TIP PROJECT: U-3344A

CONTRACT NO.: C201744

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3344A		

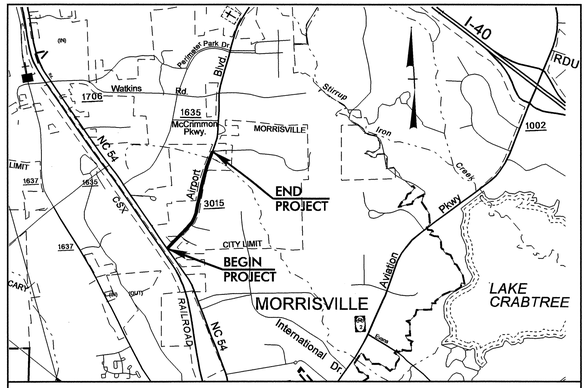
WBS NO.	F. A. PROJ. NO.	DESCRIPTION
34934.1.1		PE
34934.2.1		R/W, UTIL
34934.3.3		CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

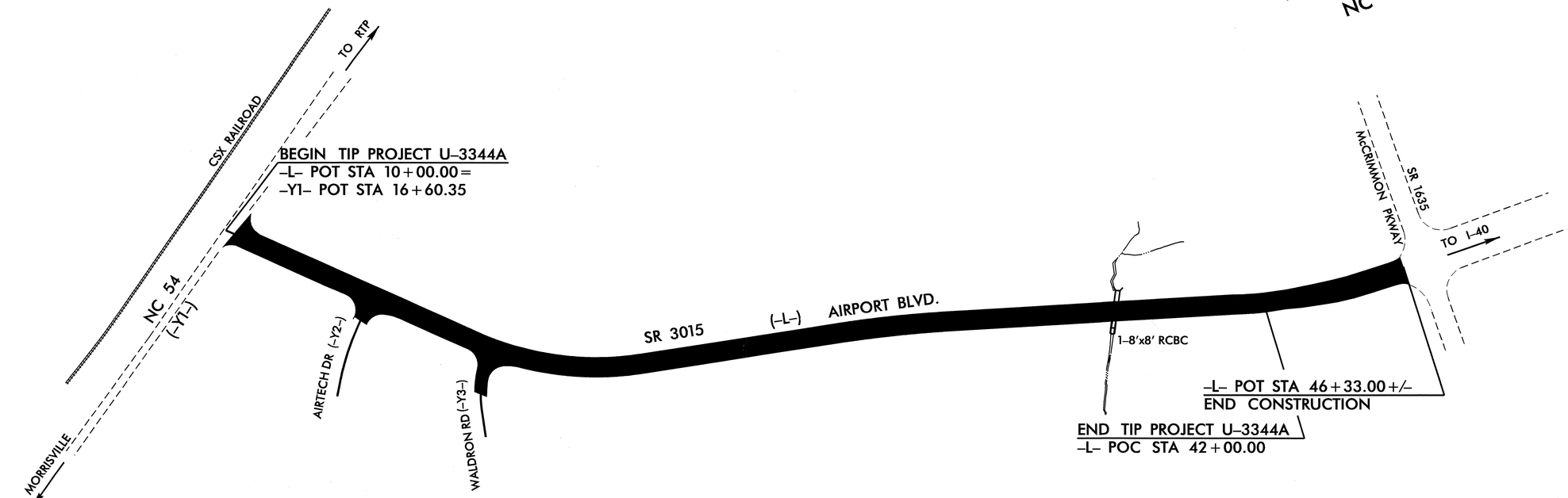
LOCATION: ***MORRISVILLE – SR 3015 (AIRPORT BLVD.) FROM NC 54 TO McCRIMMON PARKWAY***

TYPE OF WORK: ***WIDENING, GRADING, DRAINAGE, PAVING, SIGNALS, AND CULVERT***



VICINITY MAP

NAD 83
NC GRID



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN DATA

ADT 2006 = 16,500
ADT 2026 = 37,800
DHV = 11 %
D = 55 %
*T = 7 %
V = 50 MPH
FUNC CLASS = LOCAL
*(TTST 3 % + DUAL 4 %)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3344A = 0.606 Mile
TOTAL LENGTH TIP PROJECT U-3344A = 0.606 Mile

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

LETTING DATE:
MARCH 20, 2007

OMAR R. AZIZI, PE
PROJECT ENGINEER

TIMOTHY L. COGGINS, PE
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 14552 ENGINEER GREGORY R. PERFETTI
11.27.06

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER *P.E.*

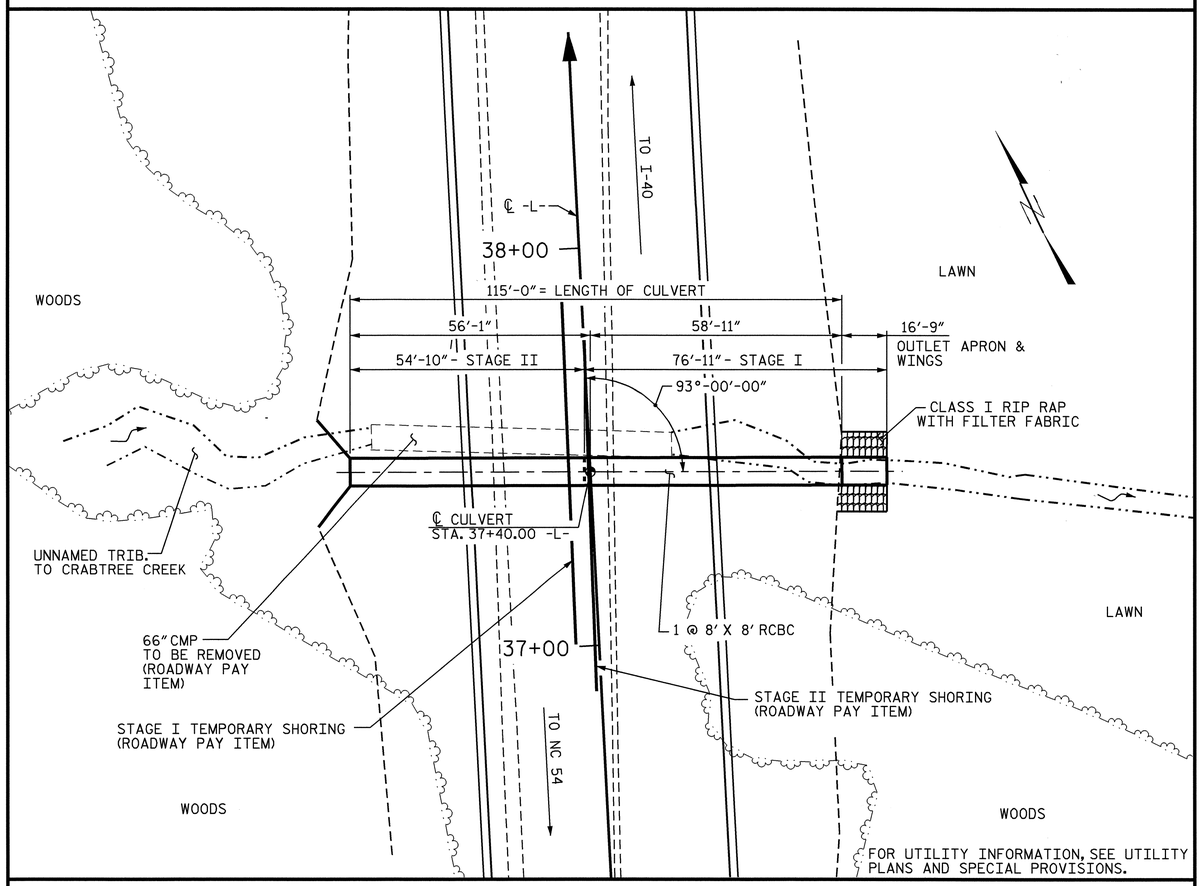
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

TYLIN INTERNATIONAL #USER# #DATE# #TIME# #FILE#

26-OCT-2006 08:38
R:\Structures\u3344a\padkins\Microstation\U3344A_SD_CU_01.
padkins

BM 2: "X" CUT IN CORNER OF CONCRETE PAD AT RESEARCH TRIANGLE INDUSTRIAL CENTER 106.7387 FT. LEFT OF -L- STA. 23+09.26, ELEV. 345.59, NGVD 29.



LOCATION SKETCH

HYDRAULIC DATA

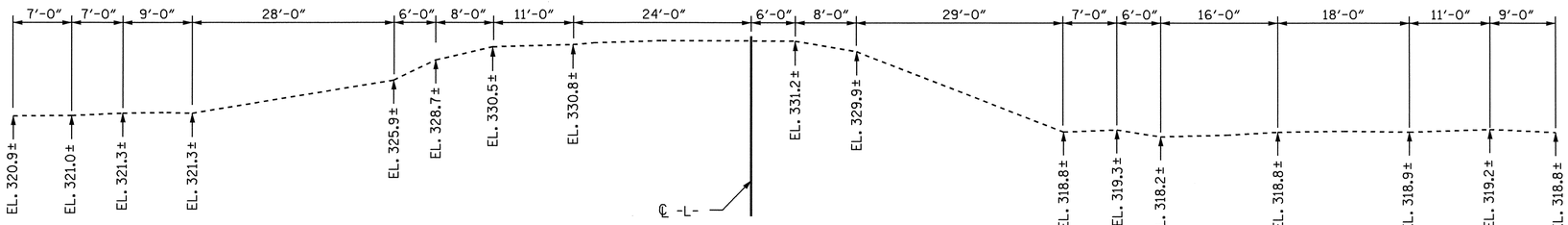
DESIGN DISCHARGE	=	530 cfs
FREQUENCY OF DESIGN FLOOD	=	50 YR
DESIGN HIGH WATER ELEVATION	=	328.4'
DRAINAGE AREA	=	166 AC.
BASIC DISCHARGE (Q100)	=	600 cfs
BASIC HIGH WATER ELEVATION	=	329.5'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	920 cfs
FREQUENCY OF OVERTOPPING FLOOD	=	500YR-
OVERTOPPING FLOOD ELEVATION	=	334.7'

GRADE DATA

GRADE POINT ELEVATION @ STA. 37+40.00 -L-	=	334.972
BED ELEVATION @ STA. 37+40.00 -L-	=	318.650
ROADWAY SLOPES	=	2 : 1



PROFILE ALONG ℄ CULVERT

STRUCTURE QUANTITIES STAGE I

CLASS A CONCRETE		
BARREL @ .86 CY/FT	51.7	C.Y.
OUTLET WINGS ETC.	9.2	C.Y.
TOTAL	60.9	C.Y.
REINFORCING STEEL		
BARREL AND OUTLET WINGS ETC.	8990	LBS.
TOTAL	8990	LBS.
FOUNDATION CONDITION MATERIAL	51	TONS
FILTER FABRIC FOR DRAINAGE	36	SQ. YDS.
PLAIN RIP RAP CLASS I (2'-0" THICK)	33	TONS

STRUCTURE QUANTITIES STAGE II

CLASS A CONCRETE		
BARREL @ .86 CY/FT	47.2	C.Y.
INLET WINGS ETC.	11.5	C.Y.
TOTAL	58.7	C.Y.
REINFORCING STEEL		
BARREL	6801	LBS.
INLET WINGS ETC.	721	LBS.
TOTAL	7522	LBS.
FOUNDATION CONDITION MATERIAL	36	TONS

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
STAGE I	60.9	C.Y.
STAGE II	58.7	C.Y.
TOTAL	119.6	C.Y.
REINFORCING STEEL		
STAGE I	8990	LBS.
STAGE II	7522	LBS.
TOTAL	16512	LBS.
CULVERT EXCAVATION	LUMP SUM	
FOUNDATION COND. MAT'L.		
STAGE I	51	TONS
STAGE II	36	TONS
TOTAL	87	TONS
FILTER FABRIC FOR DRAINAGE	36	SQ. YDS.
PLAIN RIP RAP CLASS I (2'-0" THICK)	33	TONS

NOTES

ASSUMED LIVE LOAD ----------HS20 OR ALTERNATE LOADING.

DESIGN FILL----------7.91'

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. STAGE I OUTLET WING FLOOR & APRON AND FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE STAGE I WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALL.
3. STAGE II WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS.
4. THE REMAINING PORTIONS OF THE STAGE II WALLS AND 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 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.

TRAFFIC ON SR 3015 (AIRPORT BLVD.) SHALL BE MAINTAINED. IN ORDER TO MAINTAIN TRAFFIC THE CULVERT SHALL BE CONSTRUCTED IN STAGES. SEE TRAFFIC CONTROL PLANS.

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.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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

AT THE CONTRACTOR'S OPTION, THE VERTICAL CONST. JT. 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.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

STAGE I: FOR LIMITS OF TEMPORARY SHORING, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING, SEE ROADWAY PLANS.

STAGE II: FOR LIMITS OF TEMPORARY SHORING, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING, SEE ROADWAY PLANS.

THE 18"Ø R.C. PIPE THRU THE SIDEWALL OF THE CULVERT SHALL BE LOCATED BY THE ENGINEER. THE REINFORCING STEEL SHALL BE FIELD BENT AS NECESSARY TO CLEAR THE PIPE.

REVISED 11-13-91 BY E.L.R. CHECKED BY G.R.P.
ADDED 8-22-89

ASSEMBLED BY : PEGGY ADKINS DATE : 10-04
CHECKED BY : T. AVERETTE DATE : 10-04

DRAWN BY : R.W. WRIGHT DATE : AUG. 1989
CHECKED BY : A.R. BISSETTE DATE : AUG. 1989

NORTH CAROLINA PROFESSIONAL SEAL 12274 ENGINEER OMAR R. AZIZ
10/26/06

NORTH CAROLINA PROFESSIONAL SEAL 14045 ENGINEER TIMOTHY L. COGGINS
10/24/06

PROJECT NO. U-3344A

WAKE COUNTY

STATION: 37+40.00 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE BARREL 8 FT. X 8 FT. CONCRETE BOX CULVERT 93° SKEW

AUGUST 1989

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

STD. NO. CB11A

19-OCT-2006 10:11
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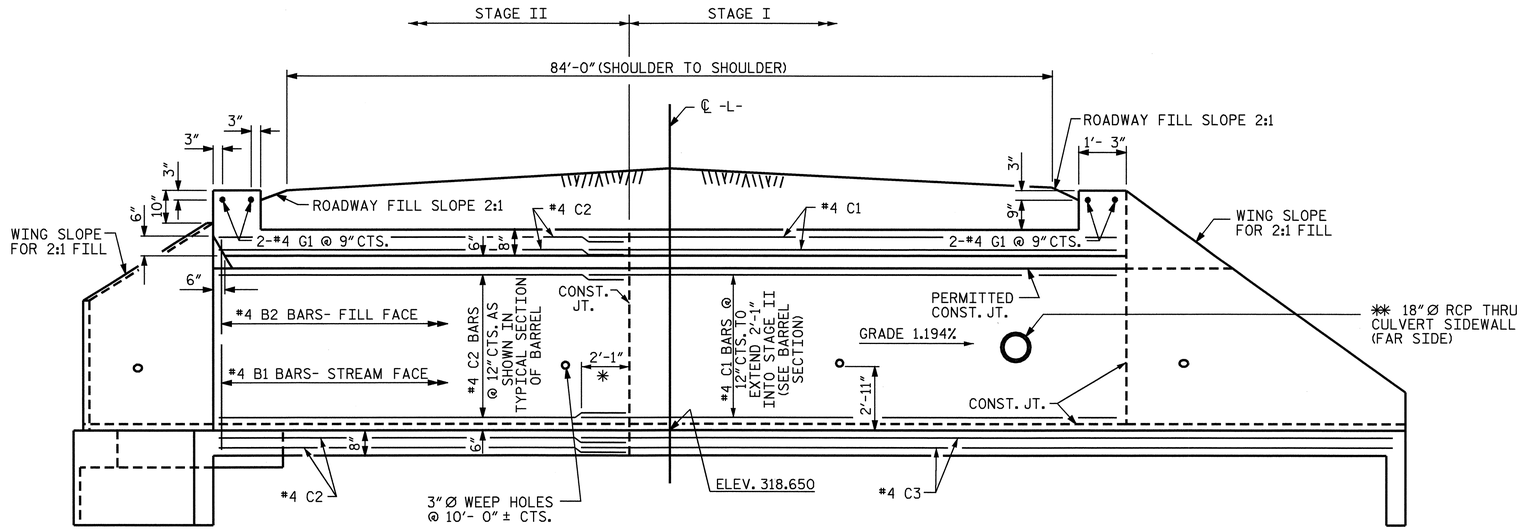
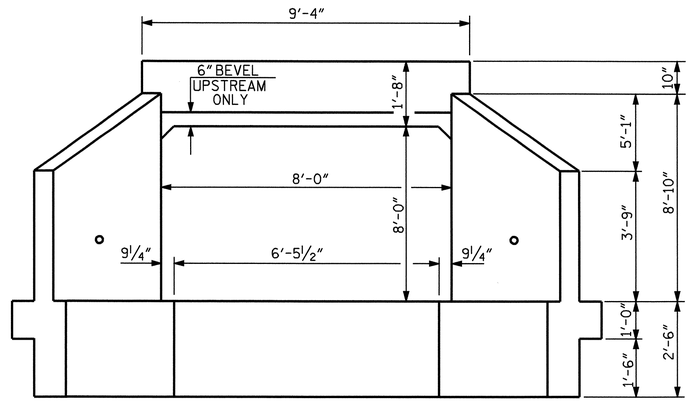
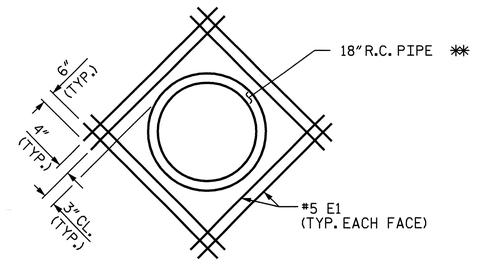
padkins



CULVERT SECTION NORMAL TO ROADWAY

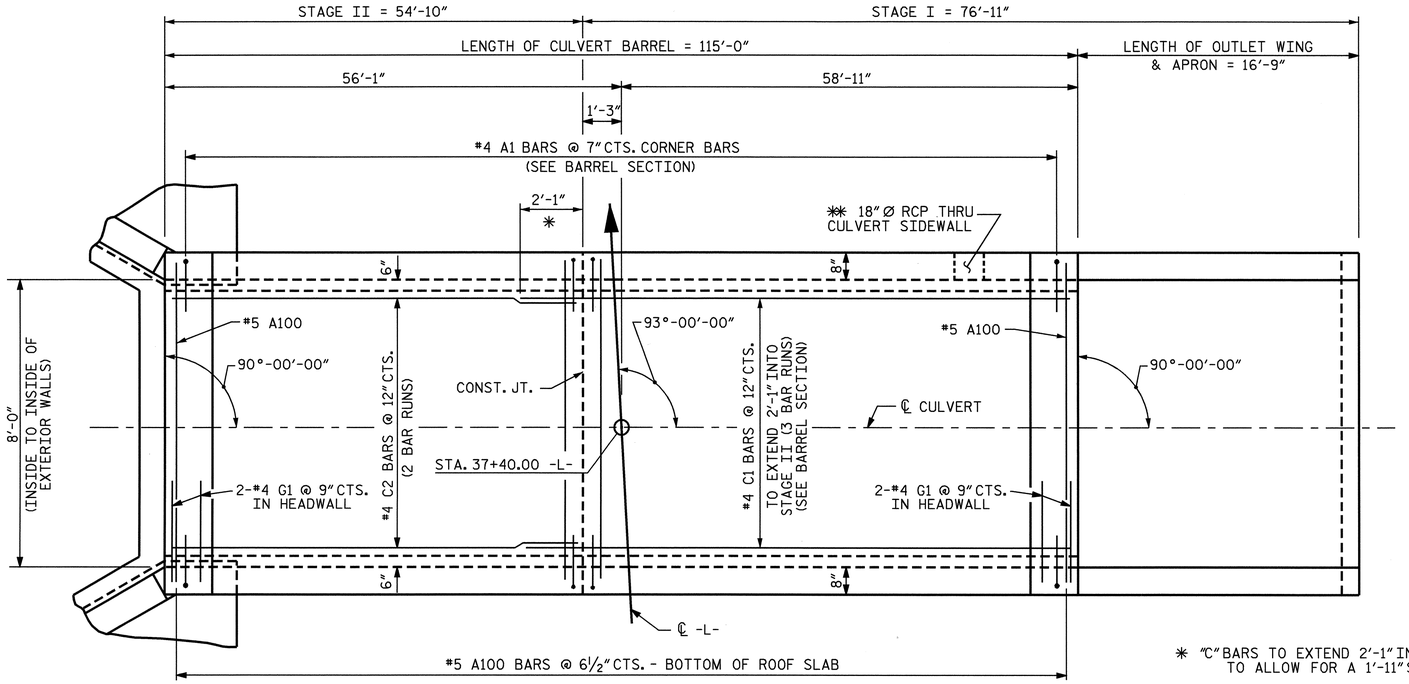


INLET END ELEVATION



DETAIL SHOWING REINFORCING STEEL AROUND PIPE

** SEE NOTE, SHEET 1 OF 5.



* "C" BARS TO EXTEND 2'-1" INTO STAGE II TO ALLOW FOR A 1'-11" SPLICE.

PLAN ROOF SLAB

PROJECT NO. U-3344A
WAKE COUNTY
STATION: 37+40.00 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE BARREL 8 FT. X 8 FT. CONCRETE BOX CULVERT 93° SKEW

1971

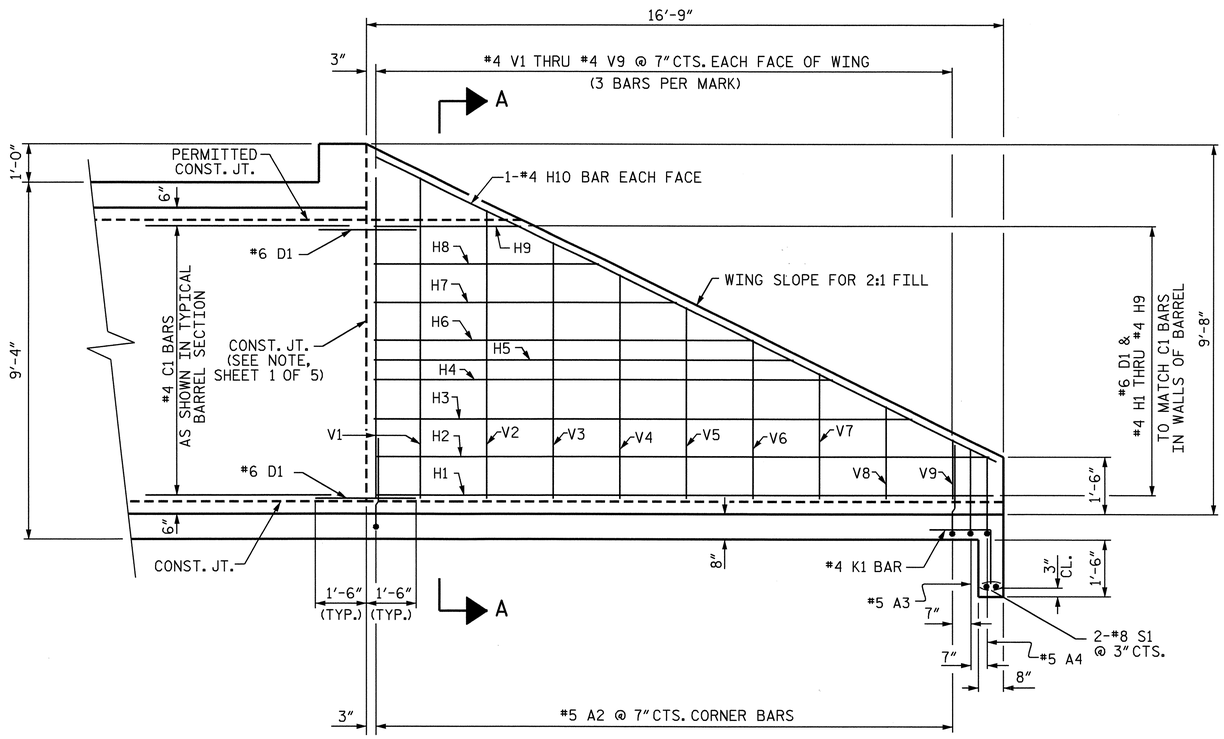
NORTH CAROLINA PROFESSIONAL SEAL 14045 ENGINEER TIMOTHY A. COGGINS
10/24/06

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

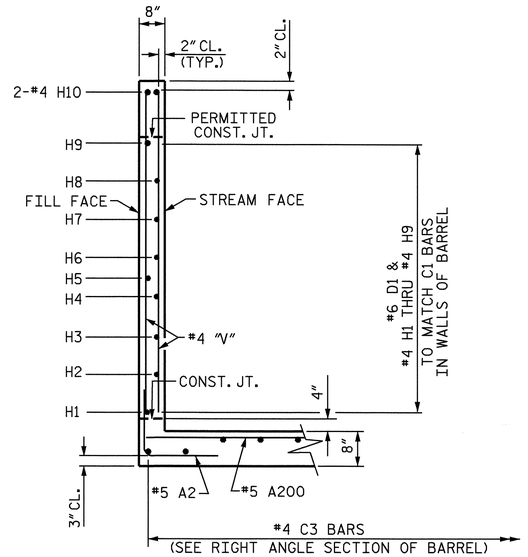
STD. NO. CB11

ASSEMBLED BY : PEGGY ADKINS DATE : 10-04
CHECKED BY : T. AVERETTE DATE : 10-04
DRAWN BY : R. WRIGHT DATE : AUG. 1989
CHECKED BY : A.R. BISSETTE DATE : AUG. 1989

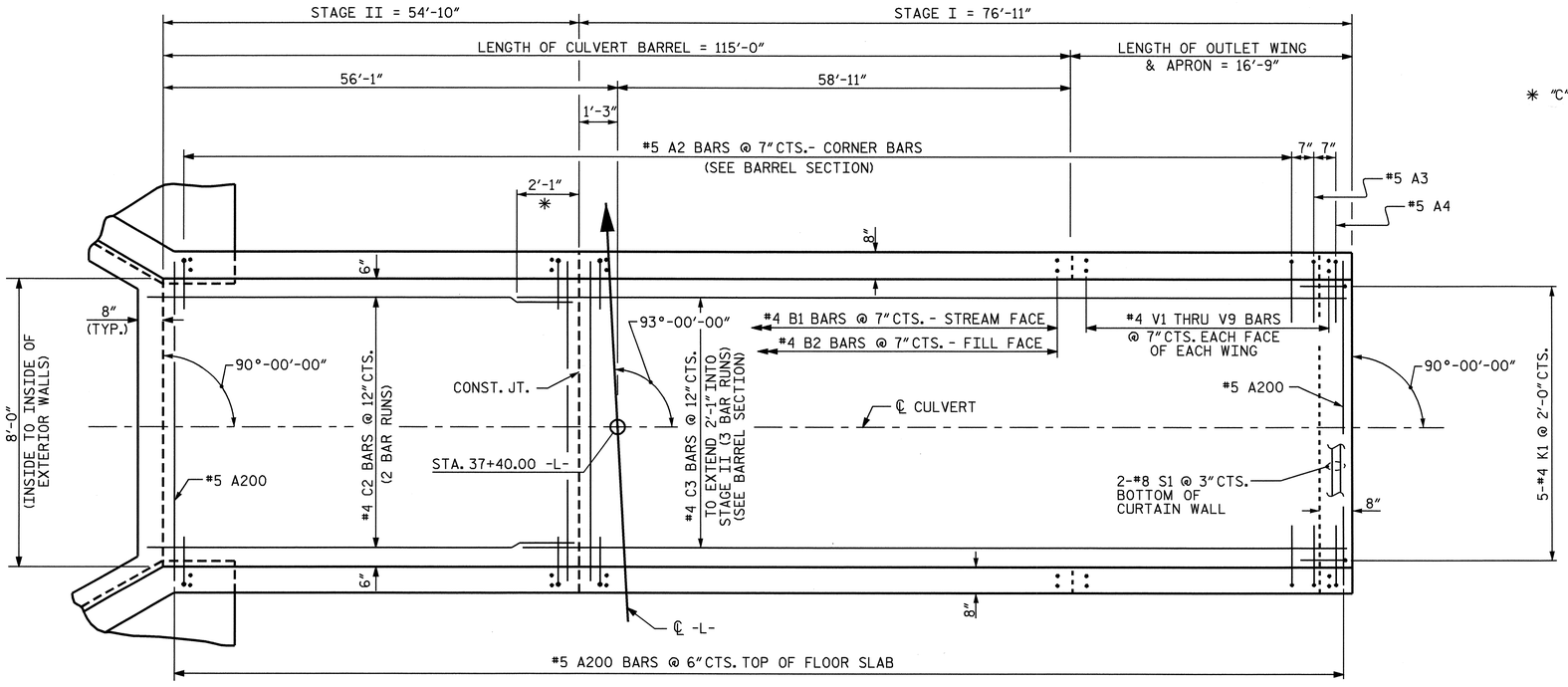
REVISED 8-28-92 BY E.L.R. CHECKED BY G.R.P.
REVISED 8-22-89 BY A.R.B. CHECKED BY C.R.K.
REDRAWN 8-22-1989
REVISED 11-19-99 BY M.M. CHECKED BY R.W.W.



ELEVATION OUTLET WING



SECTION A-A



PLAN FLOOR SLAB

* "C" BARS TO EXTEND 2'-1" INTO STAGE II TO ALLOW FOR A 1'-11" SPLICE.

PROJECT NO. U-3344A

WAKE COUNTY

STATION: 37+40.00 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

OUTLET WINGS FOR CONCRETE BOX CULVERT

H = 8'-0" SLOPE = 2:1

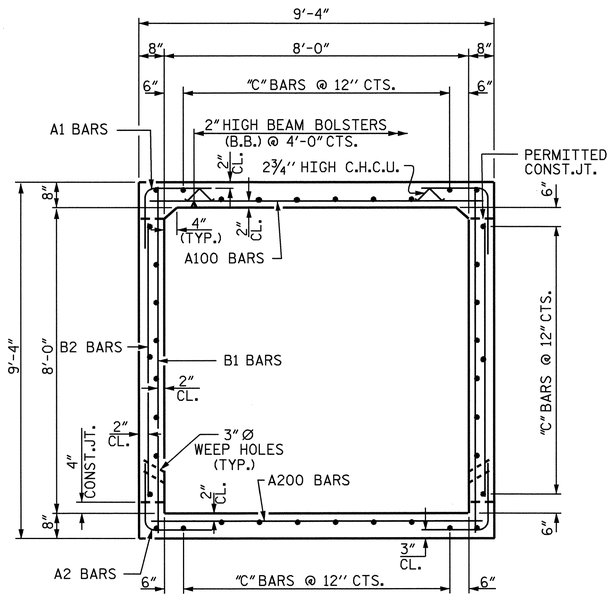
90° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 14045 ENGINEER TIMOTHY L. COGGINS

10/26/06

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

ASSEMBLED BY : PEGGY ADKINS DATE : 10-04
CHECKED BY : T. AVERETTE DATE : 10-04



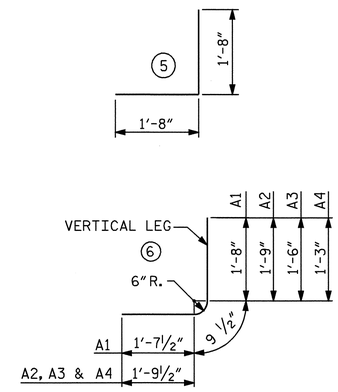
RIGHT ANGLE SECTION OF BARREL

THERE ARE 38 "C" BARS IN SECTION OF BARREL

SPLICE LENGTHS CHART

BAR	SIZE	SPLICE LENGTH
B1	4	1'-9"
"C"	4	1'-11"

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BARREL & OUTLET WINGS BILL OF MATERIAL

STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	206	4	6	4'-1"	562
A2	260	5	6	4'-4"	1175
A3	2	5	6	4'-1"	9
A4	2	5	6	3'-10"	8
A100	111	5	STR	8'-11"	1032
A200	154	5	STR	8'-11"	1432
B1	206	4	STR	8'-10"	1216
B2	206	4	STR	7'-4"	1009
C1	84	4	STR	22'-0"	1234
C3	30	4	STR	27'-7"	553
D1	18	6	STR	3'-0"	81
E1	16	5	STR	4'-0"	67
G1	2	4	STR	9'-0"	12
H1	2	4	STR	16'-5"	22
H2	2	4	STR	16'-2"	22
H3	2	4	STR	14'-1"	19
H4	2	4	STR	12'-1"	16
H5	2	4	STR	11'-0"	15
H6	2	4	STR	10'-0"	13
H7	2	4	STR	8'-0"	11
H8	2	4	STR	5'-11"	8
H9	2	4	STR	3'-10"	5
H10	4	4	STR	18'-3"	49
K1	5	4	5	3'-4"	11
V1	12	4	STR	8'-5"	67
V2	12	4	STR	7'-7"	61
V3	12	4	STR	6'-9"	54
V4	12	4	STR	5'-10"	47
V5	12	4	STR	5'-0"	40
V6	12	4	STR	4'-2"	33
V7	12	4	STR	3'-4"	27
V8	12	4	STR	2'-5"	19
V9	12	4	STR	1'-7"	13
S1	2	8	STR	9'-0"	48

REINFORCING STEEL FOR BARREL & OUTLET WINGS STAGE I — 8990 LBS.

CLASS A CONCRETE BARREL — 51.7 C.Y.

OUTLET WINGS & APRON — 8.5 C.Y.

1 HEADWALL — 0.4 C.Y.

1 END CURTAIN WALL — 0.3 C.Y.

BARREL BILL OF MATERIAL ▼

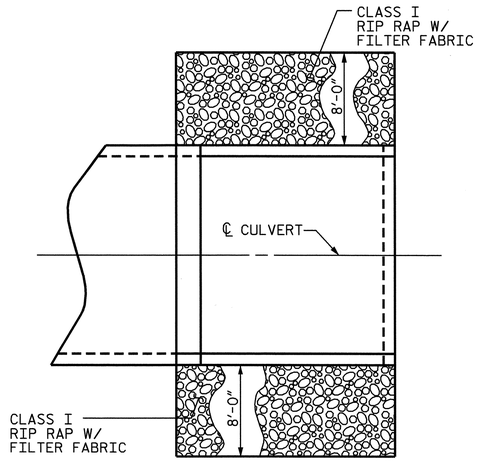
STAGE II

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	188	4	6	4'-1"	513
A2	188	5	6	4'-4"	850
A100	101	5	STR	8'-11"	939
A200	110	5	STR	8'-11"	1023
B1	188	4	STR	8'-10"	1109
B2	188	4	STR	7'-4"	921
C2	76	4	STR	28'-3"	1434
G1	2	4	STR	9'-0"	12

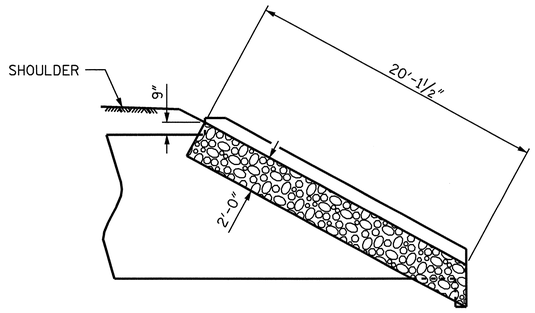
REINFORCING STEEL FOR BARREL STAGE II — 6801 LBS.

CLASS A CONCRETE BARREL — 47.2 C.Y.

▼ SEE SHEET 5 OF 5 FOR BILL OF MATERIAL FOR WINGS, ETC.



PLAN VIEW



ELEVATION VIEW

OUTLET WING RIP RAP DETAILS

ASSEMBLED BY : PEGGY ADKINS DATE : 10-04
CHECKED BY : T. AVERETTE DATE : 10-04

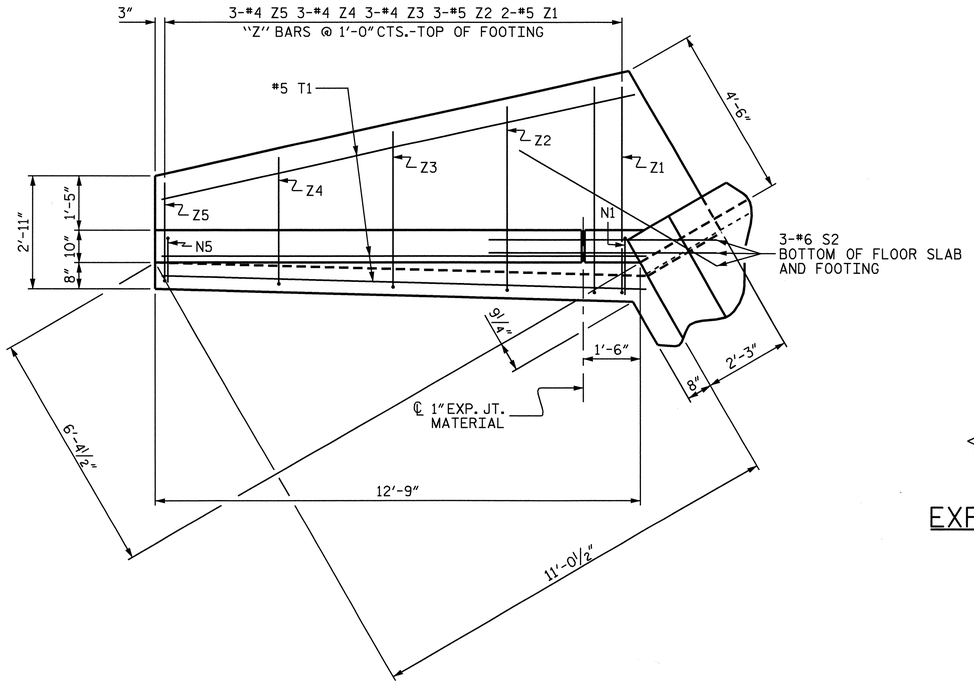
NORTH CAROLINA PROFESSIONAL SEAL 14045 ENGINEER TIMOTHY L. COGGINS
10/26/06

PROJECT NO. U-3344A
WAKE COUNTY
STATION: 37+40.00 -L-
SHEET 4 OF 5

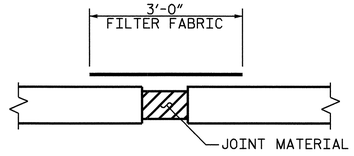
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE BARREL
8 FT. X 8 FT.
CONCRETE BOX CULVERT
93° SKEW

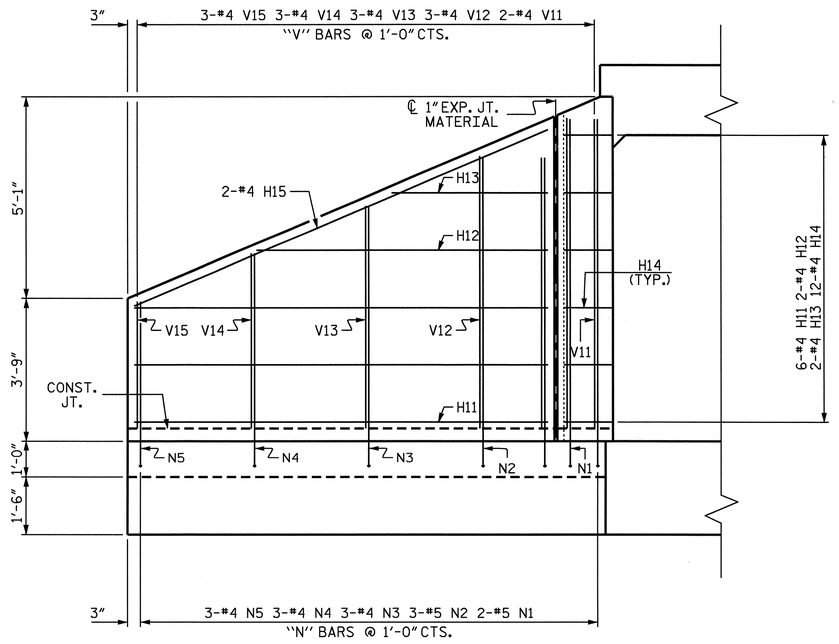
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-4
1			3			TOTAL SHEETS
2			4			5



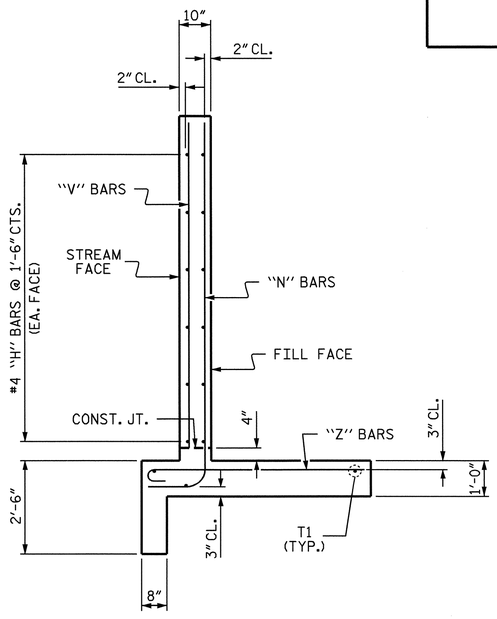
PLAN



EXPANSION JOINT DETAIL



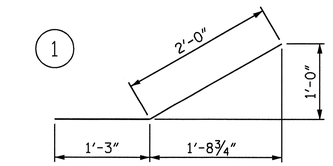
ELEVATION

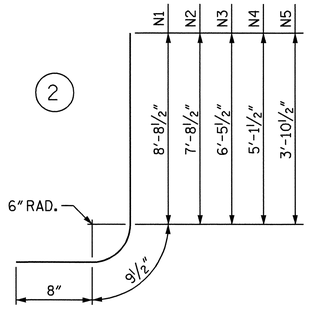


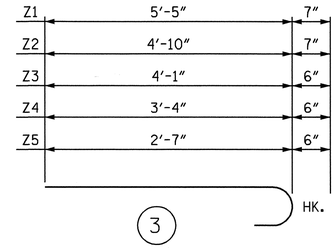
TYPICAL WING SECTION

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.







BILL OF MATERIAL
STAGE II

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H11	12	#4	STR	10'-10"	87
H12	4	#4	STR	7'-8"	20
H13	4	#4	STR	4'-1"	11
H14	24	#4	1	3'-3"	52
H15	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
S2	6	#6	STR	6'-0"	54
T1	6	#5	STR	12'-9"	80
V11	4	#4	STR	8'-1"	22
V12	6	#4	STR	7'-1"	28
V13	6	#4	STR	5'-10"	23
V14	6	#4	STR	4'-7"	18
V15	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 721 LBS

CLASS A CONCRETE
2 WINGS 10.7 CY
1 HEADWALL 0.4 CY
1 END CURTAIN WALL 0.4 CY
TOTAL 11.5 CY

PROJECT NO. U-3344A
WAKE COUNTY
STATION: 37+40.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

INLET WINGS FOR CONCRETE BOX CULVERT

H = 8'-0" SLOPE = 2:1
90° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 14045 ENGINEER TIMOTHY J. COGGINS
10/26/06

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

STD. NO. CW9008

ASSEMBLED BY : PEGGY ADKINS	DATE : 10-04
CHECKED BY : T. AVERETTE	DATE : 10-04
DRAWN BY : CCJ	10/99
CHECKED BY : RWW	03/00

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. FINS 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

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