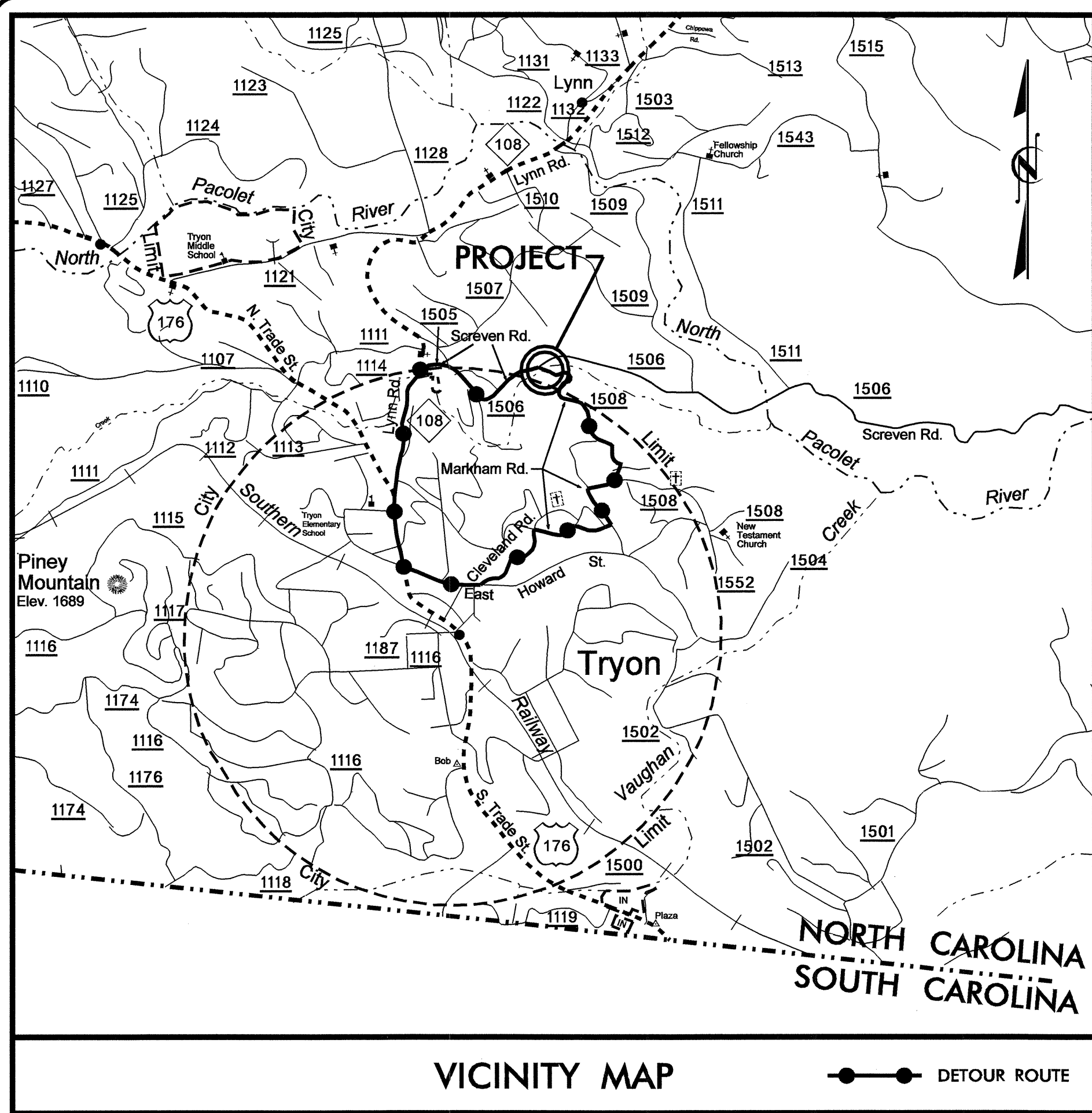


PROJECT: C201473 TIP PROJECT: B-4240



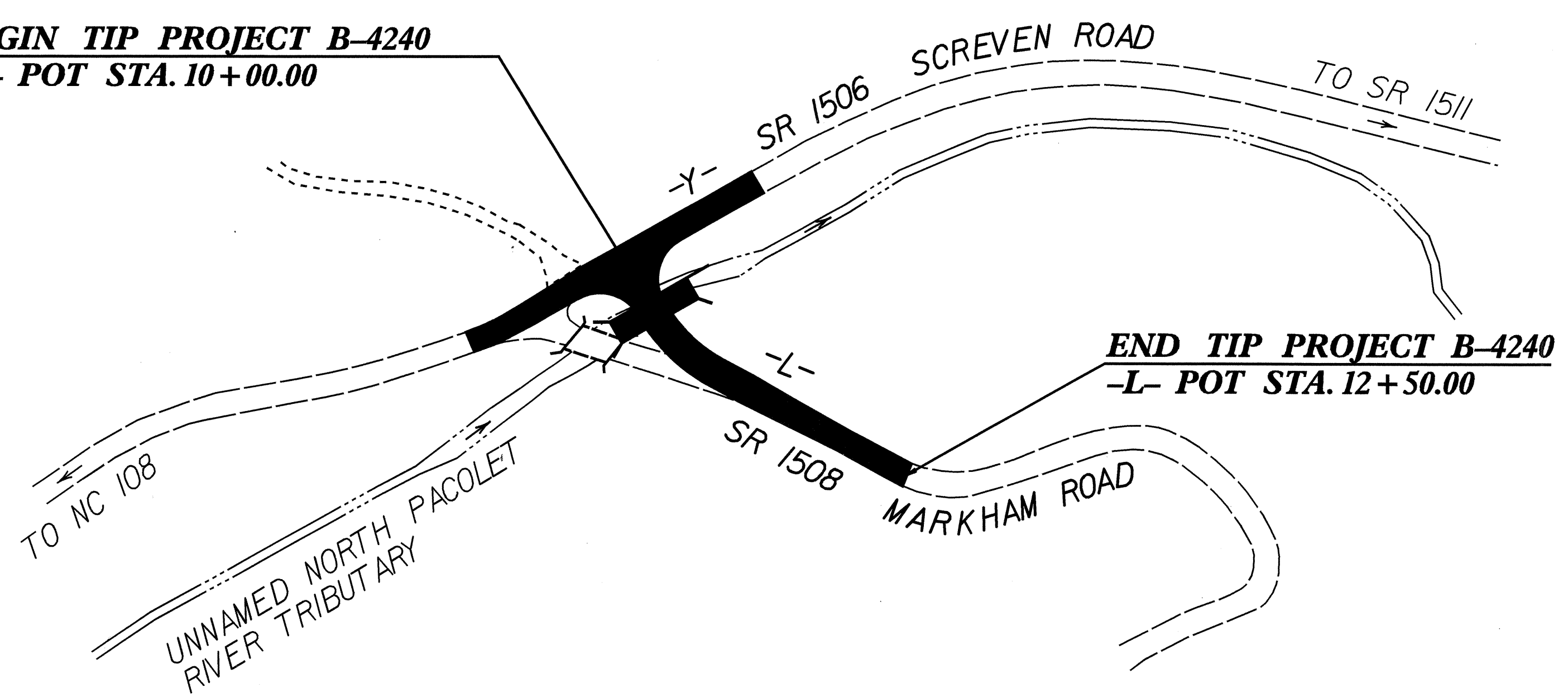
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
POLK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4240		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33583.1.1	BRZ-1508 (3)	PE	
33583.2.1	BRZ-1508 (3)	RW, UTILITIES	
33583.3.1	BRZ-1508 (3)	CONST	

LOCATION: BRIDGE #193 OVER UNNAMED NORTH PACOLET RIVER TRIBUTARY ON SR 1508 (MARKHAM ROAD) AND APPROACHES

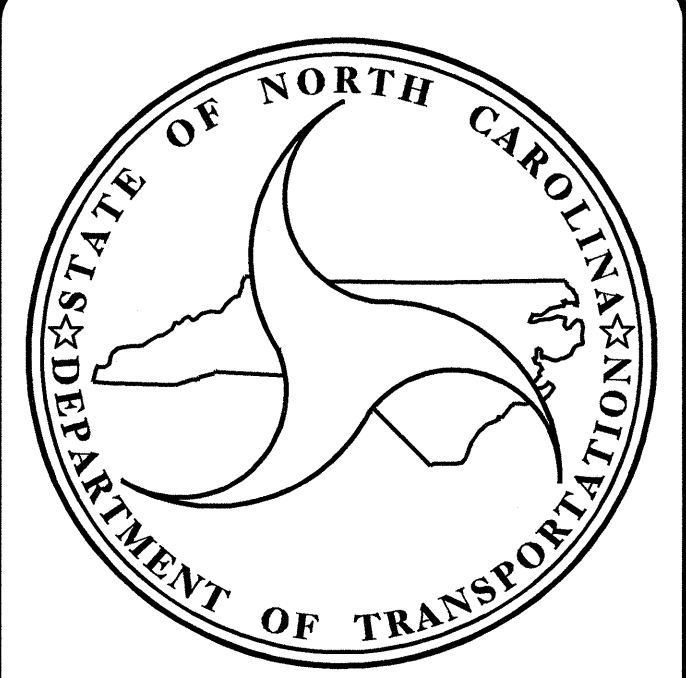
TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL, AND CULVERT

BEGIN TIP PROJECT B-4240
-L- POT STA. 10+00.00



END TIP PROJECT B-4240
-L- POT STA. 12+50.00

CULVERT



DESIGN DATA

ADT 2005 =	525
ADT 2025 =	700
DHV =	10 %
D =	60 %
T =	3 % *
V =	20 MPH

* (TTST 1% + DUAL 2%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4240	=	0.047 mi
TOTAL LENGTH TIP PROJECT B-4240	=	0.047 mi

Prepared In the Office of:
DIVISION OF HIGHWAYS

2002 STANDARD SPECIFICATIONS

<p>LETTING DATE: MAY 16, 2006</p>	<p>JOHN C. FRYE, P.E. PROJECT ENGINEER</p> <hr/> <p>BRIAN C. HANKS, P.E. PROJECT DESIGN ENGINEER</p>
---------------------------------------	--

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

Gregory R. Perrett
4.4.06

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.

STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____
DIVISION ADMINISTRATOR DATE _____

BENCH MARK #2 : 60d NAIL IN SWEET GUM TREE 82.23' RIGHT -L- STA. 10+56.18 ELEV. 933.370

F. A. PROJECT NO. BRZ-1508(3)

NOTES

ASSUMED LIVE LOAD -----HS20-44 OR ALTERNATE LOADING.
 DESIGN FILL-----8.15'
 FOR OTHER DESIGN DATA AND GENERAL NOTES SEE SHEET SN.
 3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

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.

CONCRETE IN CULVERT TO BE POURED IN THE FOLLOWING ORDER:
 STAGE I & STAGE II
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF THE WALLS, THE SILLS AND WINGS FULL HEIGHT.

THE 24" DIAMETER PIPE THROUGH THE SIDEWALL OF THE CULVERT SHALL BE LOCATED BY THE ENGINEER. THE REINFORCING STEEL SHALL BE FIELD BENT AS NECESSARY TO CLEAR THE PIPE.

STAGE III
 3. THE ENTIRE ROOF SLAB AND HEADWALLS.

EXISTING BED MATERIAL WILL BE STOCKPILED ON SITE AND REUSED AS BACKFILL MATERIAL INSIDE THE CULVERT TO BURY THE BOTTOM OF THE CULVERT TO THE REQUIRED 1'-0" DEPTH.

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.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON THE WING SHEETS.

THE EXISTING STRUCTURE CONSISTING OF A TIMBER FLOOR ON I-BEAMS, SUPPORTED BY A TIMBER CAP ON TIMBER POSTS AND SILLS, LOCATED UPSTREAM FROM PROPOSED STRUCTURE, SHALL BE REMOVED.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF THE EXTERIOR WALL AND BOTH FACES OF THE INTERIOR WALL ABOVE THE 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 WING 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 WING.

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.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 10+41.00 -L-."

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

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

CHANNEL EXCAVATION SHALL BE PAID FOR AS INCIDENTAL TO CULVERT EXCAVATION. SEE ROADWAY PLANS AND DETAILS FOR THE QUANTITY AND LIMITS OF CHANNEL EXCAVATION.

HYDRAULIC DATA

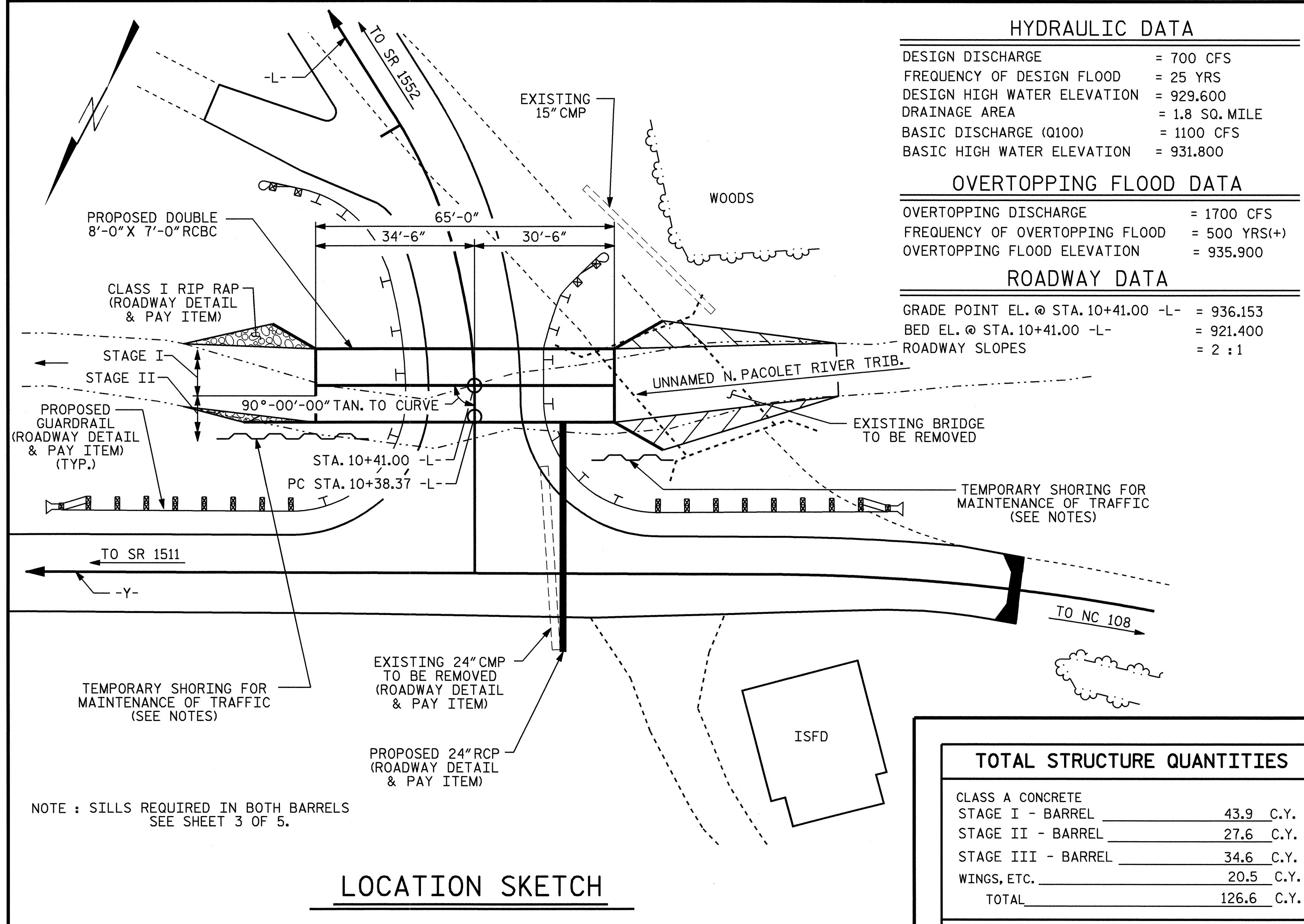
DESIGN DISCHARGE	= 700 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YRS
DESIGN HIGH WATER ELEVATION	= 929.600
DRAINAGE AREA	= 1.8 SQ. MILE
BASIC DISCHARGE (Q100)	= 1100 CFS
BASIC HIGH WATER ELEVATION	= 931.800

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1700 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500 YRS(+)
OVERTOPPING FLOOD ELEVATION	= 935.900

ROADWAY DATA

GRADE POINT EL. @ STA. 10+41.00 -L-	= 936.153
BED EL. @ STA. 10+41.00 -L-	= 921.400
ROADWAY SLOPES	= 2 : 1

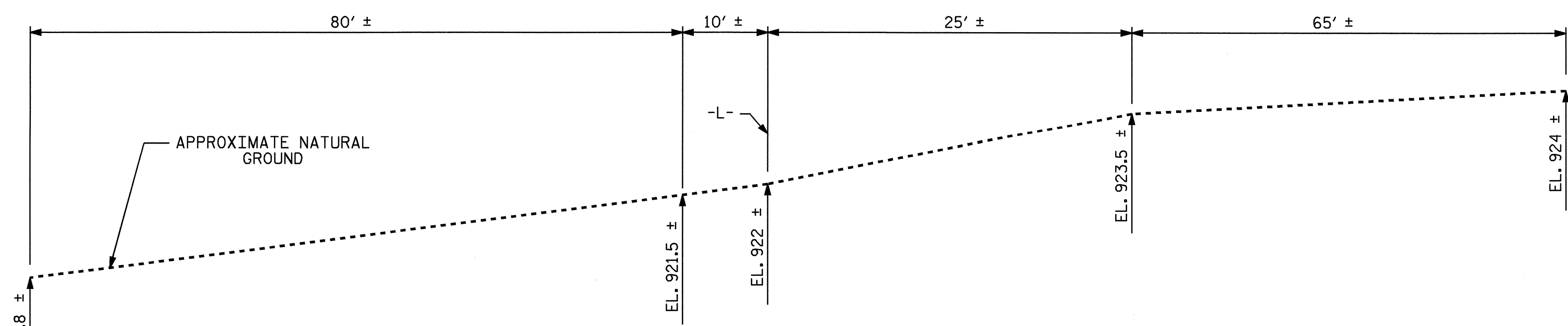


TOTAL STRUCTURE QUANTITIES

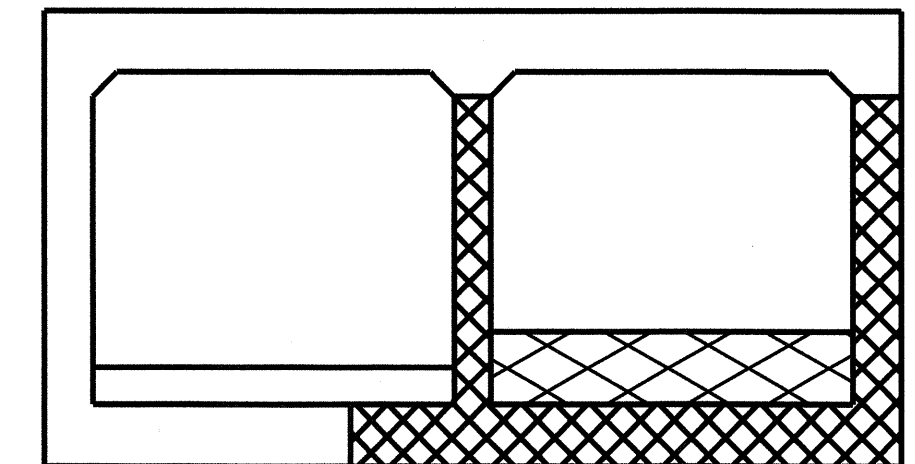
CLASS A CONCRETE	
STAGE I - BARREL	43.9 C.Y.
STAGE II - BARREL	27.6 C.Y.
STAGE III - BARREL	34.6 C.Y.
WINGS, ETC.	20.5 C.Y.
TOTAL	126.6 C.Y.
REINFORCING STEEL	
BARREL	17791 LBS.
WINGS, ETC.	1279 LBS.
TOTAL	19070 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MAT'L	83 TONS
REMOVAL OF EXISTING STRUCTURE	LUMP SUM

LOCATION SKETCH

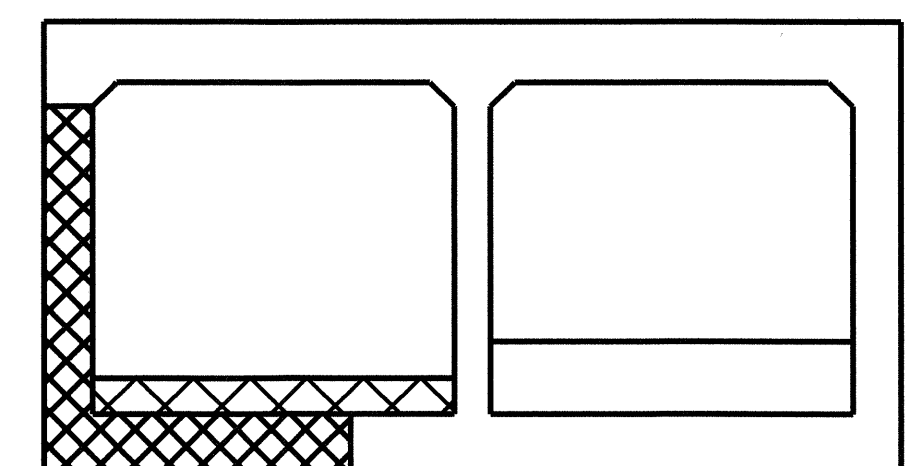
NOTE : SILLS REQUIRED IN BOTH BARRELS SEE SHEET 3 OF 5.



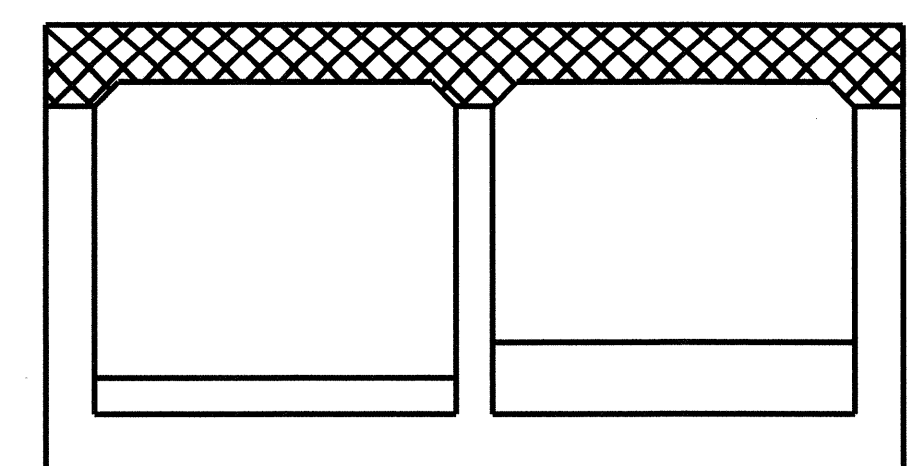
PROFILE ALONG CULVERT



STAGE I



STAGE II



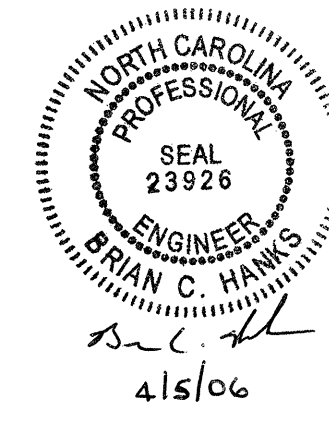
STAGE III

CONSTRUCTION SEQUENCE

(LOOKING DOWNSTREAM)

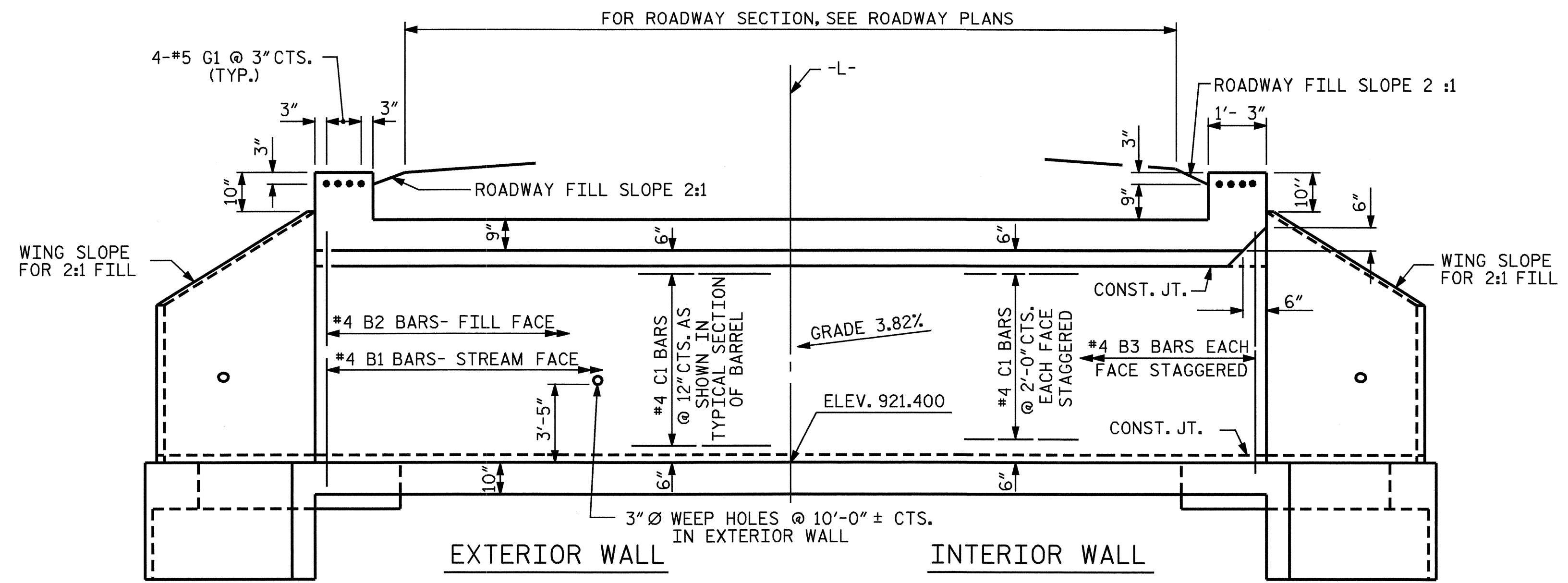
PROJECT NO. B-4240
 POLK COUNTY
 STATION: 10+41.00 -L-
 SHEET 1 OF 5 REPLACING BRIDGE #193 WITH A CULVERT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 DOUBLE 8 FT. X 7 FT.
 CONCRETE BOX CULVERT
 90° SKEW

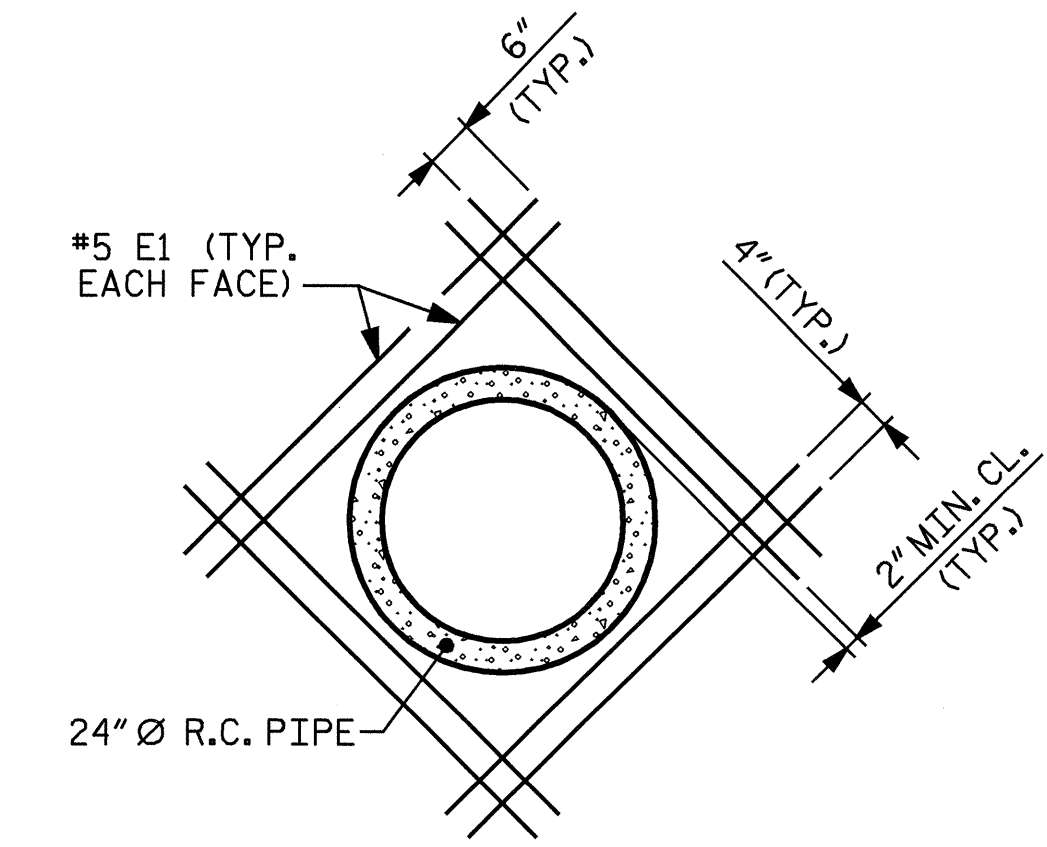


ASSEMBLED BY : J.L. WALTON DATE : 6/17/05
 CHECKED BY : K.K. PUROHIT DATE : 6/24/05

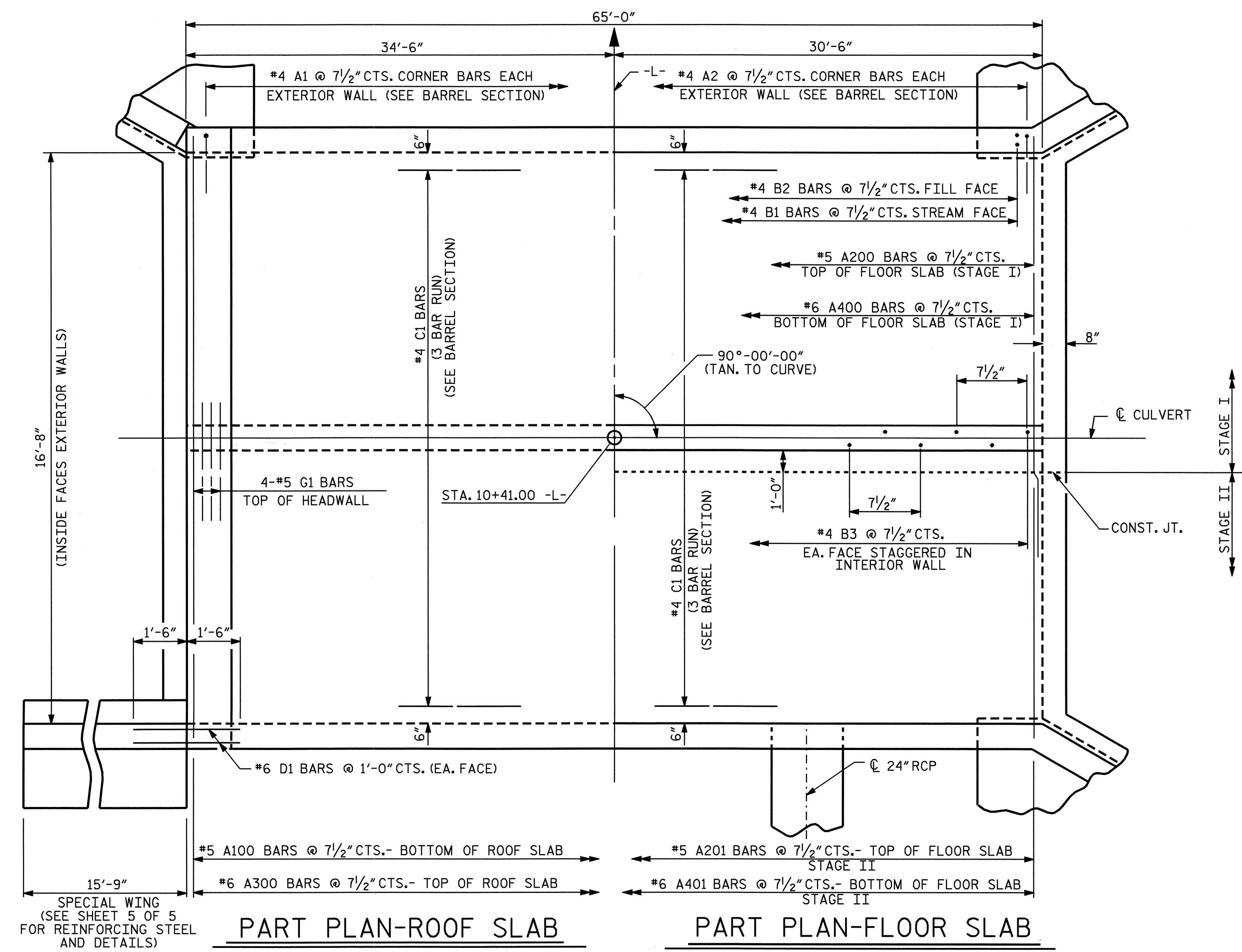
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS 5
2			4			



CULVERT SECTION NORMAL TO ROADWAY

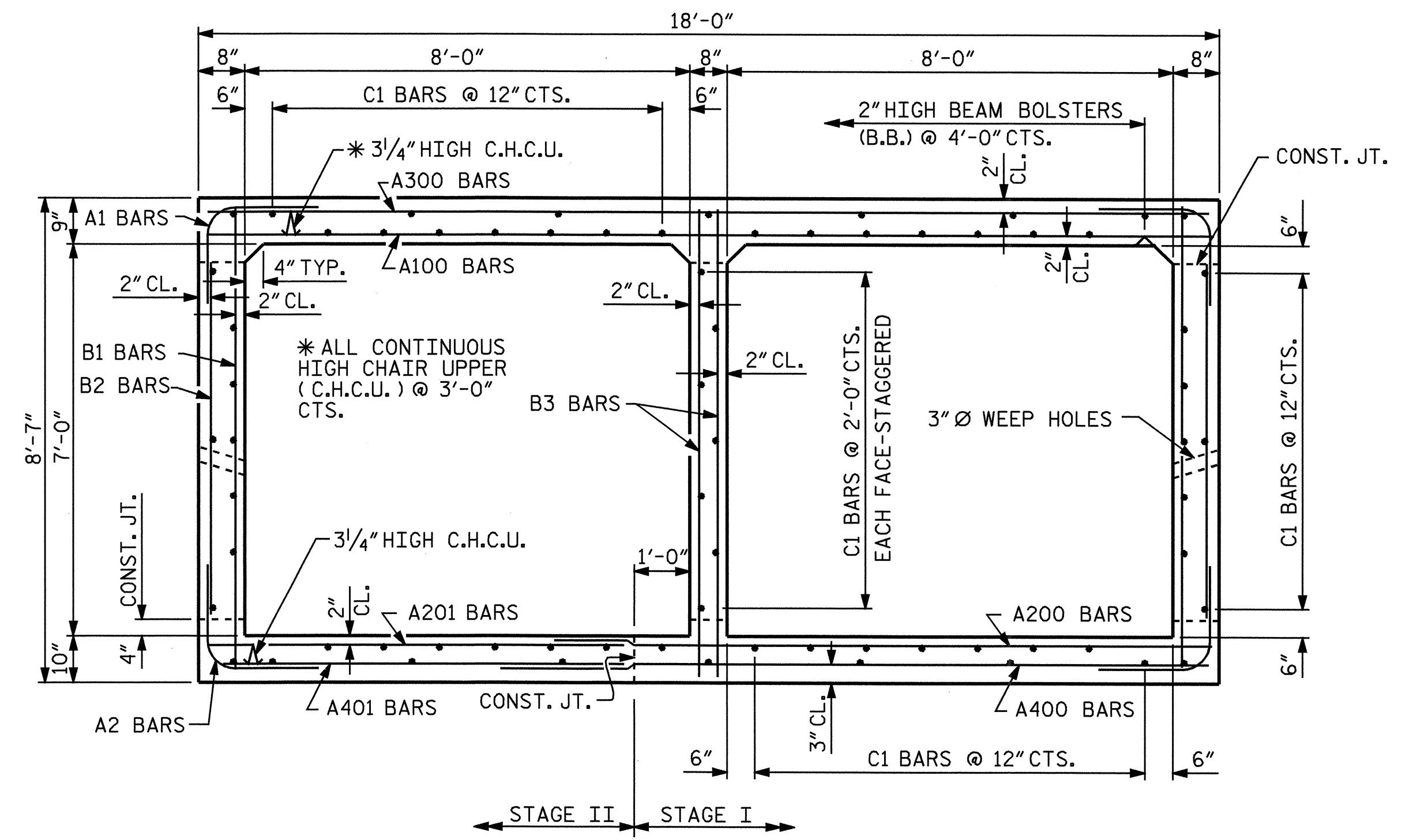


DETAIL OF REINFORCING AROUND 24" Ø PIPE



PART PLAN-ROOF SLAB

PART PLAN-FLOOR SLAB



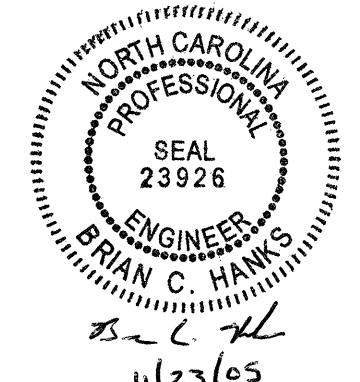
RIGHT ANGLE SECTION OF BARREL

THERE ARE 69 C1 BARS IN SECTION OF BARREL.
 (LOOKING DOWNSTREAM)

PROJECT NO. B-4240
POLK COUNTY
 STATION: 10+41.00 -L-
 SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

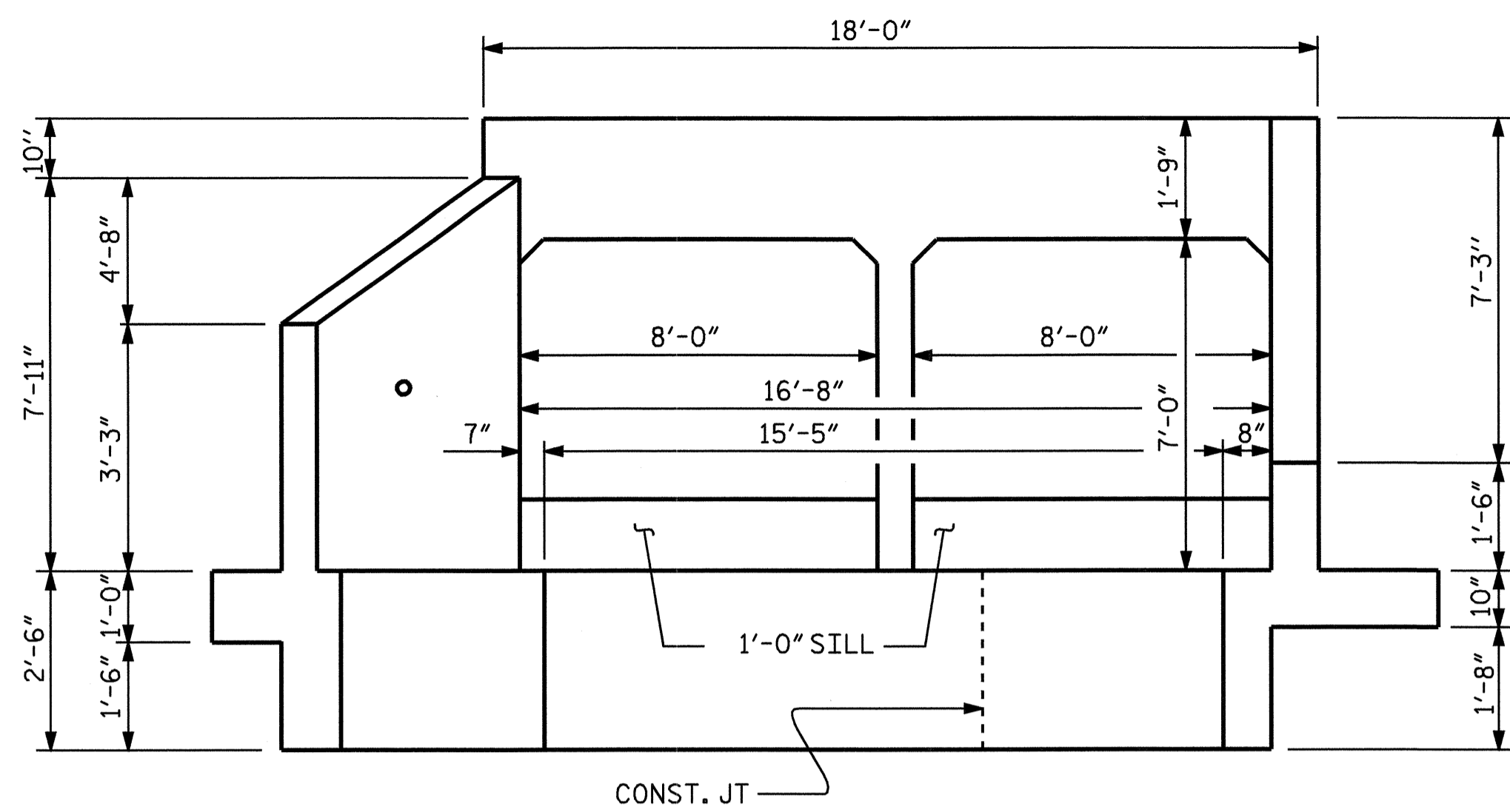
DOUBLE 8 FT. X 7 FT.
 CONCRETE BOX CULVERT
 90° SKEW



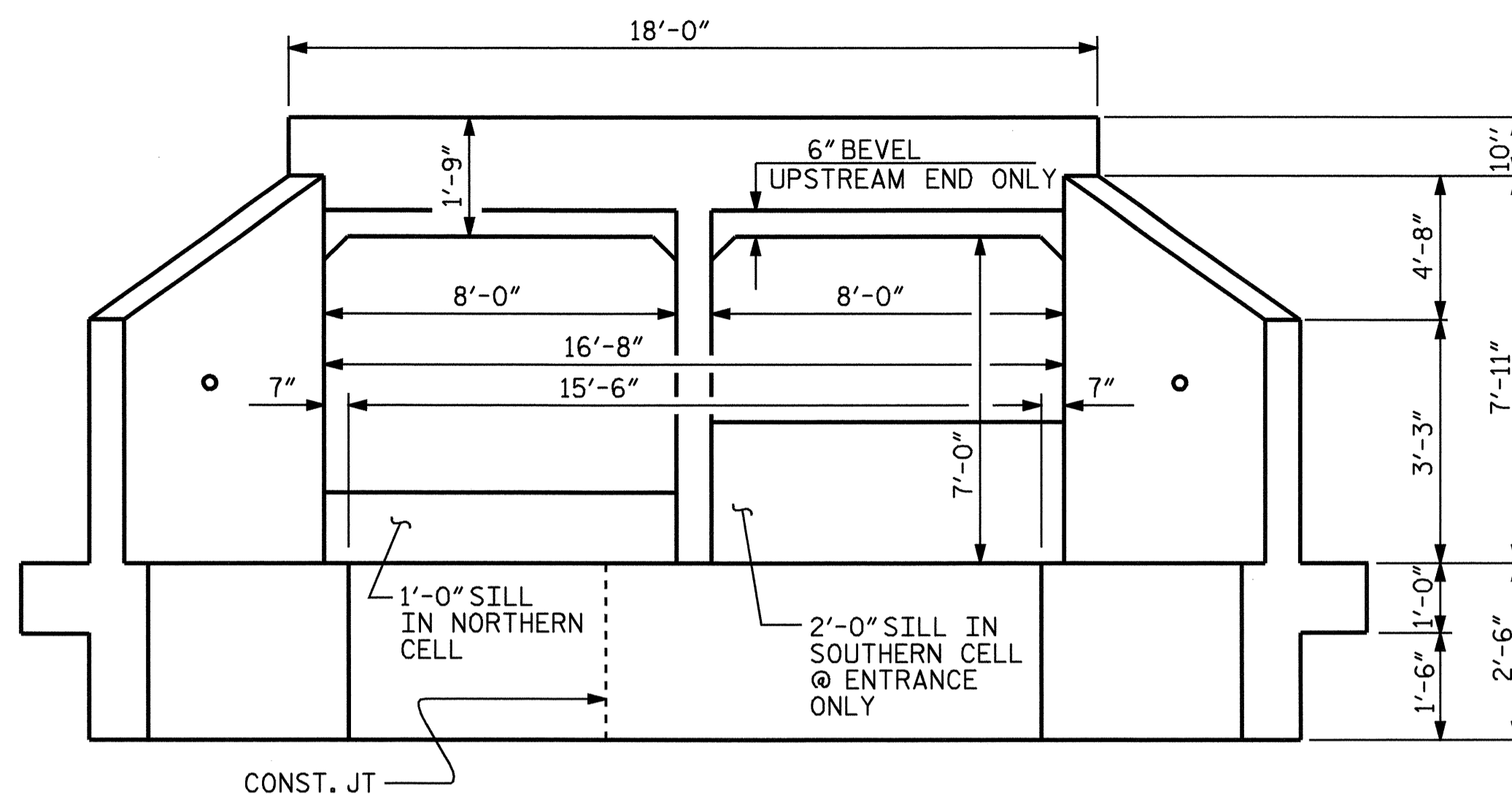
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			5

ASSEMBLED BY : J.L. WALTON DATE : 6/17/05
 CHECKED BY : K.K. PUROHIT DATE : 6/24/05

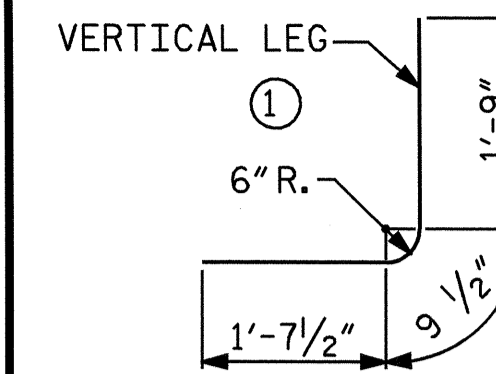
NOTE: FOR SILL LOCATIONS AND DETAILS, SEE SHEET 3 OF 5



END ELEVATION @ OUTLET



END ELEVATION @ INLET



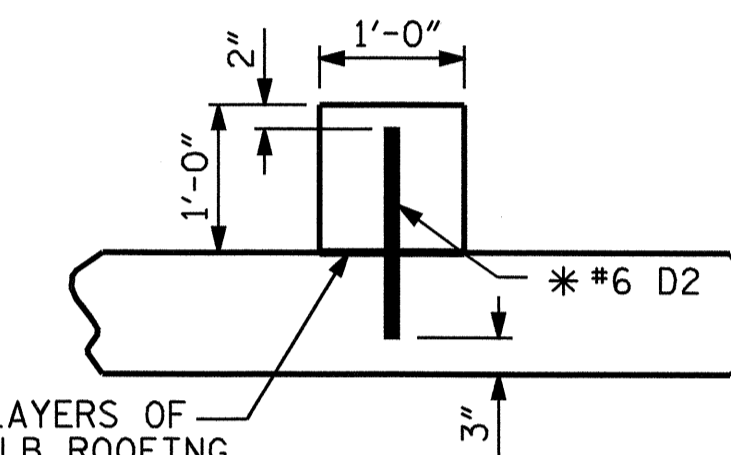
BAR TYPE

BAR DIMENSIONS ARE OUT TO OUT

SPLICE LENGTH CHART

BAR	SIZE	SPLICE LENGTH
A200	#5	1'-9"
A400	#6	2'-4"
B1	#4	1'-9"
B3	#4	1'-9"
C1	#4	1'-11"

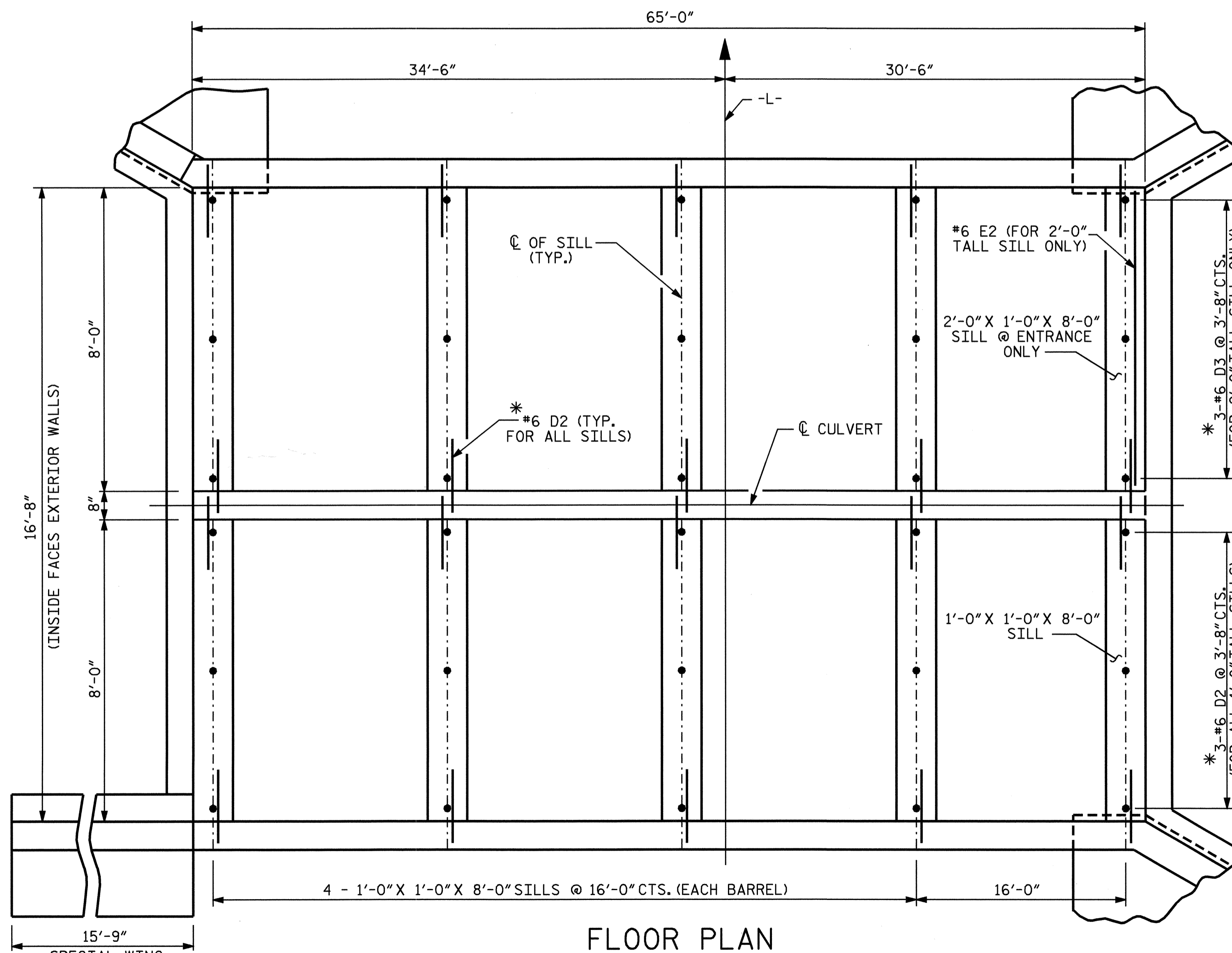
BILL OF MATERIAL					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
A1	208	#4	1	4'-2"	579
A2	208	#4	1	4'-2"	579
A100	104	#5	STR	17'-7"	1907
A200	104	#5	STR	12'-1"	1311
A201	104	#5	STR	7'-4"	795
A300	104	#6	STR	17'-7"	2747
A400	104	#6	STR	12'-8"	1979
A401	104	#6	STR	7'-4"	1146
B1	208	#4	STR	8'-2"	1135
B2	208	#4	STR	6'-4"	880
B3	208	#4	STR	8'-2"	1135
C1	207	#4	STR	23'-0"	3180
D1	16	#6	STR	3'-0"	72
D2	47	#6	STR	1'-5"	100
D3	3	#6	STR	2'-5"	11
E1	16	#5	STR	4'-7"	76
E2	1	#6	STR	7'-8"	12
G1	8	#5	STR	17'-8"	147
REINFORCING STEEL					= 17791 LBS.
CLASS A CONCRETE					
STAGE I - BARREL & SILLS				43.9	C.Y.
STAGE II - BARREL & SILLS				27.6	C.Y.
STAGE III - ROOF SLAB				34.6	C.Y.
TOTAL BARREL CONCRETE				106.1	C.Y.



2 LAYERS OF 30 LB. ROOFING FELT TO PREVENT BOND (TYP.)

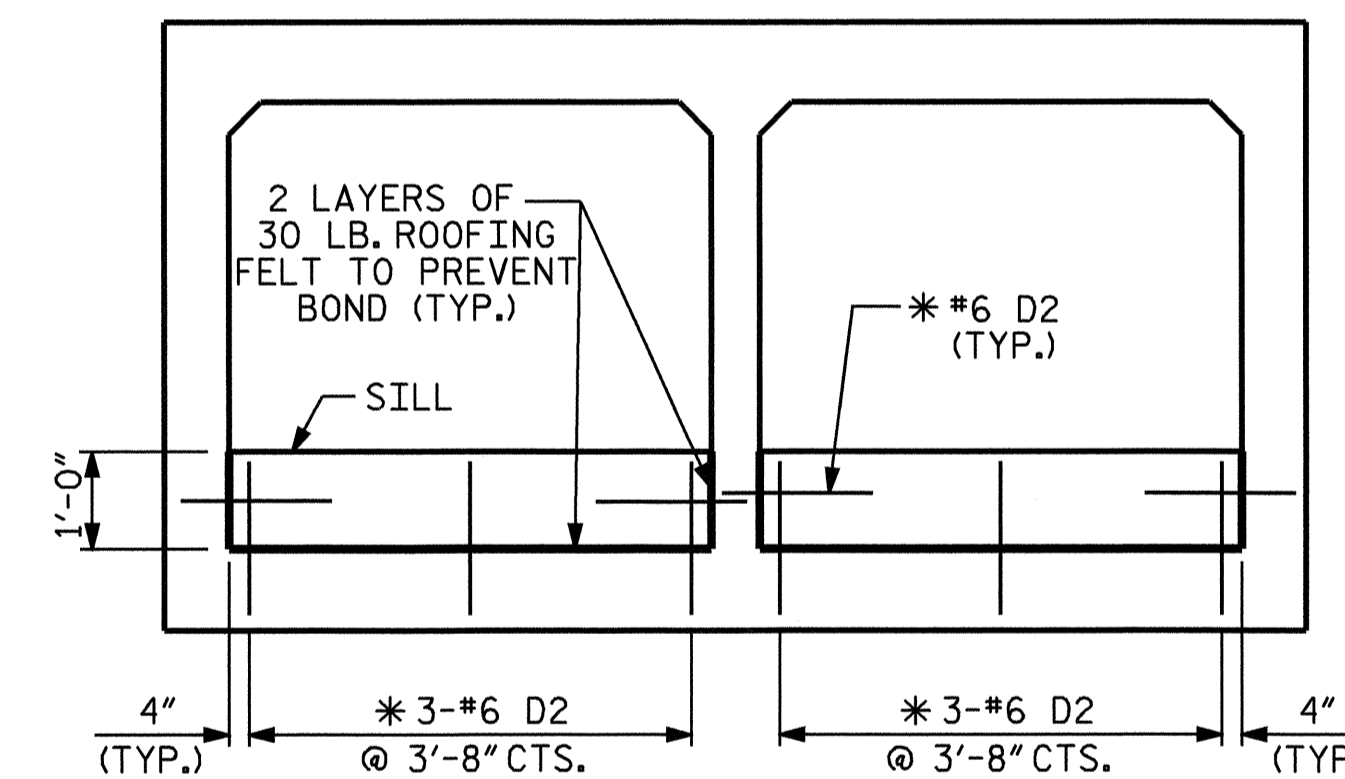
SECTION THRU 1'-0" HIGH SILL

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

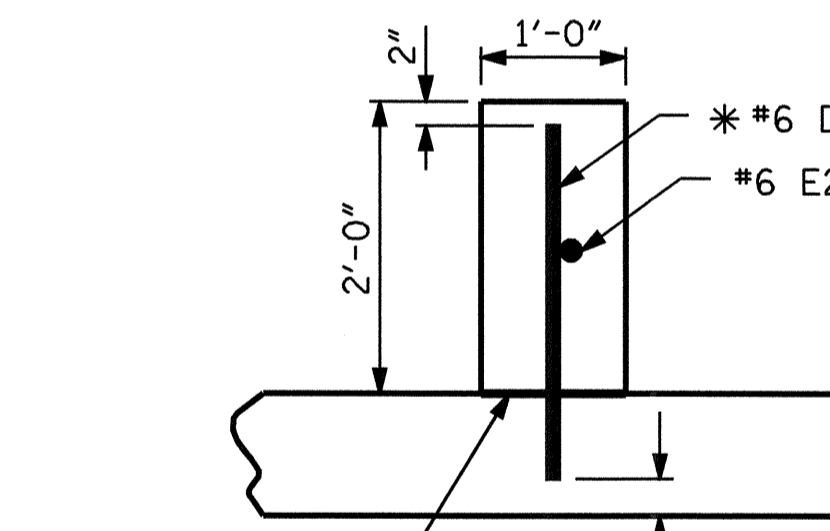


FLOOR PLAN

(SHOWING SILL DETAILS)

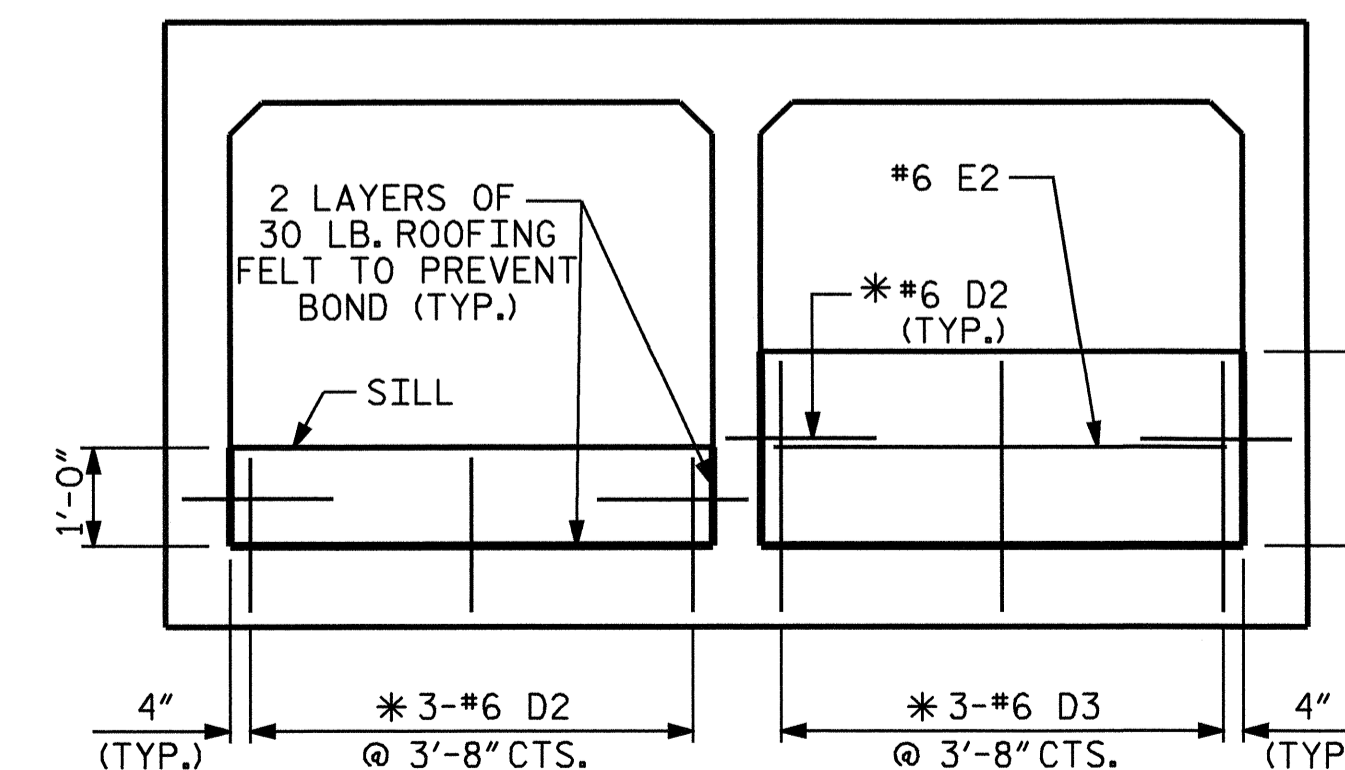


OUTLET END & INTERMEDIATE



2 LAYERS OF 30 LB. ROOFING FELT TO PREVENT BOND (TYP.)

SECTION THRU 2'-0" HIGH SILL



INLET END
CULVERT SILL DETAILS

PROJECT NO. B-4240
POLK COUNTY
STATION: 10+41.00 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 8 FT. X 7 FT.
CONCRETE BOX CULVERT
90° SKEW

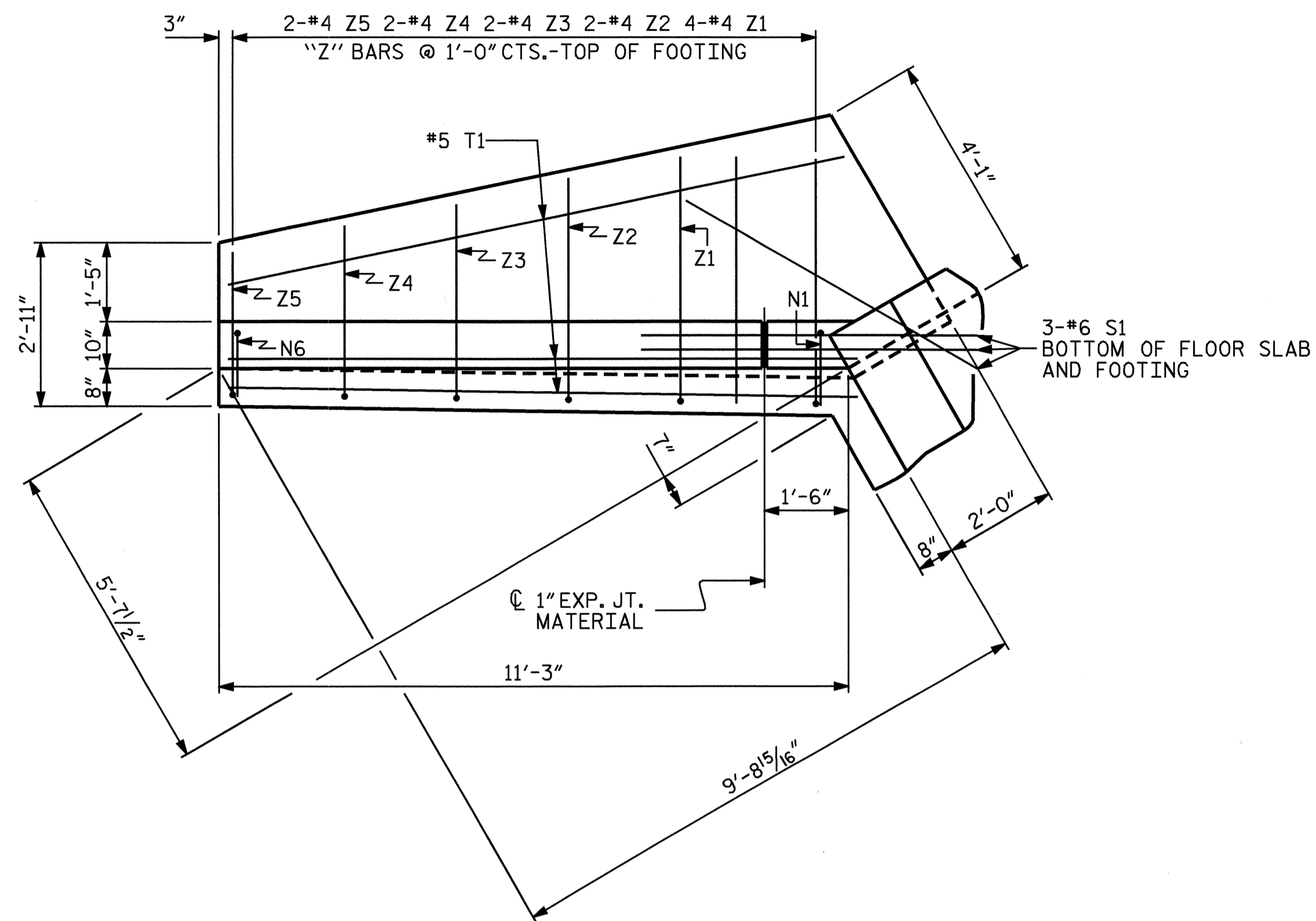


REVISIONS

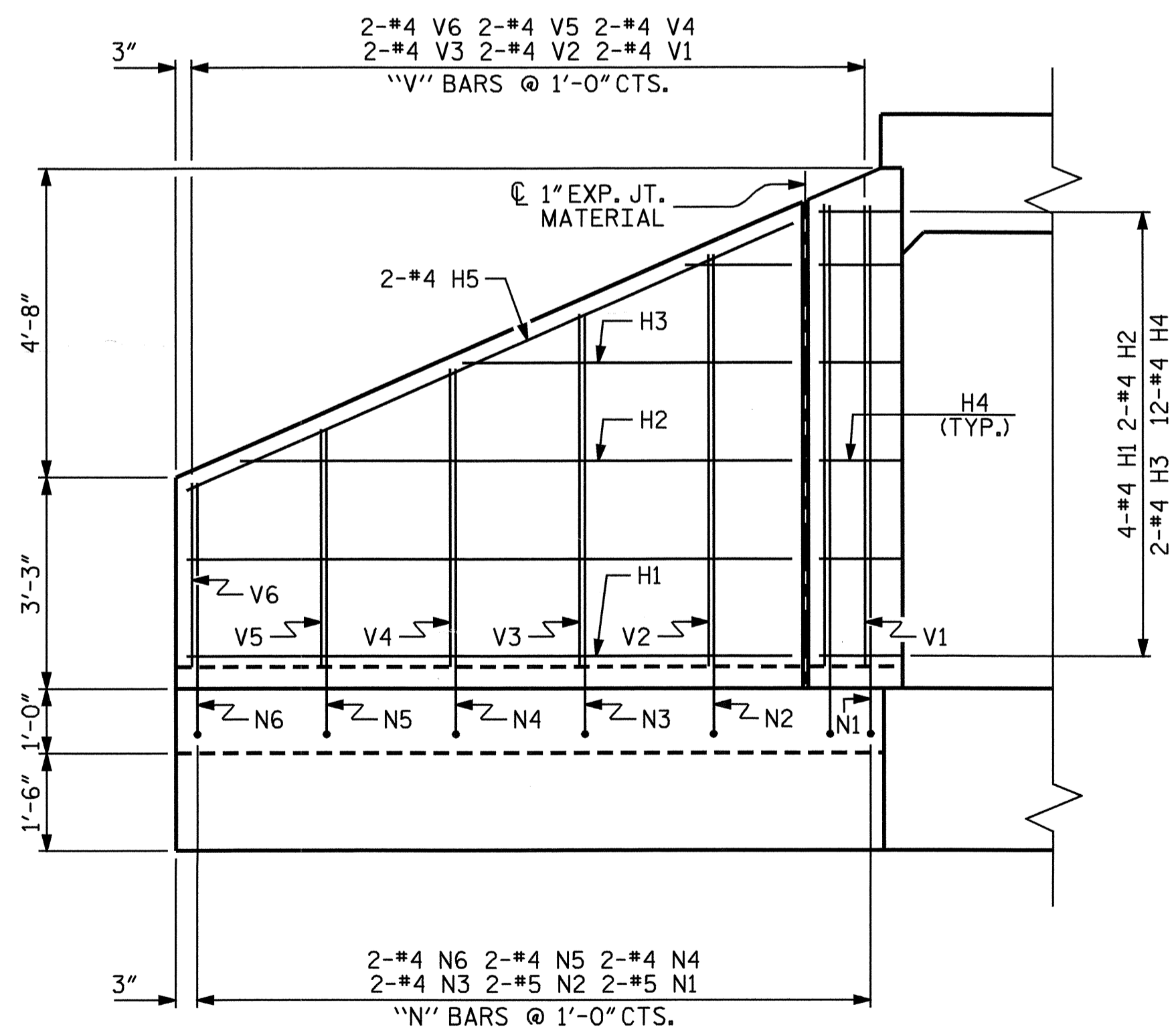
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	
C-3	
TOTAL SHEETS	5

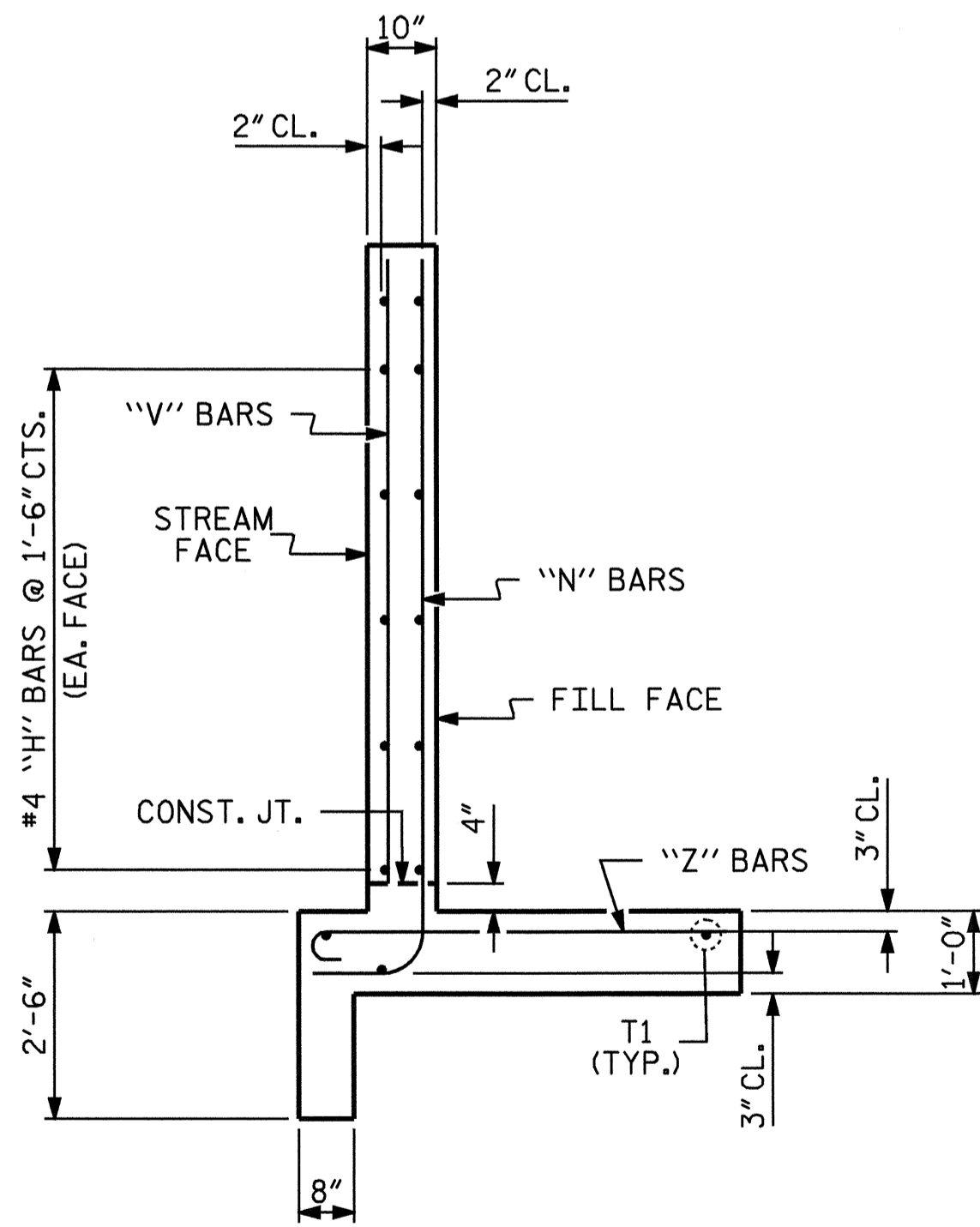
DRAWN BY: J.L. WALTON DATE: 6/17/05
CHECKED BY: K.K. PUROHIT DATE: 6/24/05



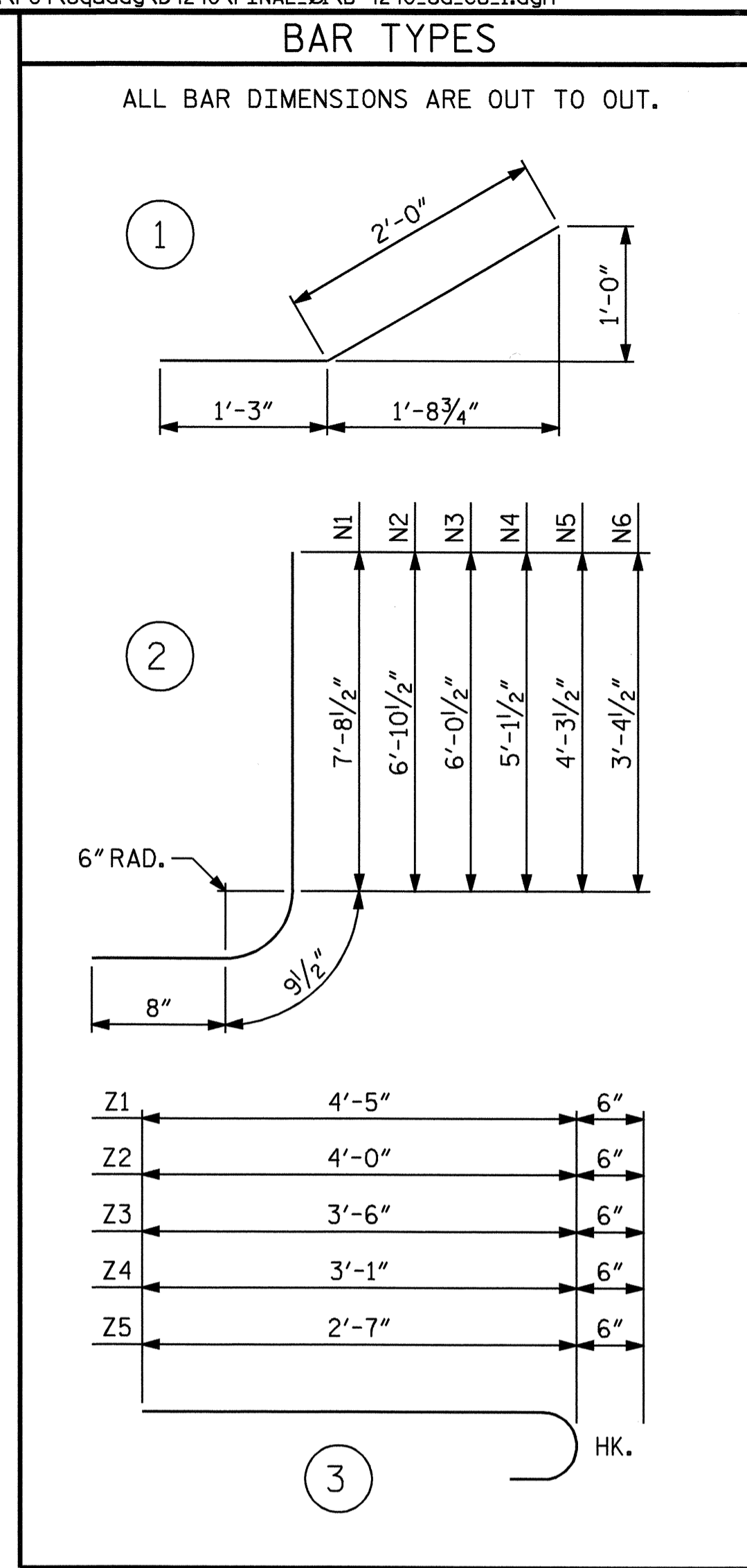
PLAN



ELEVATION



TYPICAL WING SECTION



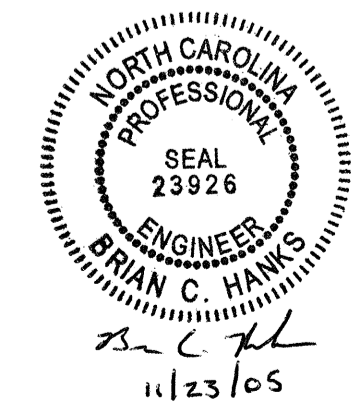
BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	9'-4"	75
H2	6	#4	STR	8'-6"	34
H3	6	#4	STR	5'-1"	20
H4	36	#4	1	3'-3"	78
H5	6	#4	STR	10'-3"	41
N1	6	#5	2	9'-2"	57
N2	6	#5	2	8'-4"	52
N3	6	#4	2	7'-6"	30
N4	6	#4	2	6'-7"	26
N5	6	#4	2	5'-9"	23
N6	6	#4	2	4'-10"	19
S1	9	#6	STR	6'-0"	81
T1	9	#5	STR	11'-3"	106
V1	6	#4	STR	7'-1"	28
V2	6	#4	STR	6'-4"	25
V3	6	#4	STR	5'-5"	22
V4	6	#4	STR	4'-7"	18
V5	6	#4	STR	3'-8"	15
V6	6	#4	STR	2'-10"	11
Z1	12	#4	3	4'-11"	40
Z2	6	#4	3	4'-6"	18
Z3	6	#4	3	4'-0"	16
Z4	6	#4	3	3'-7"	14
Z5	6	#4	3	3'-1"	12

TOTAL REINFORCING STEEL FOR 3 WINGS 861 LBS

CLASS A CONCRETE
 3 WINGS 12.8 CY
 2 HEADWALLS 1.7 CY
 2 END CURTAIN WALLS 1.9 CY
 TOTAL 16.4 CY

PROJECT NO. B-4240
 POLK COUNTY
 STATION: 10+41.00 -L-

SHEET 4 OF 5

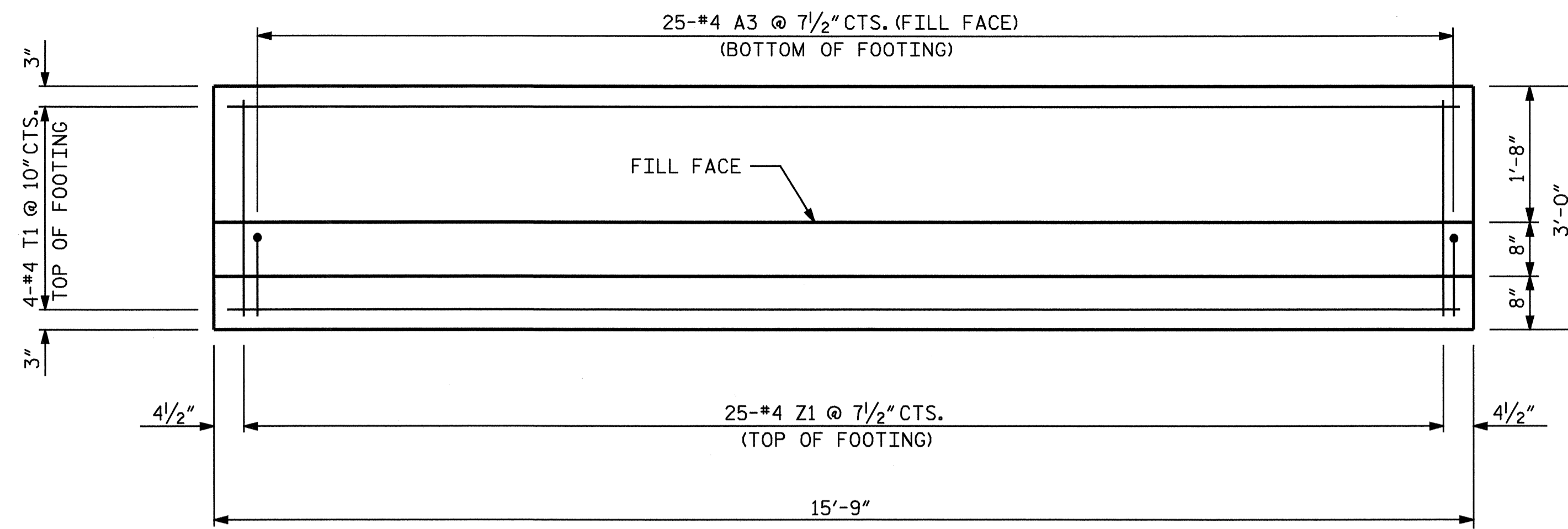


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD WINGS
 FOR
 CONCRETE BOX CULVERT
 H = 7'-0" 90° SKEW

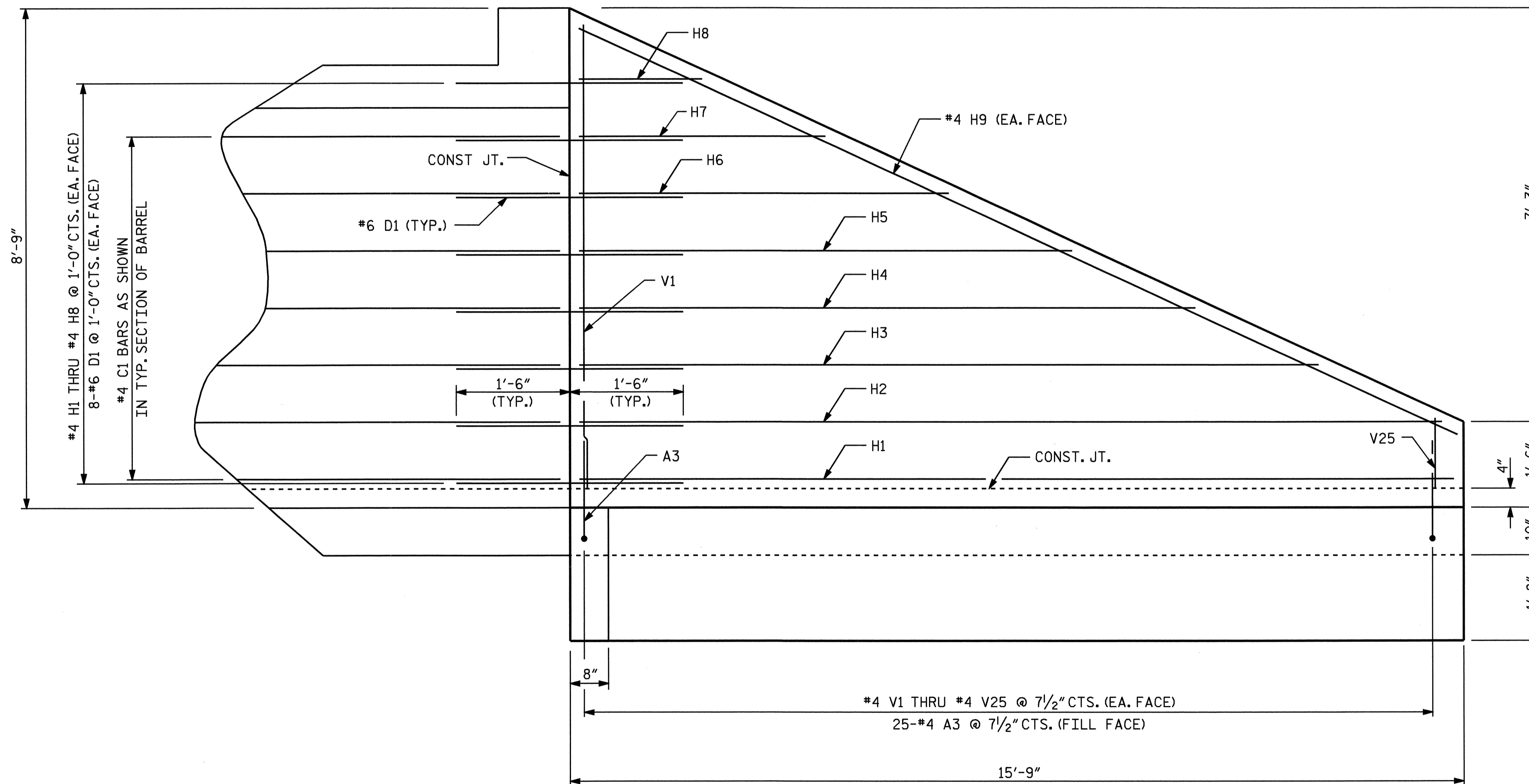
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	C-4	
1			3			TOTAL SHEETS 5	
2			4				

ASSEMBLED BY : J.L. WALTON DATE : 6/17/05
 CHECKED BY : K.K. PUROHIT DATE : 6/24/05
 DRAWN BY : CCJ 10/99
 CHECKED BY : RWW 03/00

STD. NO. CW9007



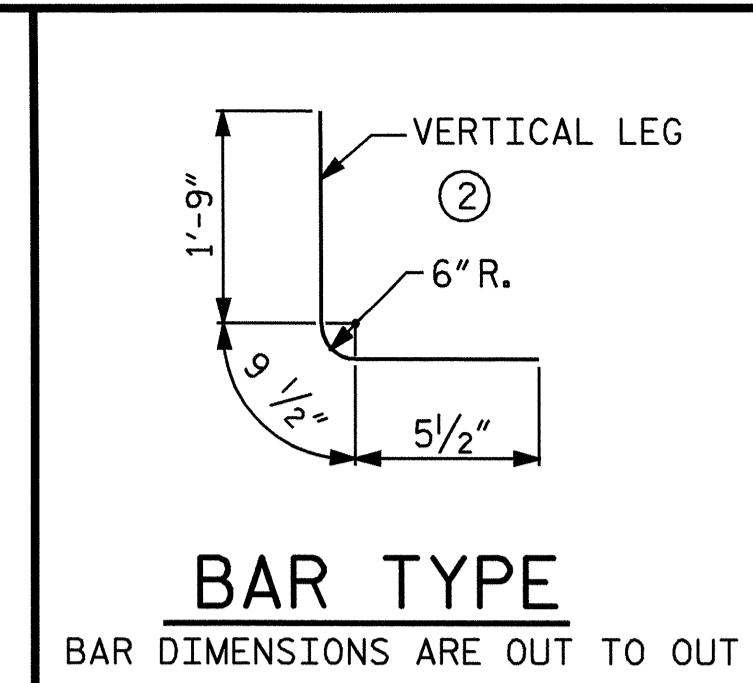
PLAN OF FOOTING



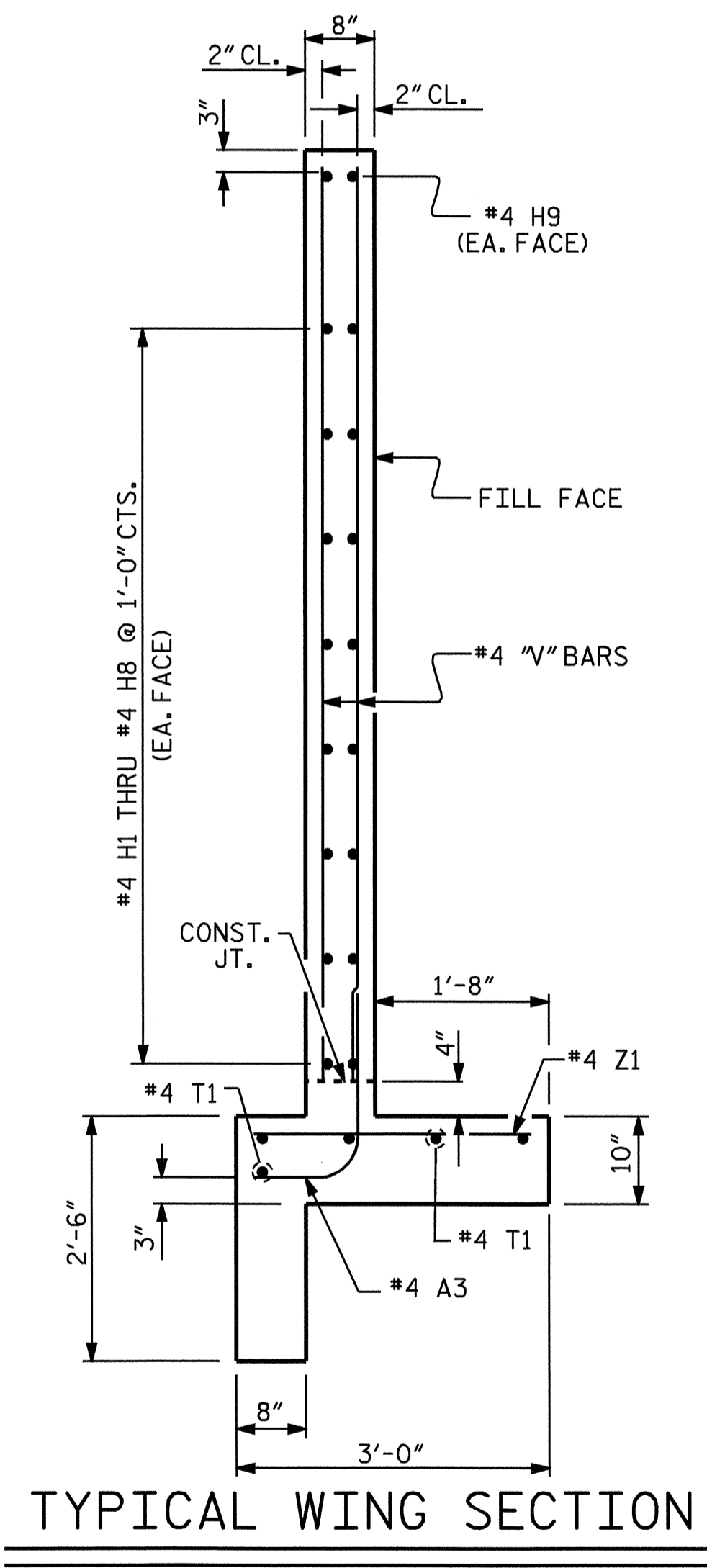
ELEVATION

(LOOKING AT STREAM FACE SIDE OF WING)

NOTE: #6 D1 AND #4 C1 BARS ARE INCLUDED IN THE BILL OF MATERIAL FOR THE BARREL SECTION.



BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A3	25	#4	2	3'-0"	50
H1	2	#4	STR	15'-4"	20
H2	2	#4	STR	15'-0"	20
H3	2	#4	STR	12'-9"	17
H4	2	#4	STR	10'-7"	14
H5	2	#4	STR	8'-5"	11
H6	2	#4	STR	6'-3"	8
H7	2	#4	STR	4'-1"	5
H8	2	#4	STR	1'-11"	3
H9	2	#4	STR	17'-1"	23
T1	5	#4	STR	15'-5"	51
V1	2	#4	STR	8'-0"	11
V2	2	#4	STR	7'-9"	10
V3	2	#4	STR	7'-5"	10
V4	2	#4	STR	7'-2"	10
V5	2	#4	STR	6'-10"	9
V6	2	#4	STR	6'-7"	9
V7	2	#4	STR	6'-4"	8
V8	2	#4	STR	6'-0"	8
V9	2	#4	STR	5'-9"	7
V10	2	#4	STR	5'-5"	7
V11	2	#4	STR	5'-2"	7
V12	2	#4	STR	4'-10"	6
V13	2	#4	STR	4'-7"	6
V14	2	#4	STR	4'-3"	6
V15	2	#4	STR	4'-0"	5
V16	2	#4	STR	3'-8"	5
V17	2	#4	STR	3'-5"	5
V18	2	#4	STR	3'-2"	4
V19	2	#4	STR	2'-10"	4
V20	2	#4	STR	2'-7"	3
V21	2	#4	STR	2'-3"	3
V22	2	#4	STR	2'-0"	3
V23	2	#4	STR	1'-8"	2
V24	2	#4	STR	1'-5"	2
V25	2	#4	STR	1'-1"	1
Z1	25	#4	STR	2'-8"	45
REINFORCING STEEL					= 418 LBS.
CLASS A CONCRETE					
1 WING					2.0 CY
1 FOOTING WITH CURTAIN WALL					2.1 CY
TOTAL					4.1 CY

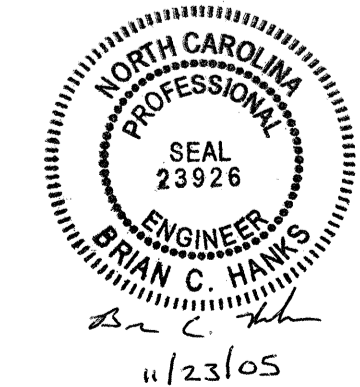


TYPICAL WING SECTION

PROJECT NO. B-4240
POLK COUNTY
 STATION: 10+41.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SPECIAL WING OUTLET END					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 5



DRAWN BY: J.L. WALTON DATE: 6/17/05
 CHECKED BY: K.K. PUROHIT DATE: 6/24/05

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. 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