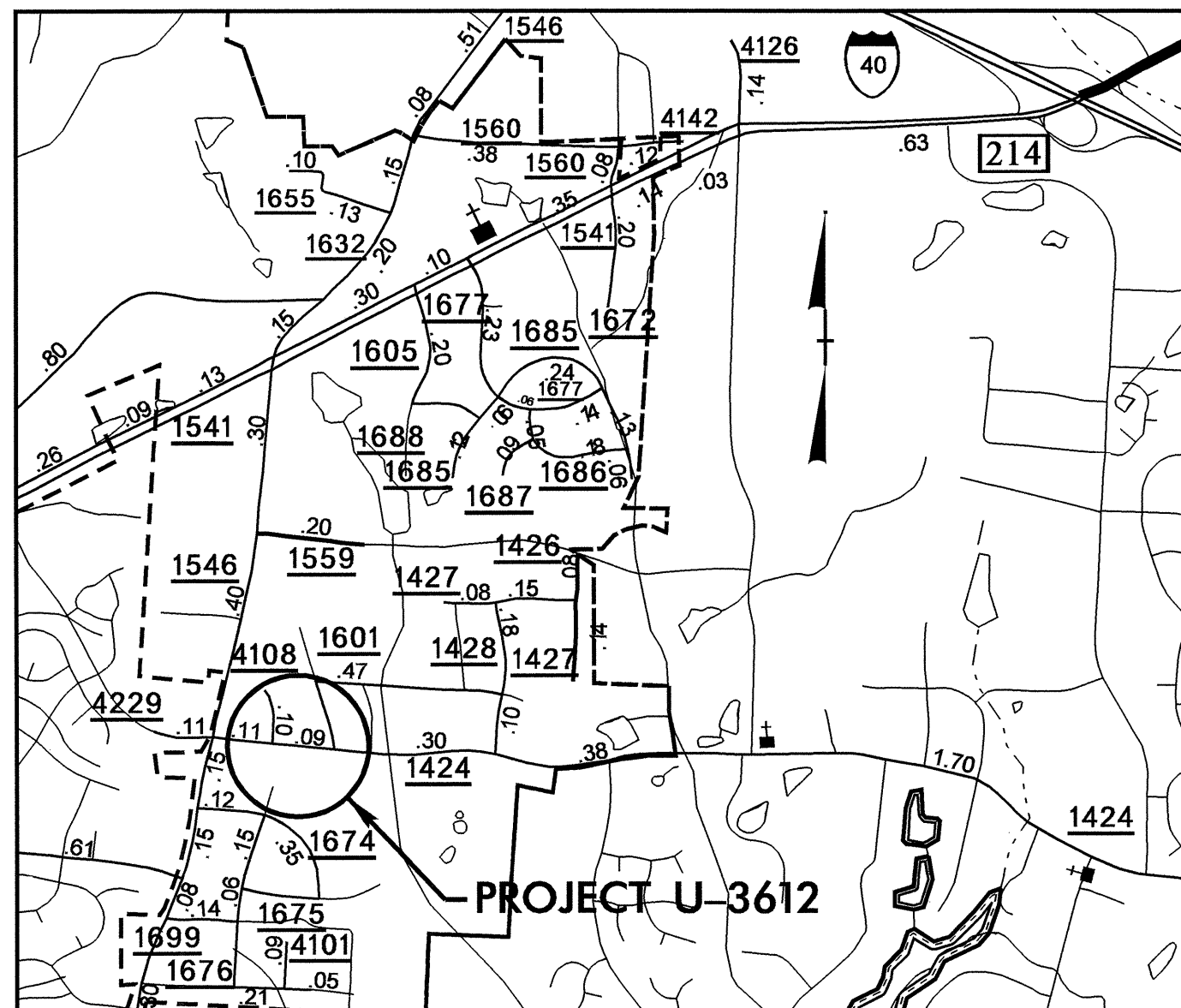
TIP PROJECT: U-3612
CONTRACT: C201328

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

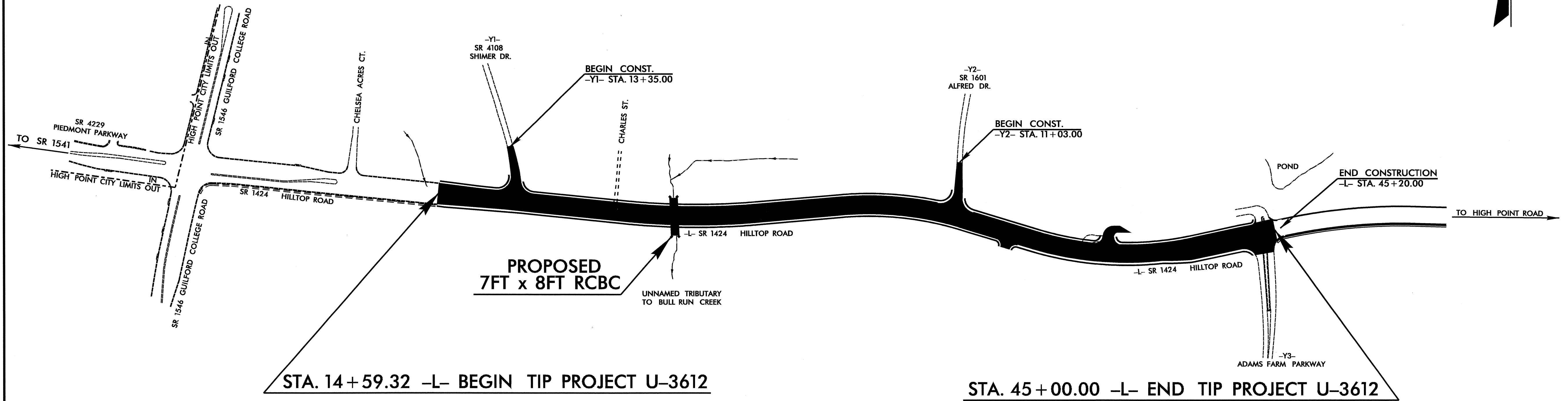
GUILFORD COUNTY

LOCATION: GREENSBORO - SR 1424 (HILLTOP ROAD) FROM EAST OF SR 1546 (GUILFORD COLLEGE ROAD) AT CHELSEA ACRES COURT TO ADAMS FARM PARKWAY
TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB & GUTTER, GUARDRAIL, CULVERT, AND SIGNALS

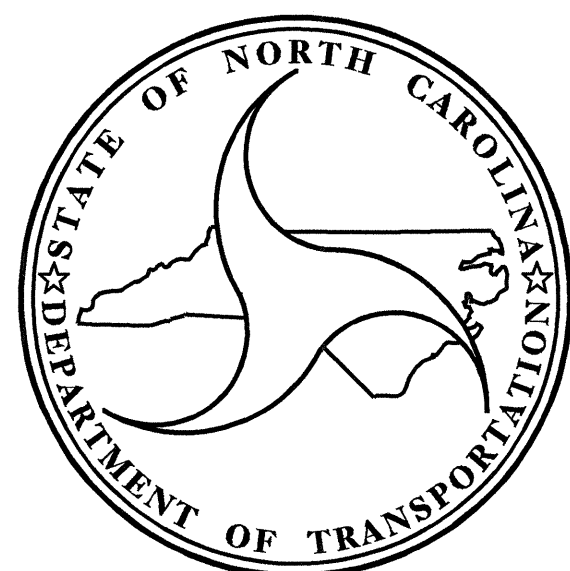
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3612		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34960.1.1	STP-1424(3)	PE	
34960.2.1	STP-1424(3)	RAW & UTILITIES	
34960.3.1	STP-1424(5)	CONST.	



VICINITY MAP



CULVERT



DESIGN DATA

ADT 2005 = 16040
 ADT 2025 = 19800
 DHV = 10 %
 D = 55 %
 T = 5 % *
 V = 40 MPH
 * TTST-1% DUAL=4%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3612 = 0.576 MI
 TOTAL LENGTH OF TIP PROJECT U-3612 = 0.576 MI.

Prepared In the Office of:
DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

LETTING DATE:
 JANUARY 16, 2007

R. M. GIROLAMI, PE
 PROJECT ENGINEER

L. E. SUTTON, PE
 PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT
 1000 Birch Ridge Dr.
 Raleigh NC, 27610



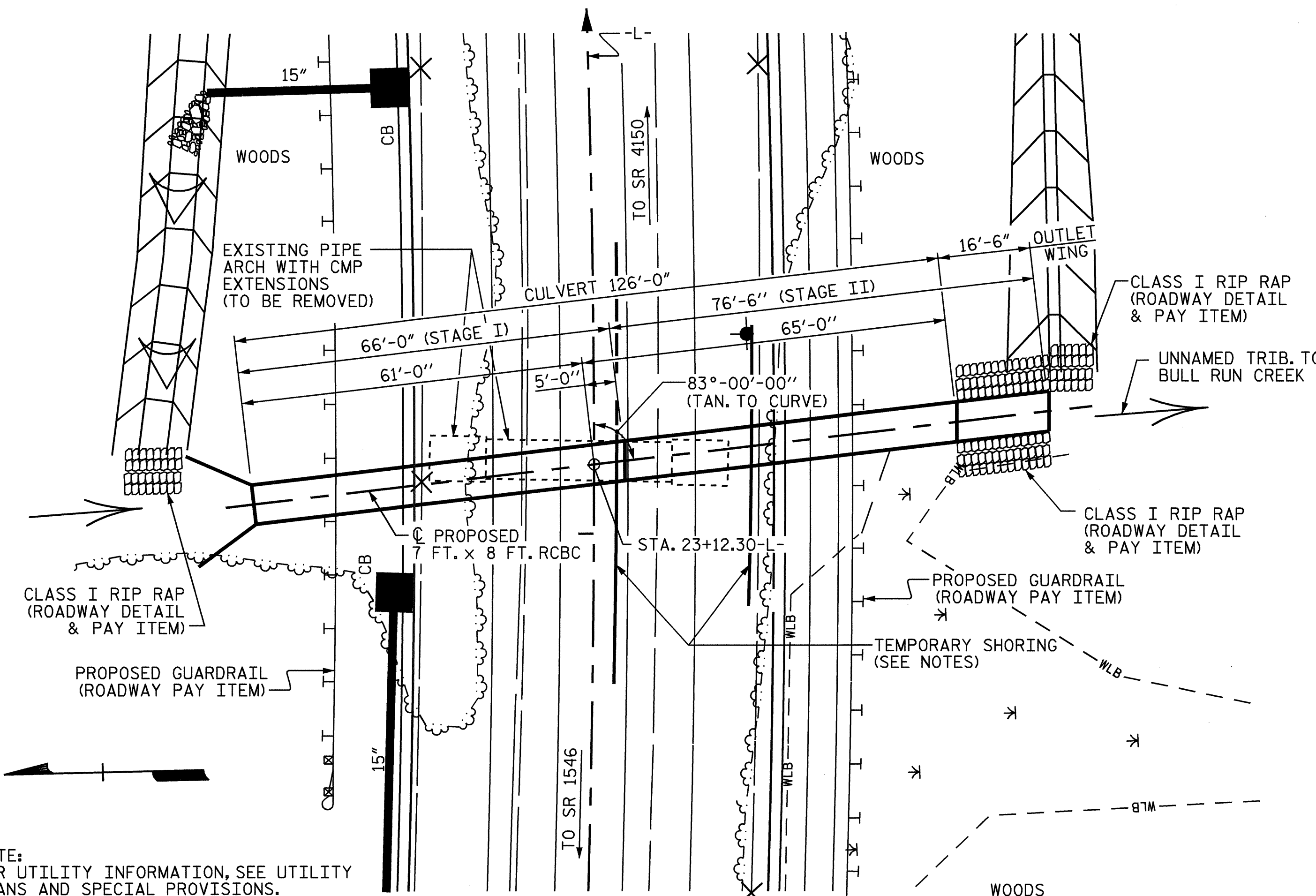
Gregory R. Penwell
 11.27.06

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

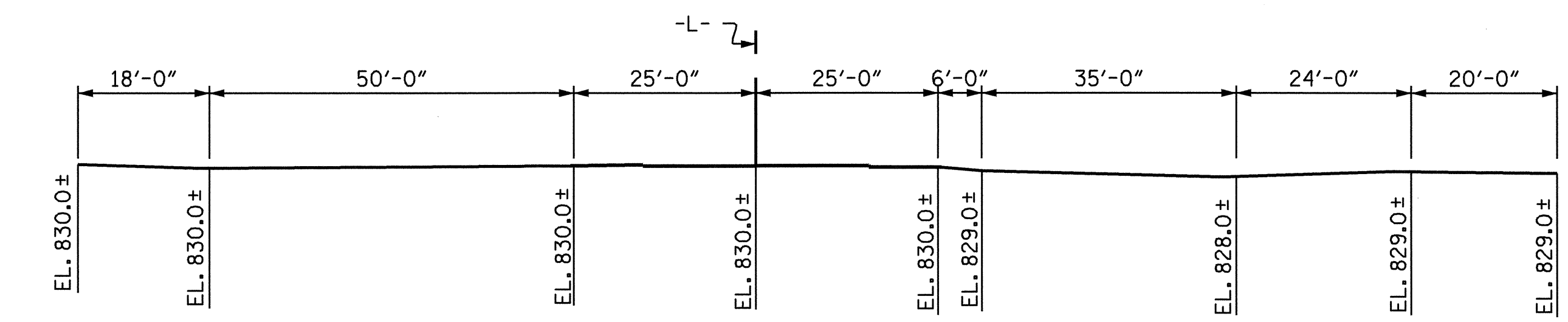
STATE DESIGN ENGINEER
 DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED
 DIVISION ADMINISTRATOR DATE

14-AUG-2006 10:48
 \$\$\$\$\$\$DCN\$\$\$\$\$
 isutton



LOCATION SKETCH



PROFILE ALONG CULVERT

HYDROGRAPHIC DATA

DESIGN DISCHARGE =	370 C.F.S.
DESIGN HIGH WATER ELEVATION =	836.1
DRAINAGE AREA =	0.32 SQ. MI.
BASIC DISCHARGE (Q100) =	500 C.F.S.
BASIC HIGH WATER ELEVATION =	838.4

OVERTOPPING FLOOD DATA

OERTOPPING DISCHARGE =	>700 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD =	500+ YRS.
OVERTOPPING FLOOD EL. =	844.8

GRADE DATA

GRADE POINT EL. @ STA. 23+12.30 -L- =	843.457
BED ELEV. @ STA. 23+12.30 -L- =	828.410
ROADWAY SLOPES =	2:1

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
BARREL @ 0.811 CY/FT	102.2 C.Y.
APRON, ETC.	4.0 C.Y.
INLET WINGS, ETC.	11.4 C.Y.
OUTLET WINGS, ETC.	4.7 C.Y.
EDGE BEAMS	1.2 C.Y.
TOTAL	123.5 C.Y.
REINFORCING STEEL	
BARREL/APRON	13,676 LBS.
INLET WINGS, ETC.	721 LBS.
OUTLET WINGS, ETC.	675 LBS.
TOTAL	15,072 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MAT'L.	84 TONS
REMOVAL OF EXISTING STRUCTURE	LUMP SUM

NOTES

- ASSUMED LIVE LOAD HS20 OR ALTERNATE LOADING.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- DESIGN FILL = 7.9'
- FOR OTHER DESIGN DATA AND NOTES, SEE SHEET SN.
- 3" DIA. WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 - INLET WING FOOTING AND STAGE I FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 - THE REMAINING PORTIONS OF STAGE I WALLS AND INLET WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.
 - OUTLET WING APRON AND STAGE II FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 - THE REMANDING PORTIONS OF STAGE II WALLS AND OUTLET WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALL.
- 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 SHEETS.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
- 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.
- AT THE CONTRACTOR'S OPTION, THE VERTICAL CONSTRUCTION JOINT BETWEEN THE OUTLET WINGS AND THE BARREL MAY BE ELIMINATED AND THE "C" BARS IN THE BARREL MAY BE EXTENDED TO REPLACE THE "D" AND "H" BARS IN THE WINGS.
- 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 SAMPLE 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.
- 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 LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEMS FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

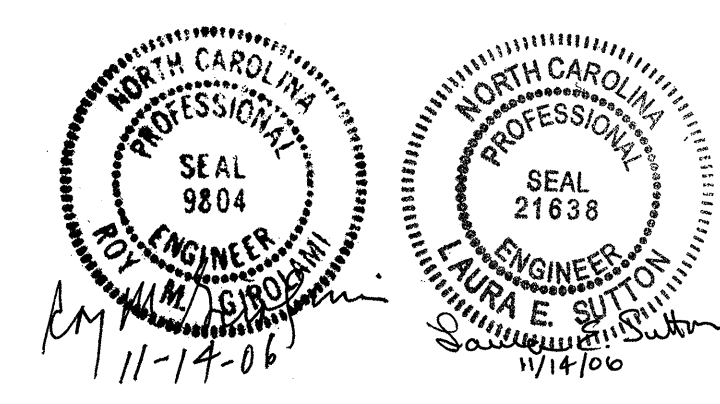
PROJECT NO. U-3612
GUILFORD COUNTY
 STATION: 23+12.30 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

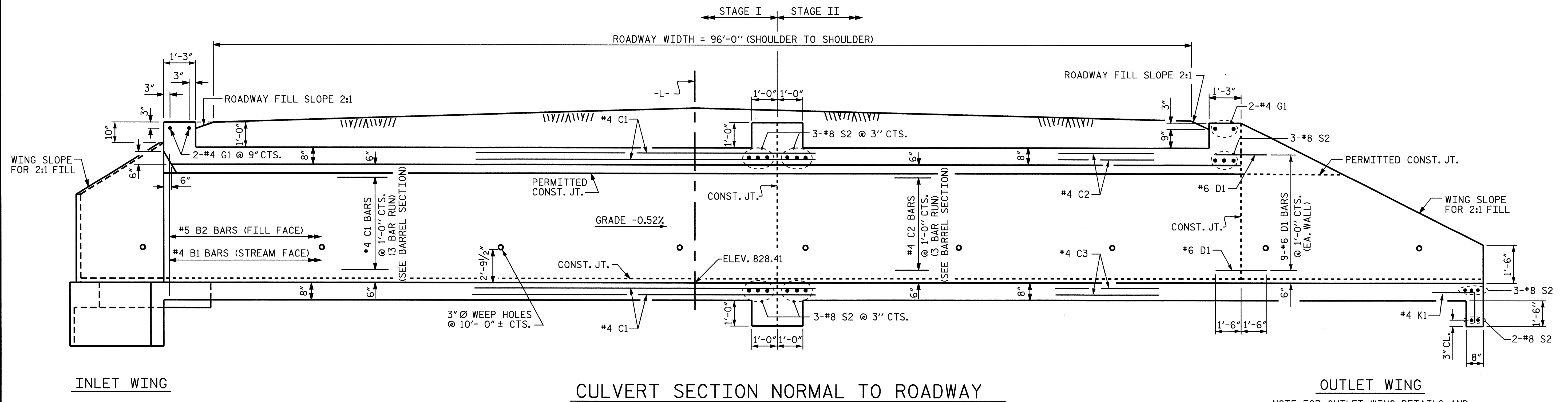
SINGLE 7 FT. x 8 FT.
 CONCRETE BOX CULVERT

83° SKEW

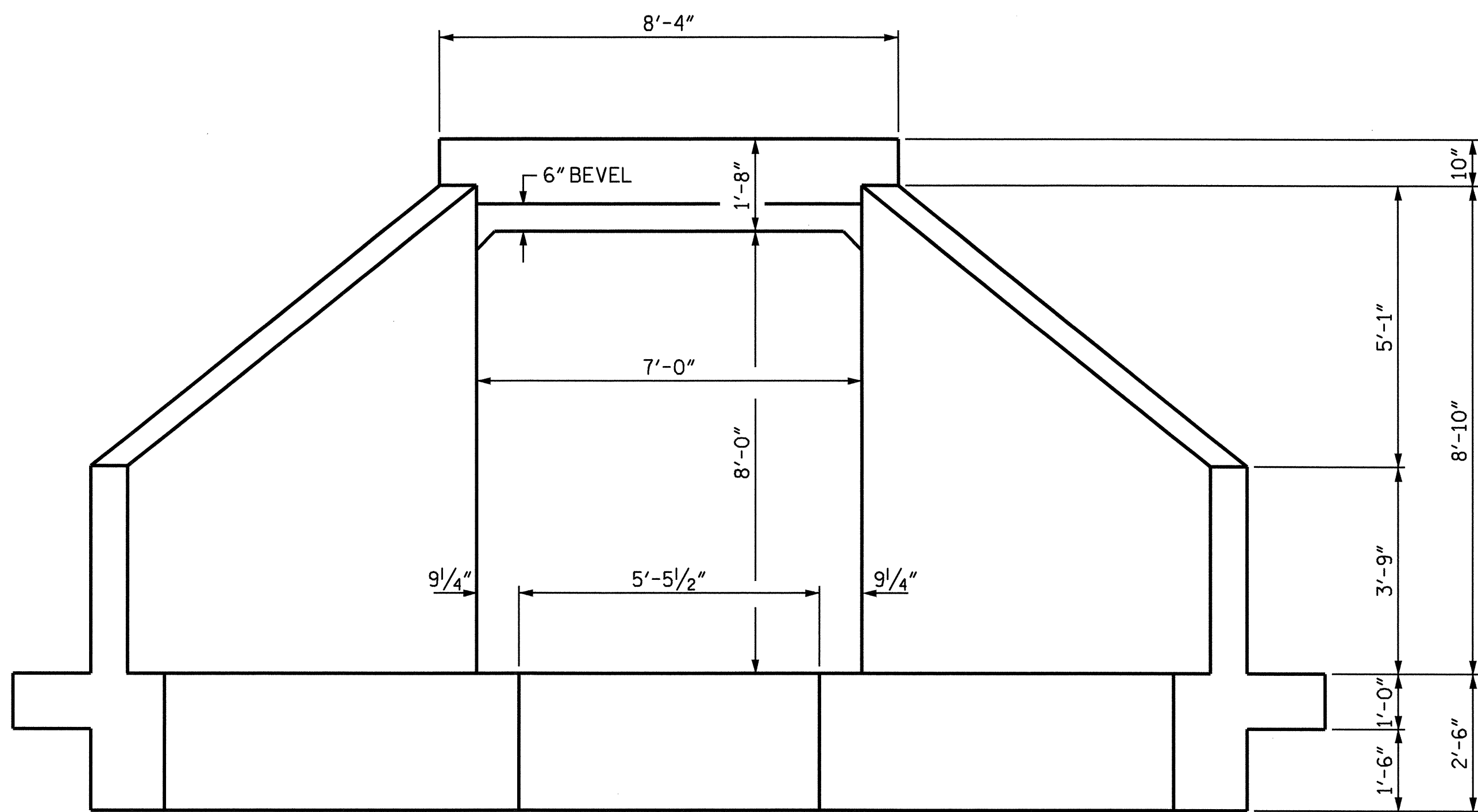


REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1	
1			3			TOTAL SHEETS	
2			4			6	

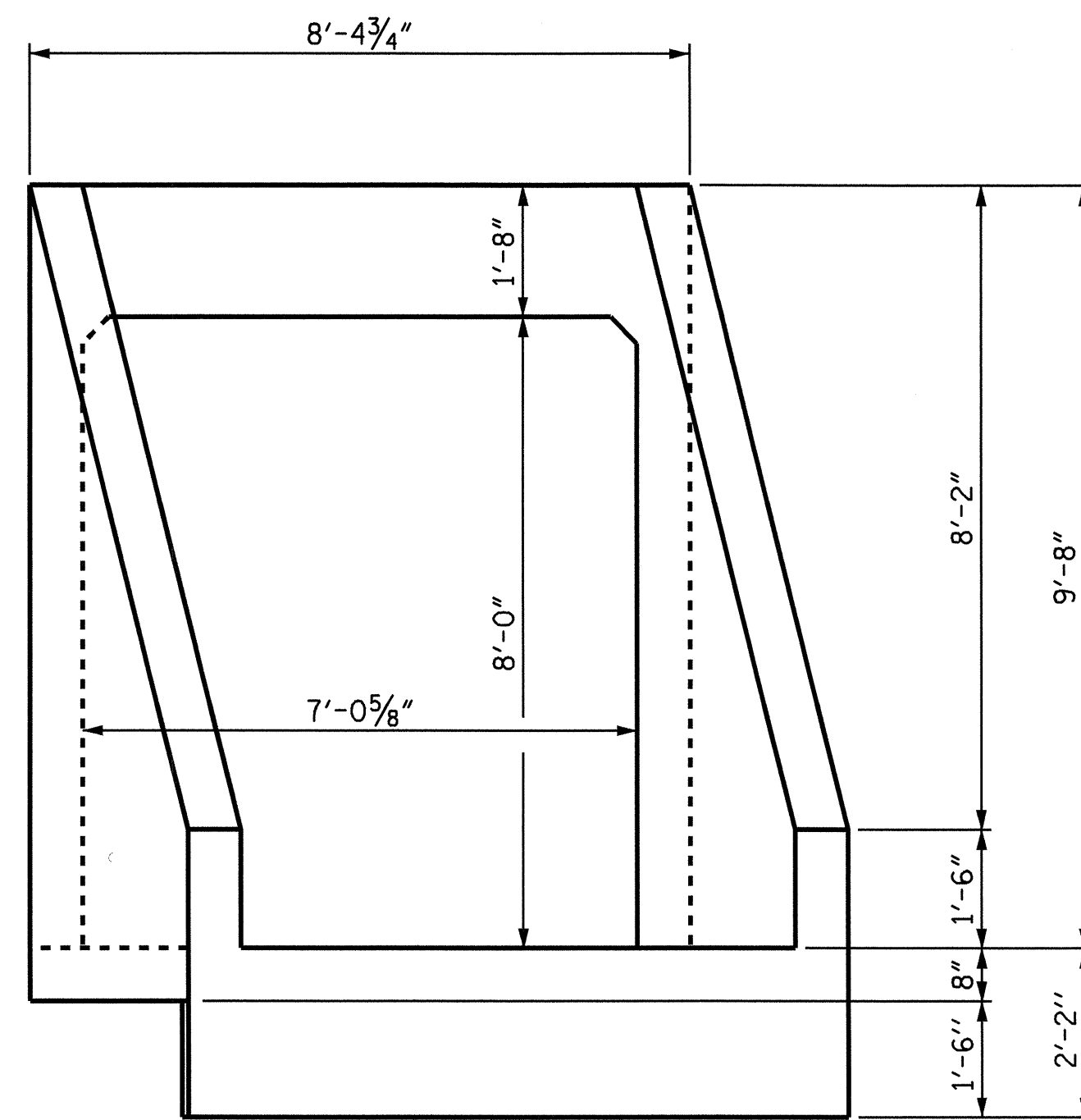
DRAWN BY: A.S. CALLAWAY DATE: 7/28/04
 CHECKED BY: P.C. BREWER DATE: 2/1/05



NOTE: FOR OUTLET WING DETAILS AND REINFORCING STEEL, SEE SHEET 6 OF 6.



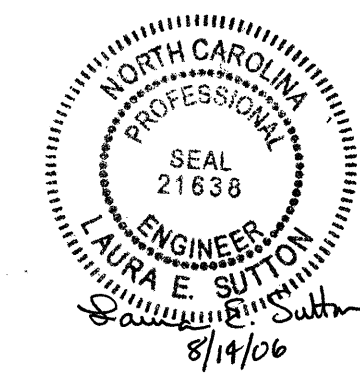
INLET END ELEVATION



OUTLET END ELEVATION-NORMAL TO SKEW

PROJECT NO. U-3612
GUILFORD COUNTY
 STATION: 23+12.30 -L-
 SHEET 2 OF 6

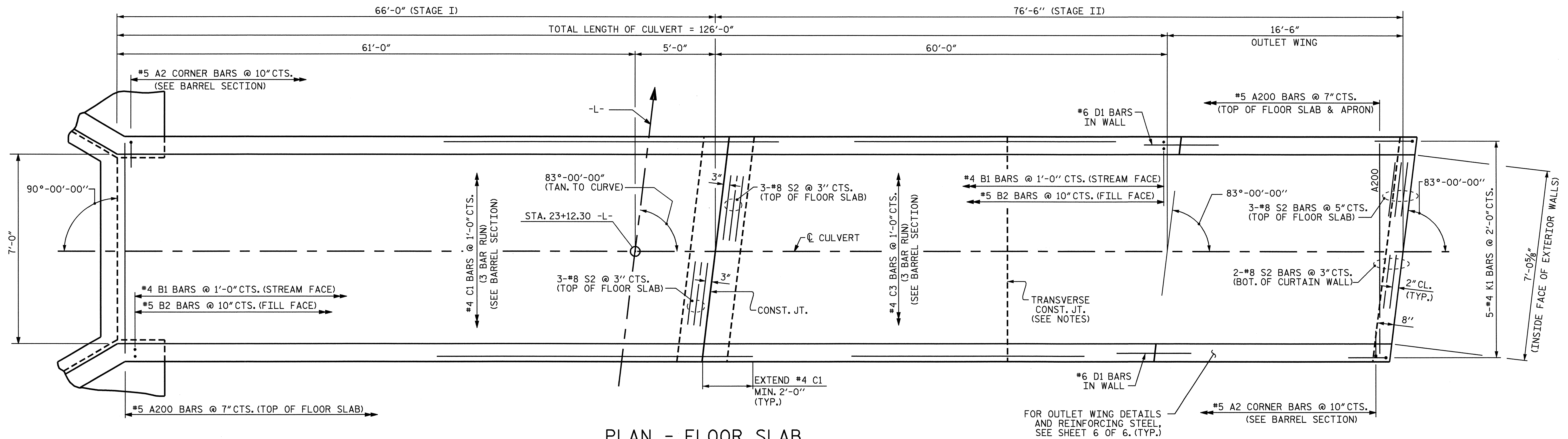
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 7 FT. X 8 FT.
 CONCRETE BOX CULVERT
 83° SKEW



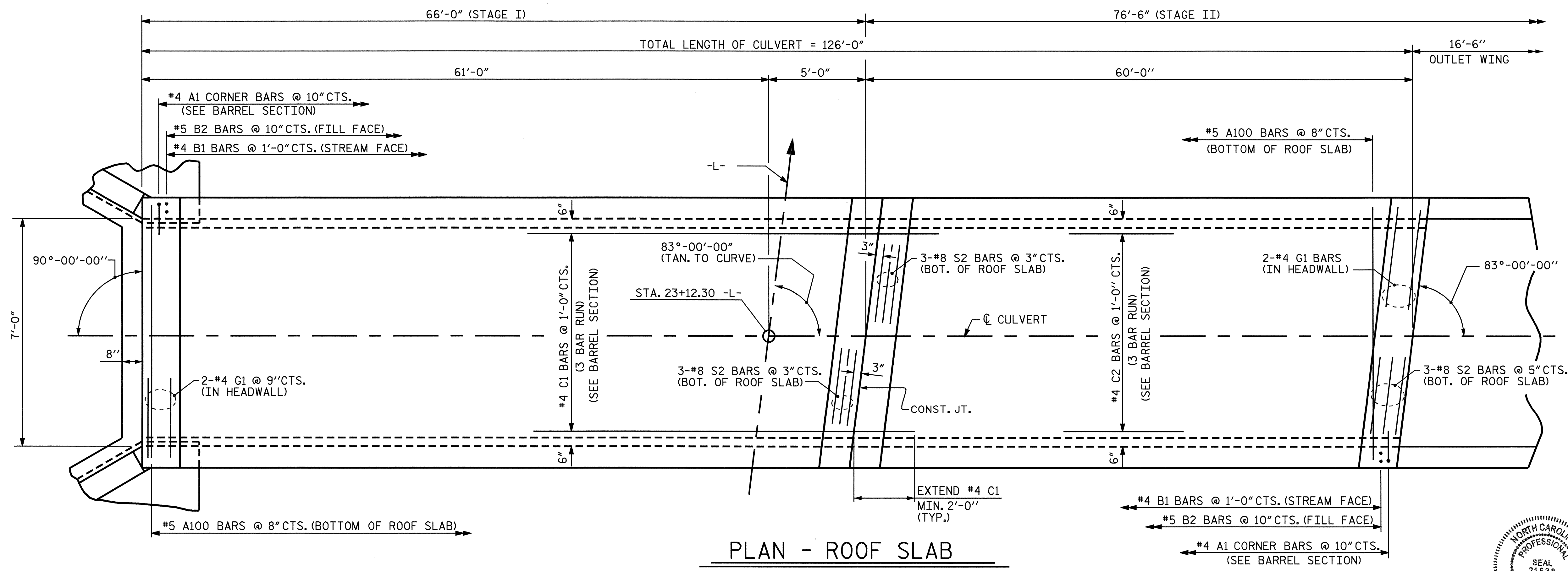
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NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			6

DRAWN BY: A.S. CALLAWAY DATE: 7/28/04
 CHECKED BY: P.C. BREWER DATE: 2/1/05

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PLAN - FLOOR SLAB



PLAN - ROOF SLAB

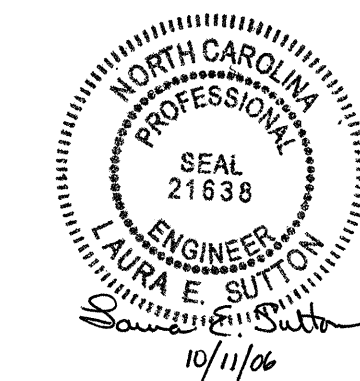
PROJECT NO. U-3612
GUILFORD COUNTY
 STATION: 23+12.30 -L-
 SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SINGLE 7 FT. X 8 FT.
 CONCRETE BOX CULVERT**

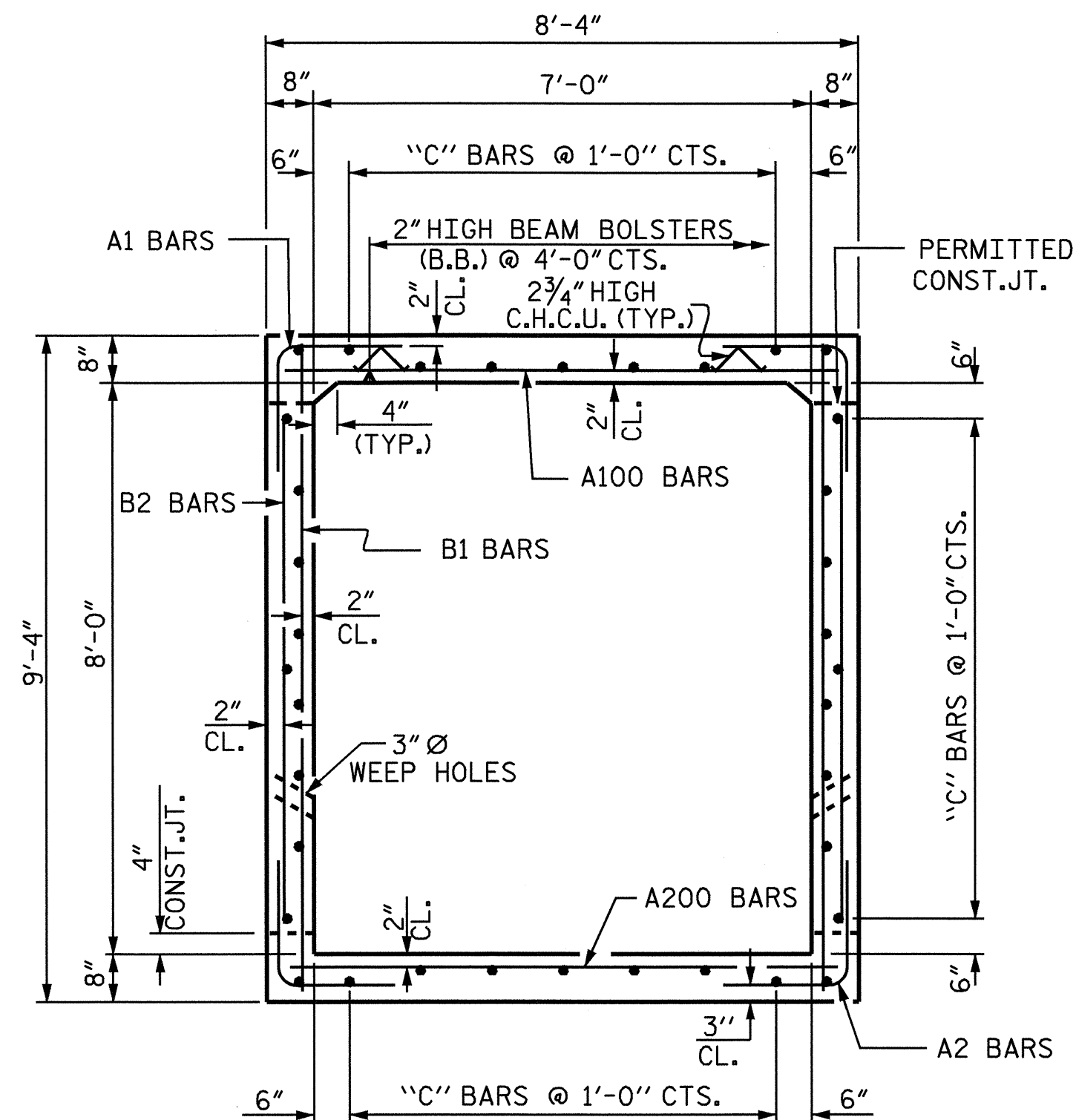
83° SKEW

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

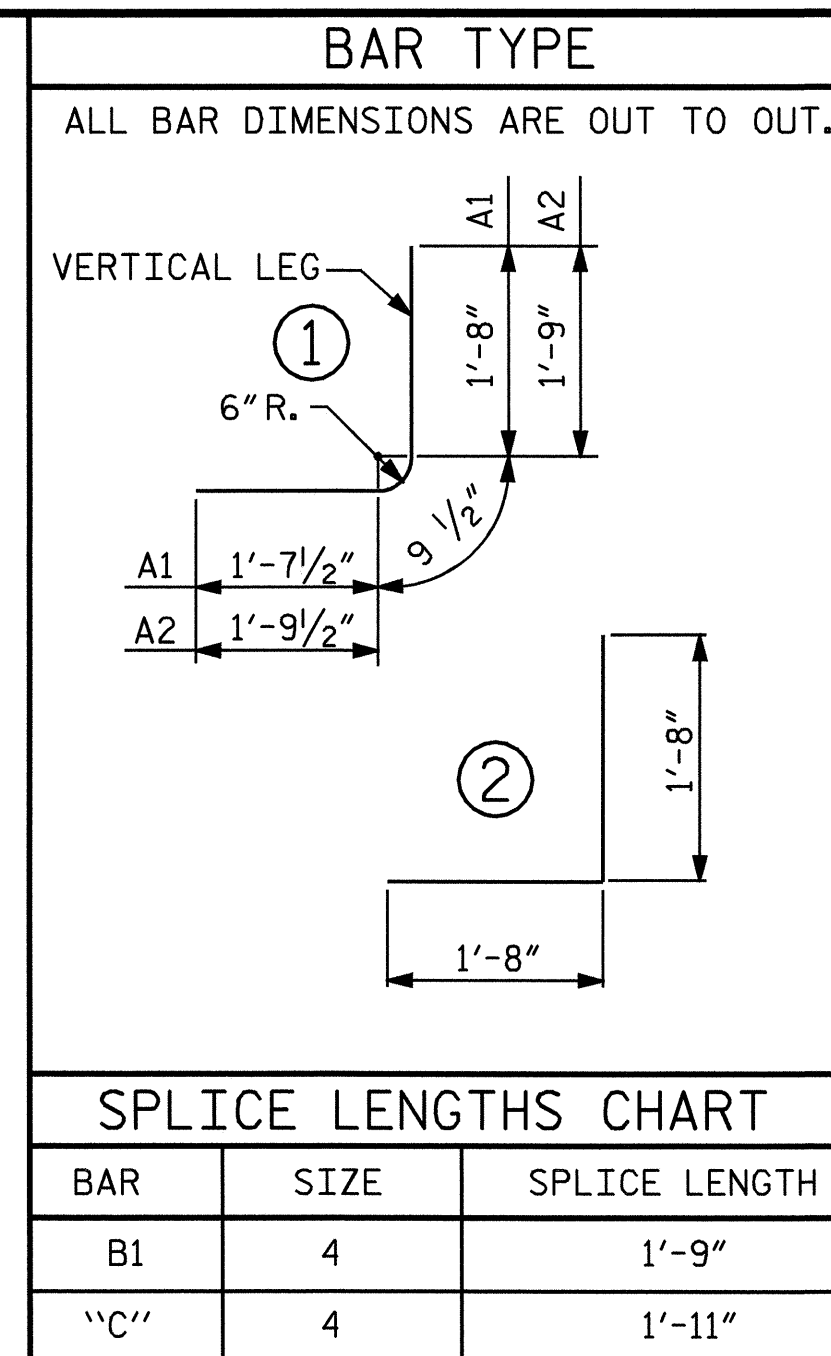


DRAWN BY: A.S. CALLAWAY DATE: 7/28/04
 CHECKED BY: P.C. BREWER DATE: 1/27/05

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RIGHT ANGLE SECTION OF BARREL
THERE ARE 36 "C" BARS IN SECTION OF BARREL



BILL OF MATERIAL

STAGE I						STAGE II									
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT				
A100	99	#5	STR	7'-11"	817	A100	89	#5	STR	7'-11"	735				
A200	113	#5	STR	7'-11"	933	A200	130	#5	STR	7'-11"	1073				
A1	160	#4	1	4'-1"	436	A1	144	#4	1	4'-1"	393				
A2	160	#5	1	4'-4"	723	A2	184	#5	1	4'-4"	832				
B1	132	#4	STR	8'-10"	779	B1	120	#4	STR	8'-10"	708				
B2	160	#5	STR	7'-4"	1224	B2	144	#5	STR	7'-4"	1101				
C1	108	#4	STR	24'-2"	1743	C2	81	#4	STR	21'-4"	1154				
						C3	27	#4	STR	26'-10"	484				
G1	2	#4	STR	8'-0"	11										
S2	6	#8	STR	8'-0"	128	D1	18	#6	STR	3'-0"	81				
						G1	2	#4	STR	8'-0"	11				
						K1	5	#4	2	3'-4"	11				
						S2	14	#8	STR	8'-0"	299				
REINFORCING STEEL						LBS.	6794	REINFORCING STEEL						LBS.	6882

STRUCTURE QUANTITIES STAGE I

CLASS A CONCRETE		
BARREL @ 0.811	CY/FT	53.5 C.Y.
INLET WINGS, ETC.		11.4 C.Y.
EDGE BEAMS		0.6 C.Y.
TOTAL		65.5 C.Y.
REINFORCING STEEL		
BARREL		6,794 LBS.
INLET WINGS, ETC.		721 LBS.
TOTAL		7,515 LBS.
CULVERT EXCAVATION		LUMP SUM
FOUNDATION COND. MAT'L.		39 TONS

STRUCTURE QUANTITIES STAGE II

CLASS A CONCRETE		
BARREL @ 0.811	CY/FT	48.7 C.Y.
APRON, ETC.		4.0 C.Y.
OUTLET WINGS, ETC.		4.7 C.Y.
EDGE BEAMS		0.6 C.Y.
TOTAL		58.0 C.Y.
REINFORCING STEEL		
BARREL/APRON		6,882 LBS.
OUTLET WINGS, ETC.		675 LBS.
TOTAL		7,557 LBS.
CULVERT EXCAVATION		LUMP SUM
FOUNDATION COND. MAT'L.		45 TONS

PROJECT NO. U-3612
GUILFORD COUNTY
STATION: 23+12.30 -L-

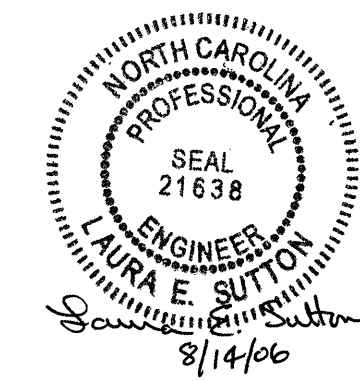
SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SINGLE 7 FT. X 8 FT.
CONCRETE BOX CULVERT**

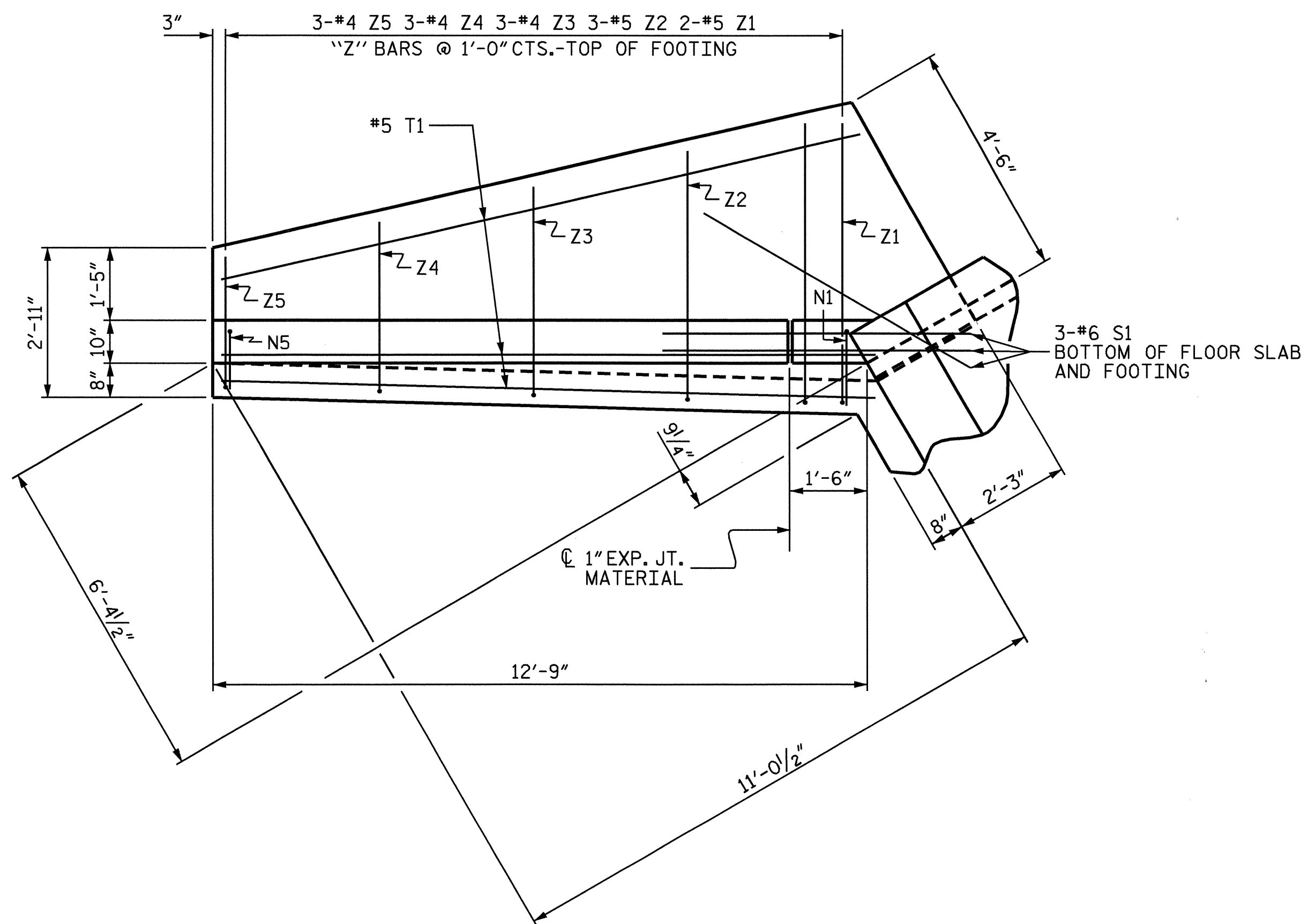
83° SKEW

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

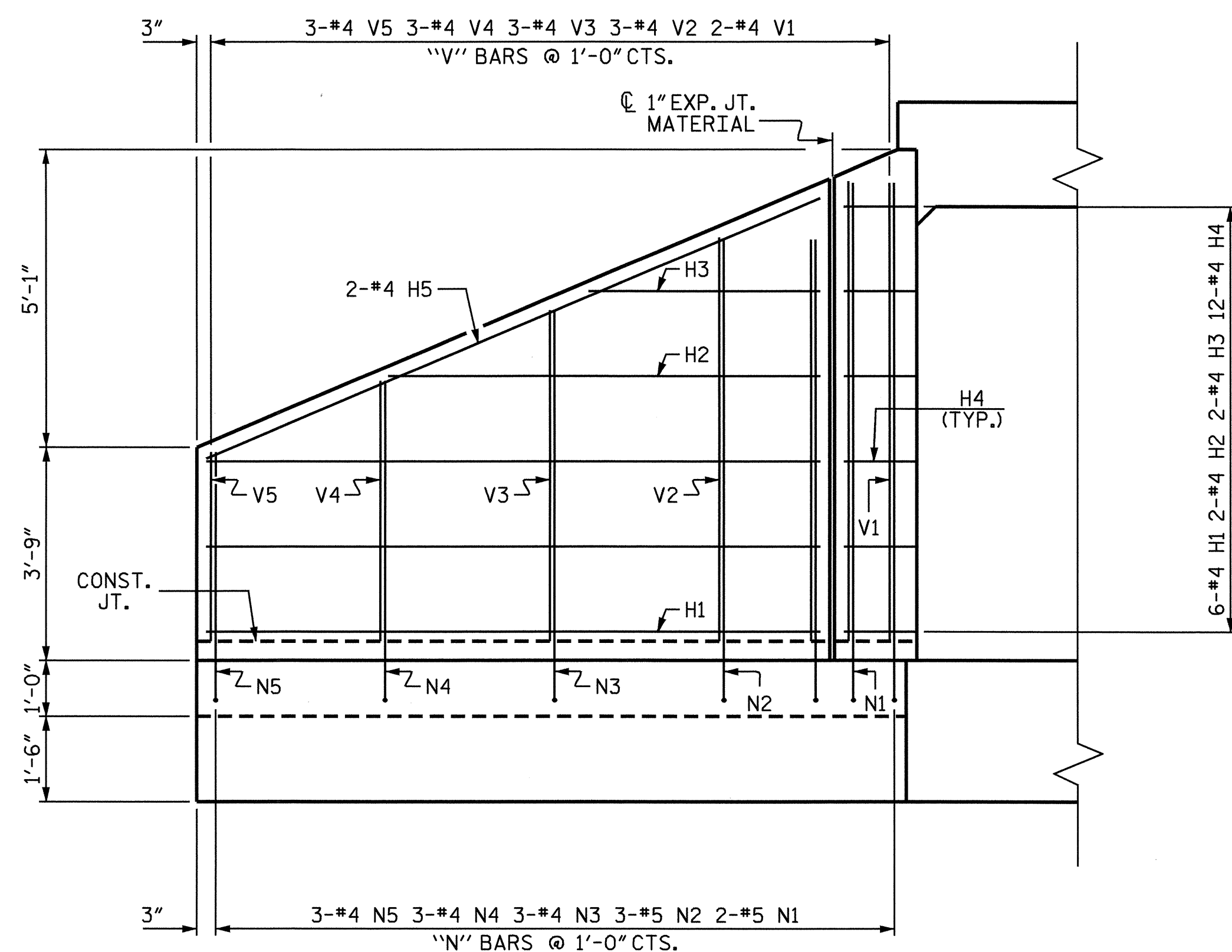


DRAWN BY : A.S. CALLAWAY DATE : 7/28/04
CHECKED BY : P.C. BREWER DATE : 1/27/05

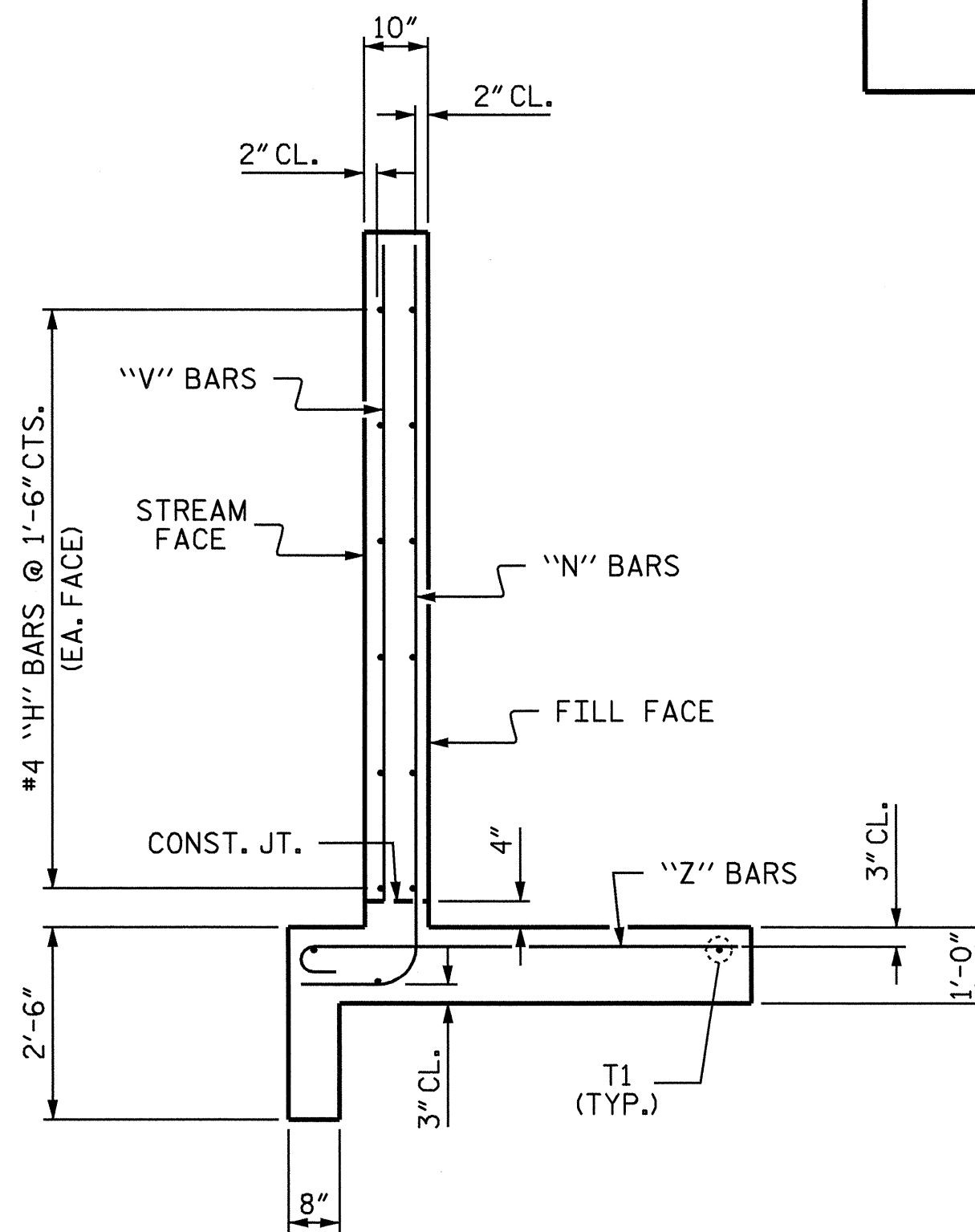
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PLAN

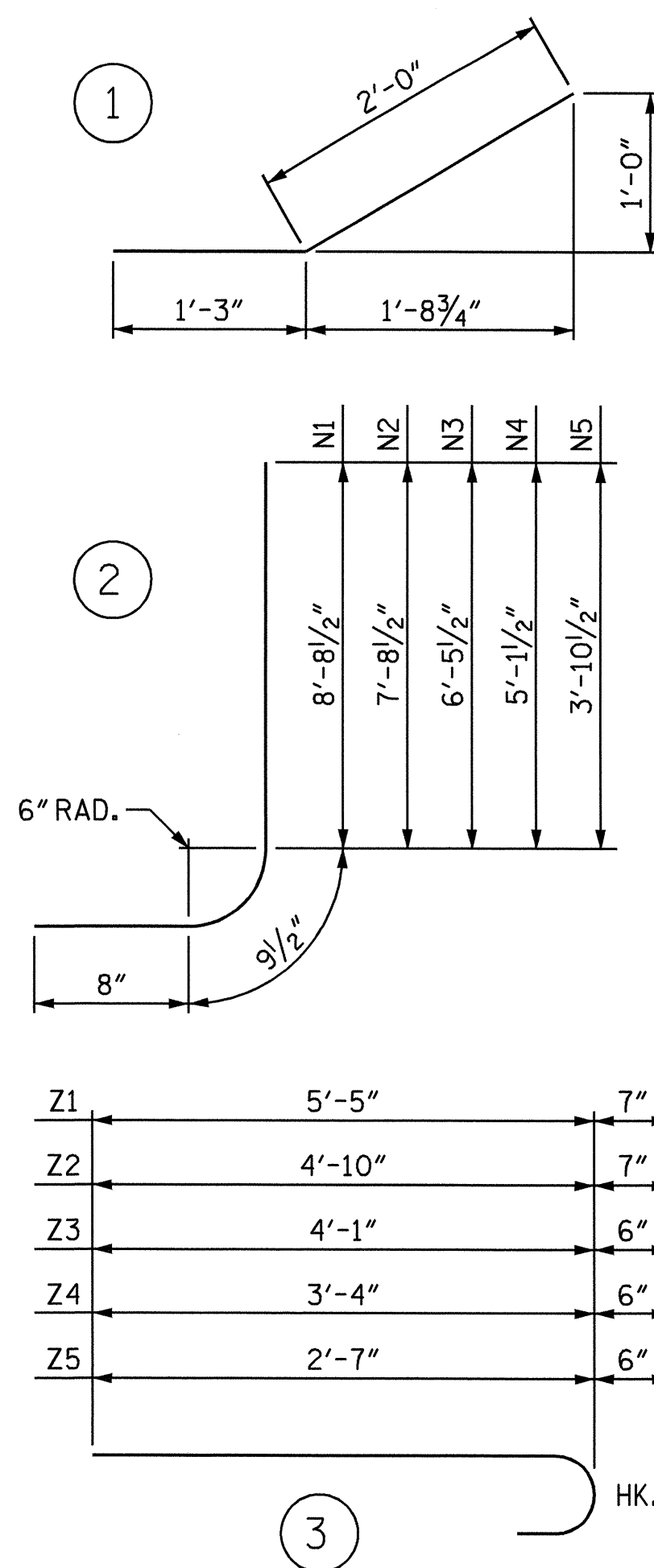


ELEVATION



TYPICAL WING SECTION

BAR TYPES
ALL BAR DIMENSIONS ARE OUT TO OUT.



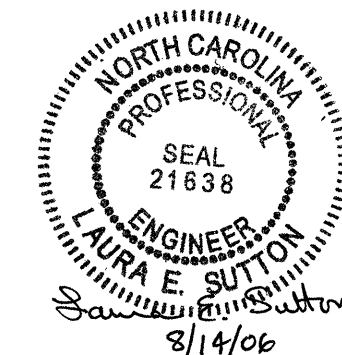
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	10'-10"	87
H2	4	#4	STR	7'-8"	20
H3	4	#4	STR	4'-1"	11
H4	24	#4	1	3'-3"	52
H5	4	#4	STR	11'-9"	31
N1	4	#5	2	10'-2"	42
N2	6	#5	2	9'-2"	57
N3	6	#4	2	7'-11"	32
N4	6	#4	2	6'-7"	26
N5	6	#4	2	5'-4"	21
S1	6	#6	STR	6'-0"	54
T1	6	#5	STR	12'-9"	80
V1	4	#4	STR	8'-1"	22
V2	6	#4	STR	7'-1"	28
V3	6	#4	STR	5'-10"	23
V4	6	#4	STR	4'-7"	18
V5	6	#4	STR	3'-4"	13
Z1	4	#5	3	6'-0"	25
Z2	6	#5	3	5'-5"	34
Z3	6	#4	3	4'-7"	18
Z4	6	#4	3	3'-10"	15
Z5	6	#4	3	3'-1"	12

REINFORCING STEEL FOR 2 WINGS			LBS.	721
CLASS A CONCRETE				
2 WINGS		C.Y.	10.7	
1 HEADWALL		C.Y.	0.4	
1 END CURTAIN WALL		C.Y.	0.3	
TOTAL		C.Y.	11.4	

NOTE
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.

ASSEMBLED BY : A.S. CALLAWAY DATE : 7/28/04
 CHECKED BY : P.C. BREWER DATE : 2/1/05
 DRAWN BY : CCJ 10/99
 CHECKED BY : RWW 03/00

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PROJECT NO. U-3612
 GUILFORD COUNTY
 STATION: 23+12.30 -L-
 SHEET 5 OF 6

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

STD. NO. CW9008

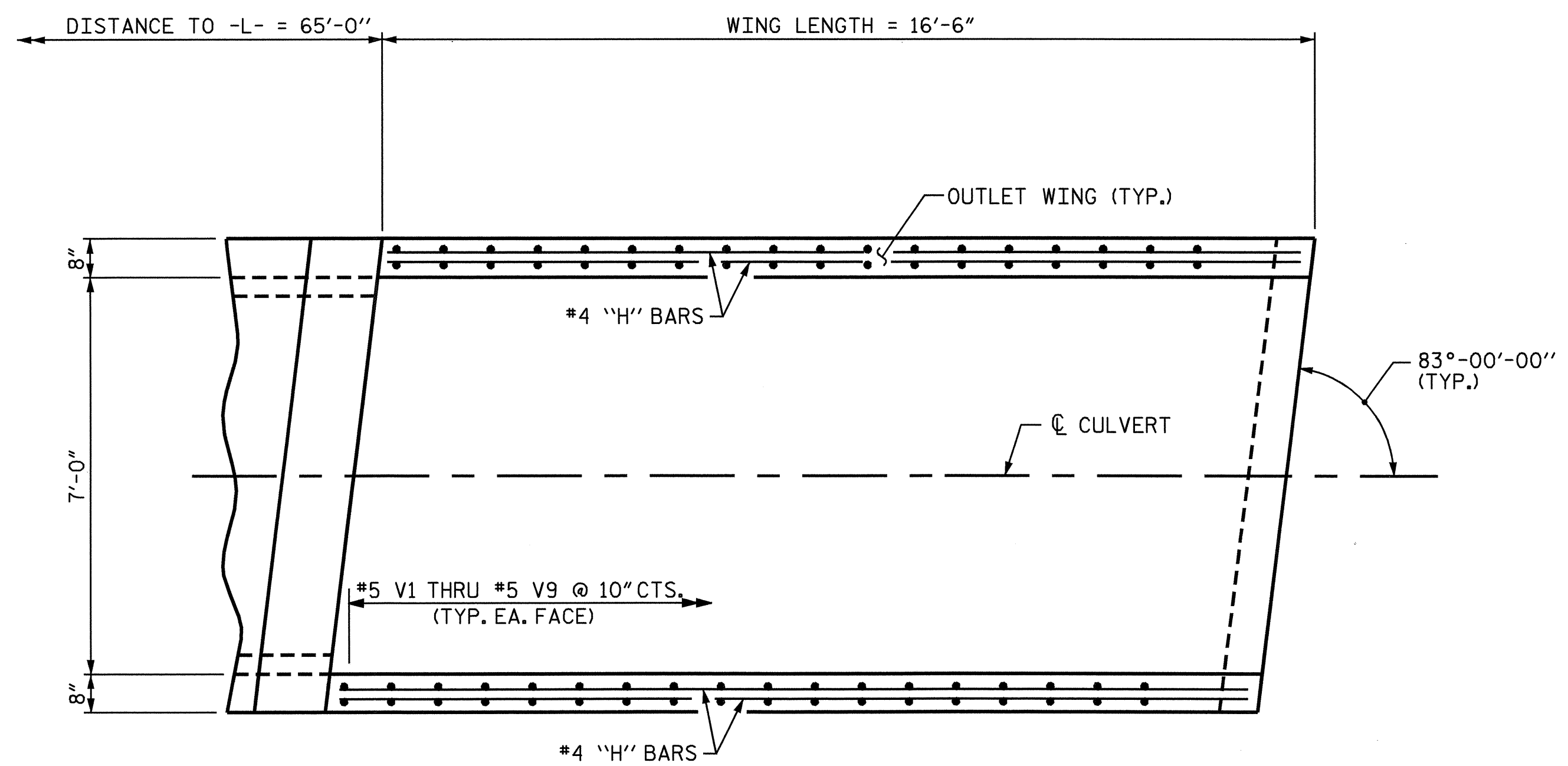
BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	4	#4	STR	16'-2"	43
H2	4	#4	STR	15'-11"	43
H3	4	#4	STR	13'-11"	37
H4	4	#4	STR	11'-10"	32
H5	4	#4	STR	9'-10"	26
H6	4	#4	STR	7'-10"	21
H7	4	#4	STR	5'-10"	16
H8	4	#4	STR	3'-10"	10
H9	4	#4	STR	1'-9"	5
H10	4	#4	STR	18'-0"	48
V1	8	#5	STR	8'-6"	71
V2	8	#5	STR	7'-8"	64
V3	8	#5	STR	6'-11"	58
V4	8	#5	STR	6'-1"	51
V5	8	#5	STR	5'-3"	44
V6	8	#5	STR	4'-5"	37
V7	8	#5	STR	3'-7"	30
V8	8	#5	STR	2'-9"	23
V9	8	#5	STR	1'-11"	16
REINFORCING STEEL FOR 2 WINGS					LBS. 675
CLASS A CONCRETE					
2 WINGS					C.Y. 4.3
1 HEADWALL					C.Y. 0.4
TOTAL					C.Y. 4.7

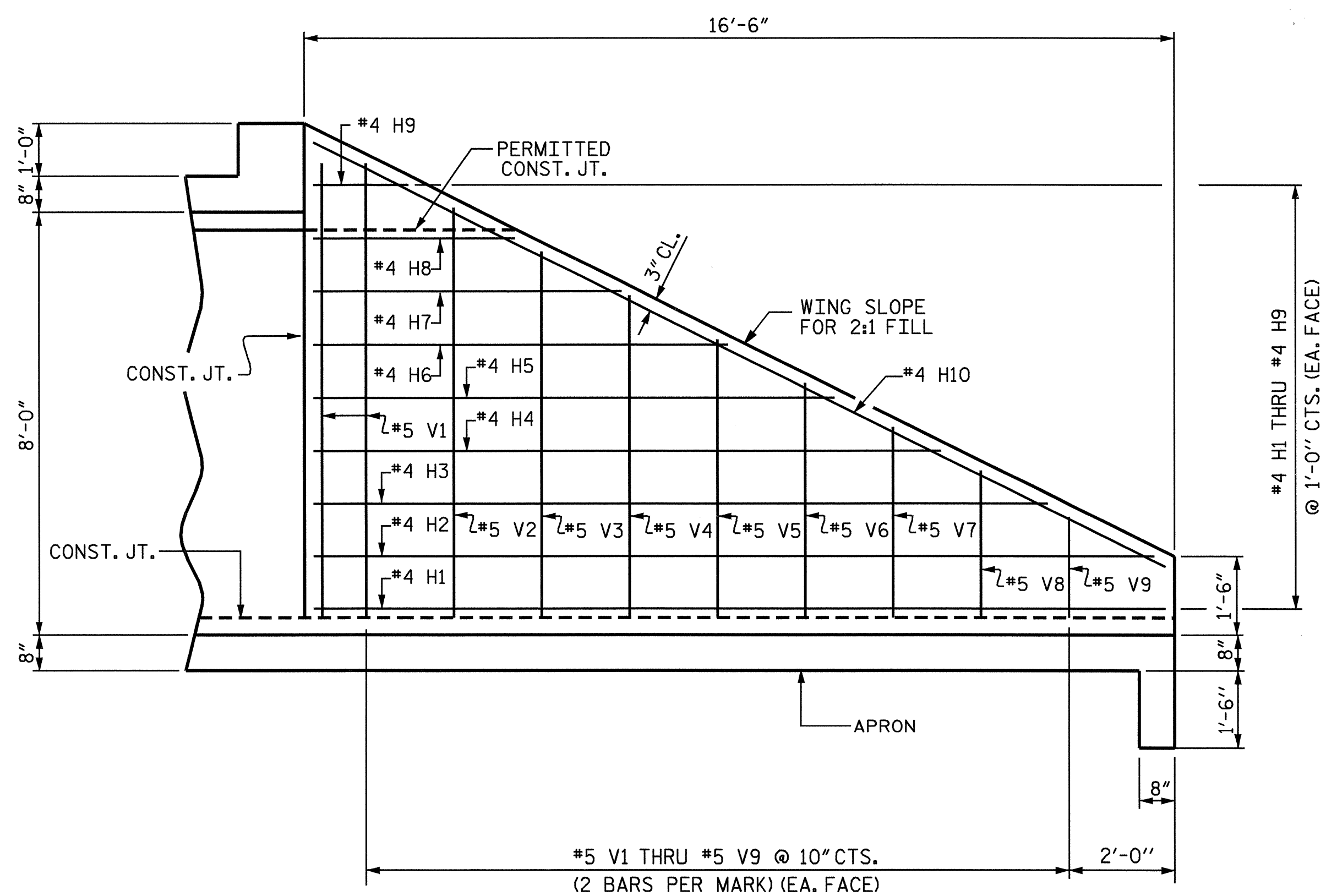
NOTES

REINFORCING STEEL AND CONCRETE IN THE APRON AND END CURTAIN WALL ARE INCLUDED IN THE BILL OF MATERIAL FOR THE BARREL.

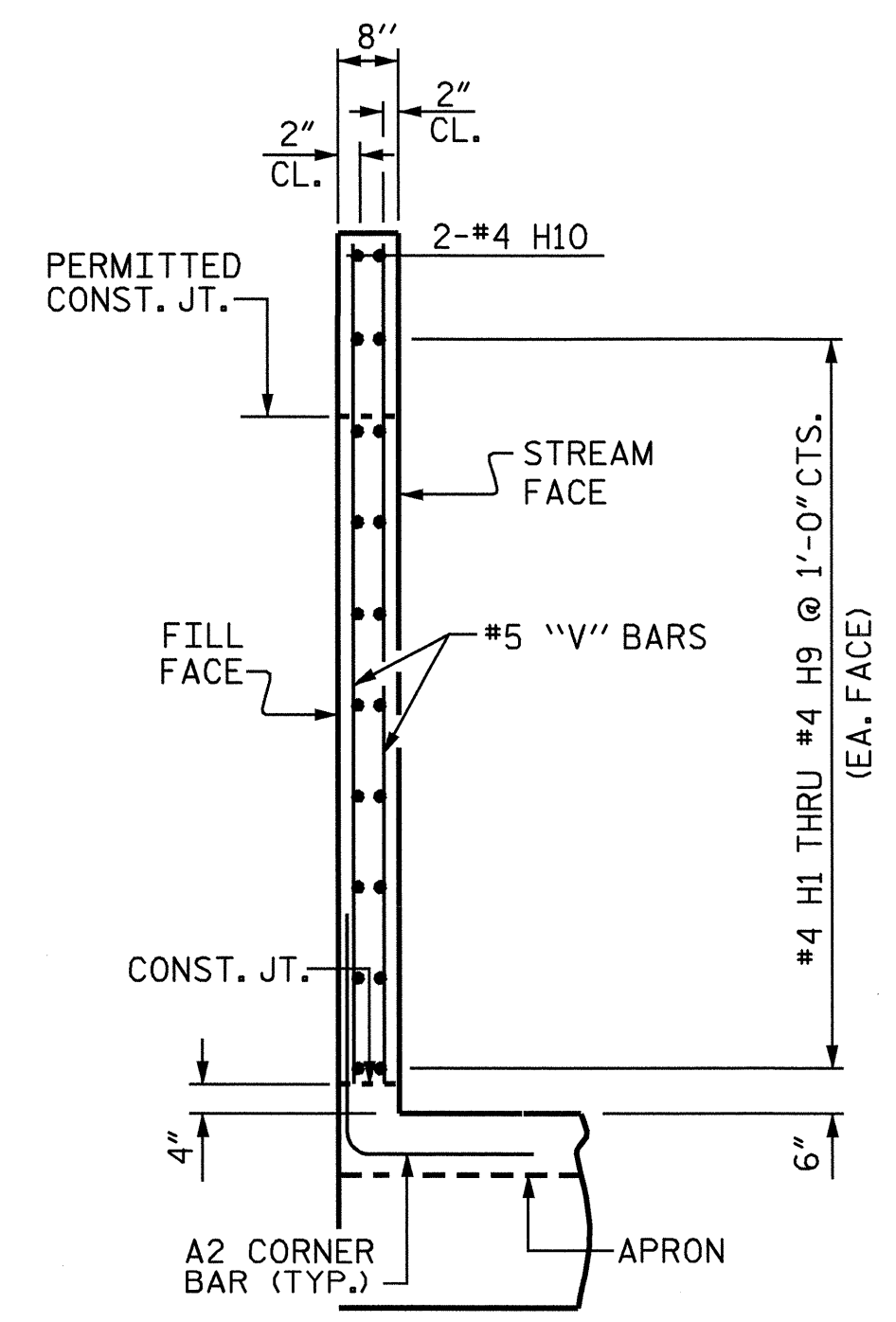
THE VERTICAL LEG OF THE A2 BARS SHALL BE CUT OFF AS NECESSARY AT THE ENDS OF THE WINGS TO MATCH HEIGHT OF "V" BARS.



PLAN



ELEVATION



TYPICAL WING SECTION

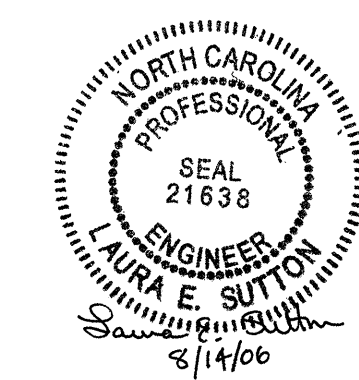
PROJECT NO. U-3612
GUILFORD COUNTY
 STATION: 23+12.30 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**OUTLET WINGS
 FOR
 CONCRETE BOX CULVERT**

H = 8'-0" SLOPE = 2:1
 83° SKEW



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

DRAWN BY : A.S. CALLAWAY DATE : 1/12/05
 CHECKED BY : P.C. BREWER DATE : 1/27/05

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. FINISHES 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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