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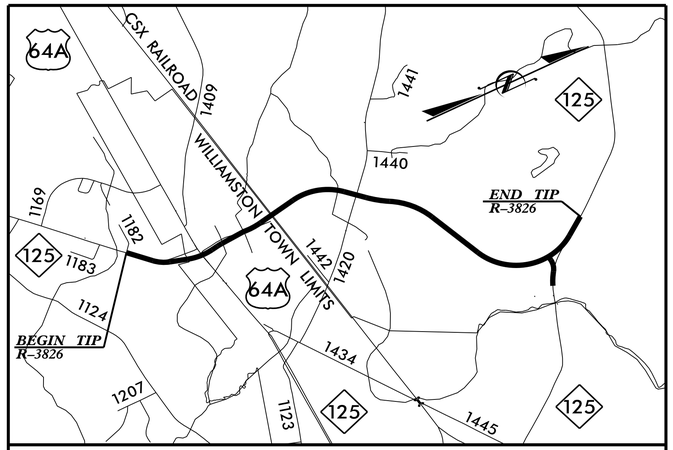
This file or an individual page shall not be considered a certified document.

TIP PROJECT: R–3826

CONTRACT: C203830



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MARTIN COUNTY

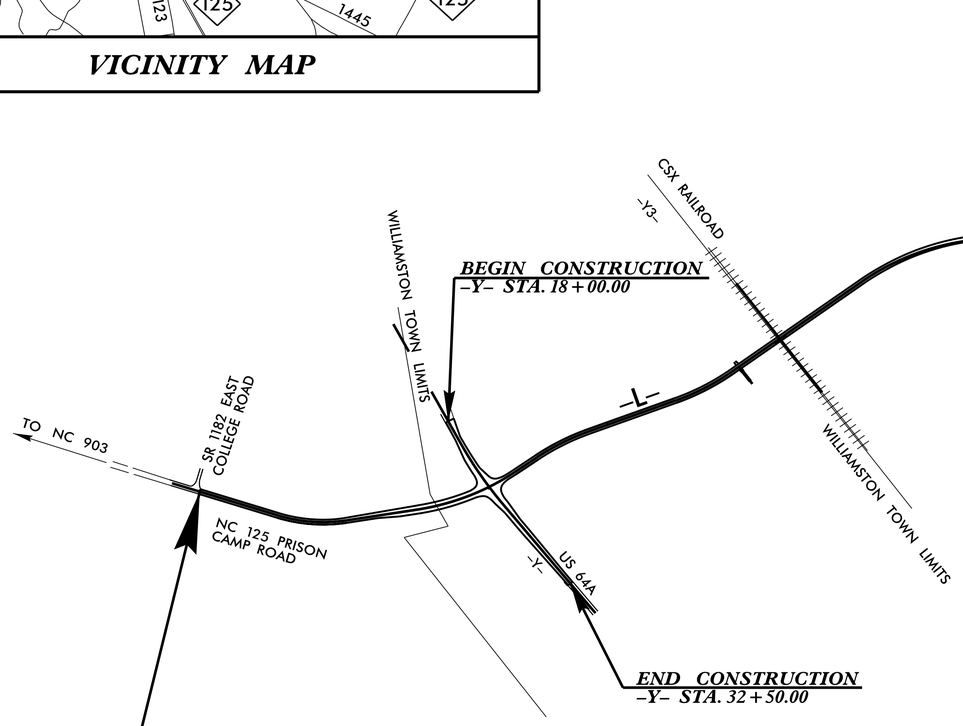
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–3826		

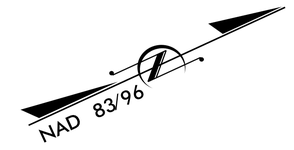
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34553.1.1	STP–0125(1)	PE
34553.4.FR1	STP–0125(1)	R/W
34553.4.FRU1	STP–0125(1)	UTILITIES
34553.2.2	STP–0125(1)	CONST

LOCATION: NC 125 WILLIAMSTON BYPASS FROM SR 1182 (EAST COLLEGE ROAD) TO NC 125 NORTHWEST OF WILLIAMSTON

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

CULVERT





DESIGN DATA

ADT 2017 = 7,450
ADT 2037 = 11,950
D = 60 %
K = 11 %
T = 11 % *
V = 60 MPH
* (TTST 4% + DUALS 7%)
FUNC CLASS = MAJOR COLLECTOR
REGIONAL TIER

PROJECT LENGTH

TOTAL PROJECT LENGTH TIP R–3826 = 2.595 MI.

Prepared In the Office of:
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

2012 STANDARD SPECIFICATIONS

LETTING DATE :

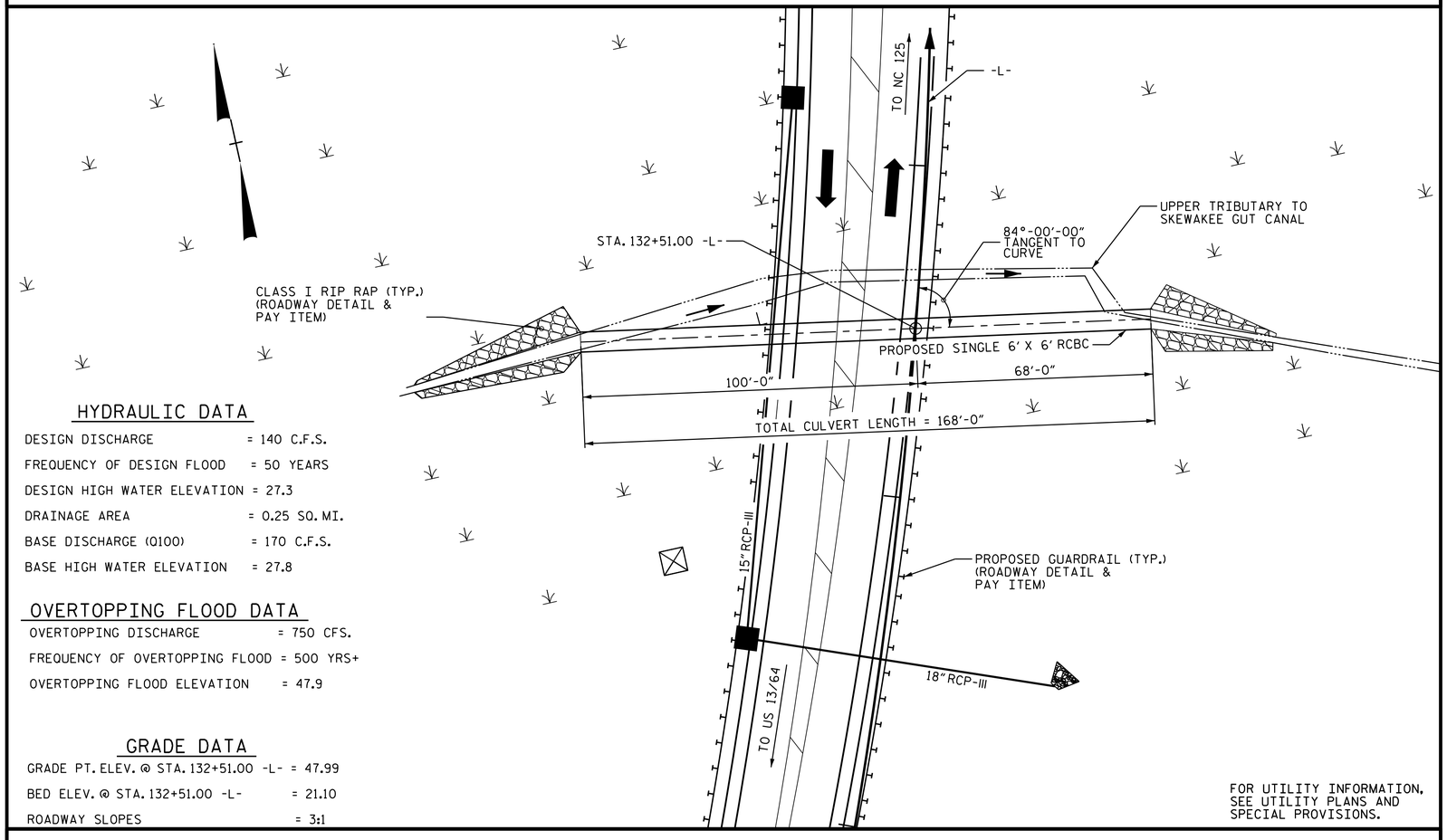
JANUARY 17, 2017

K.W. ALFORD, P.E.
PROJECT DESIGN ENGINEER

22-NOV-2016 09:25
R:\Structures\Plans\Plans\R3826_SD_CU.dgn
kalford

BM #13: RAILROAD SPIKE IN 18" OAK; STA. 131+72.60 -L-, 65.53' LT, ELEV. 34.33

F. A. PROJECT NO. STP-0125 (1)



HYDRAULIC DATA

DESIGN DISCHARGE	= 140 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 27.3
DRAINAGE AREA	= 0.25 SQ. MI.
BASE DISCHARGE (Q100)	= 170 C.F.S.
BASE HIGH WATER ELEVATION	= 27.8

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 750 CFS.
FREQUENCY OF OVERTOPPING FLOOD	= 500 YRS+
OVERTOPPING FLOOD ELEVATION	= 47.9

GRADE DATA

GRADE PT. ELEV. @ STA. 132+51.00 -L-	= 47.99
BED ELEV. @ STA. 132+51.00 -L-	= 21.10
ROADWAY SLOPES	= 3:1

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

NOTES

ASSUMED LIVE LOAD ----------HL-93 OR ALTERNATE LOADING.

DESIGN FILL----------20.90'

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.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

AT THE CONTRACTOR'S 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.

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. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION 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.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

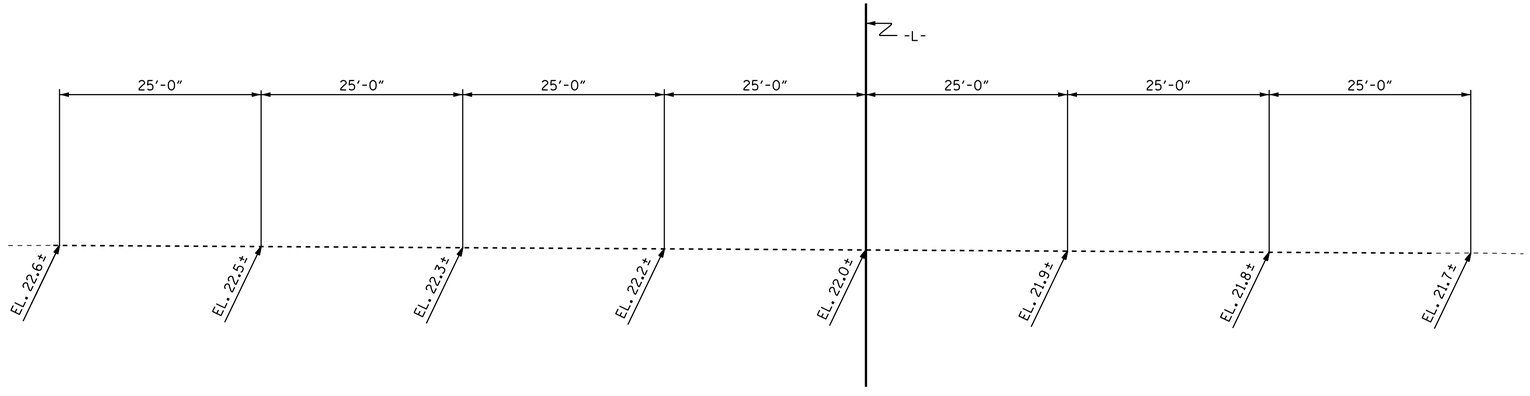
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

LOCATION SKETCH



PROFILE ALONG ℄ CULVERT

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
BARREL @ 0.697 CY/FT	117.1	C.Y.
WING ETC.	21.4	C.Y.
TOTAL	138.5	C.Y.
REINFORCING STEEL		
BARREL	14416	LBS.
WINGS ETC.	1188	LBS.
TOTAL	15604	LBS.
FOUNDATION COND. MAT'L.	134	TONS
CULVERT EXCAVATION	LUMP SUM	

PROJECT NO. R-3826

MARTIN COUNTY

STATION: 132+51.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD

SINGLE 6 FT. X 6 FT. CONCRETE BOX CULVERT 84° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTY W. ALFORD

DocuSigned by: F2458389308F40E...
11/22/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

ASSEMBLED BY : P.N.HOLDER DATE : 6/19/14
CHECKED BY : D.G.ELY DATE : 7/1/14
DESIGN ENGINEER OF RECORD: A.K.PATEL DATE : 6/18/14

DRAWN BY : R. WRIGHT DATE : AUG. 1989
CHECKED BY : C.R.K. DATE : AUG. 1989

STANDARD

STD. NO. CB221A

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

22-NOV-2016 09:25
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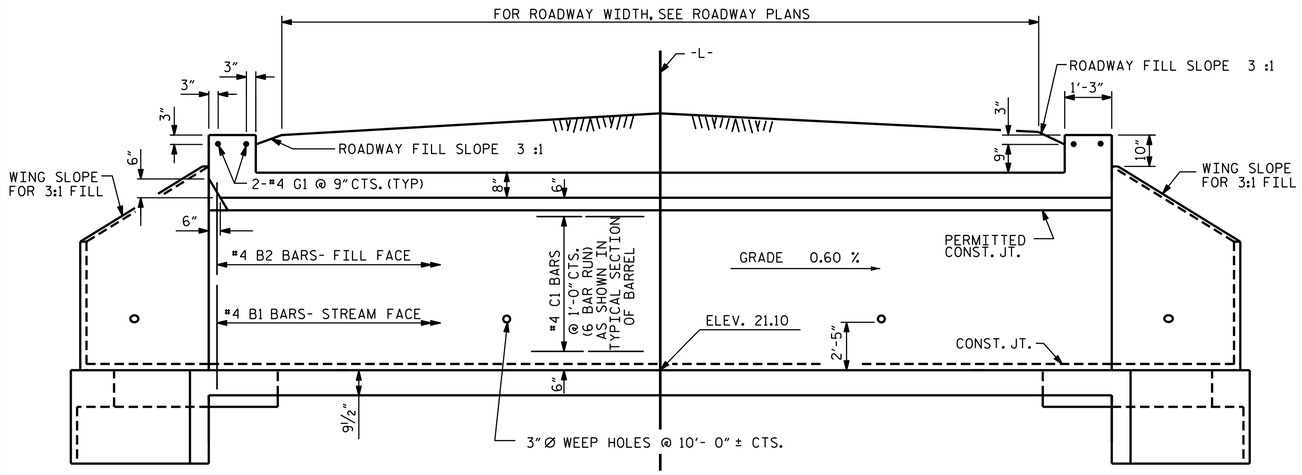
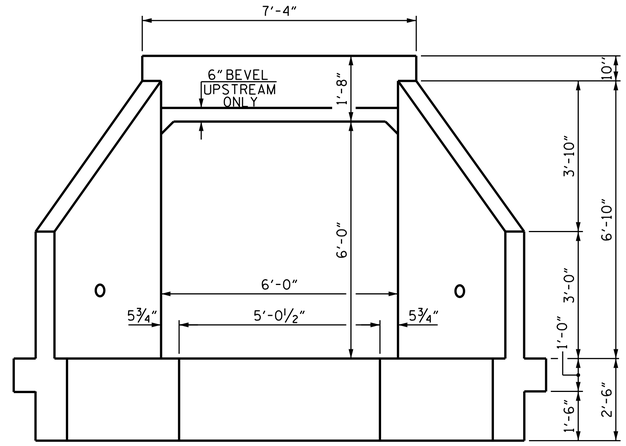
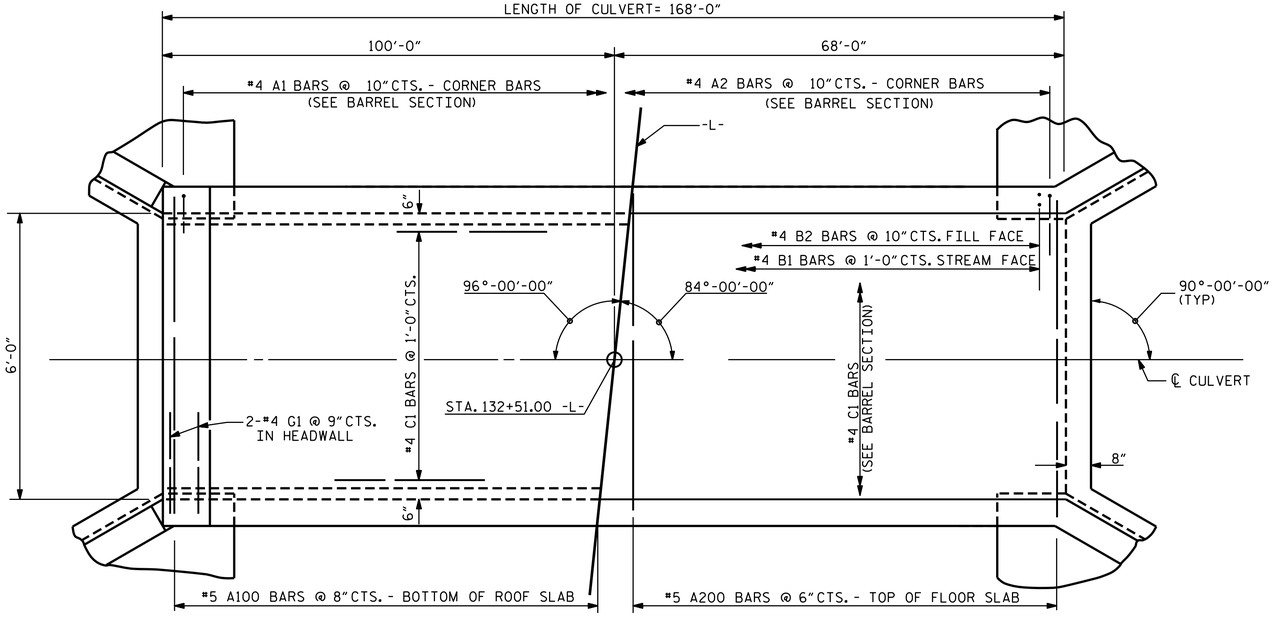
kalford



CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION



PART PLAN ROOF SLAB

PART PLAN FLOOR SLAB

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.

ASSEMBLED BY : P. N. HOLDER	DATE : 6/19/14	SPECIAL	
CHECKED BY : D.G.ELY	DATE : 7/1/14		
DRAWN BY : R. WRIGHT	DATE : AUG. 1989	STANDARD	
CHECKED BY : A.R. BISSETTE	DATE : AUG. 1989		

PROJECT NO. R-3826
MARTIN COUNTY
STATION: 132+51.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER WESLEY W. ALFORD
DocuSigned by: F2458389308F40E...
11/22/2016

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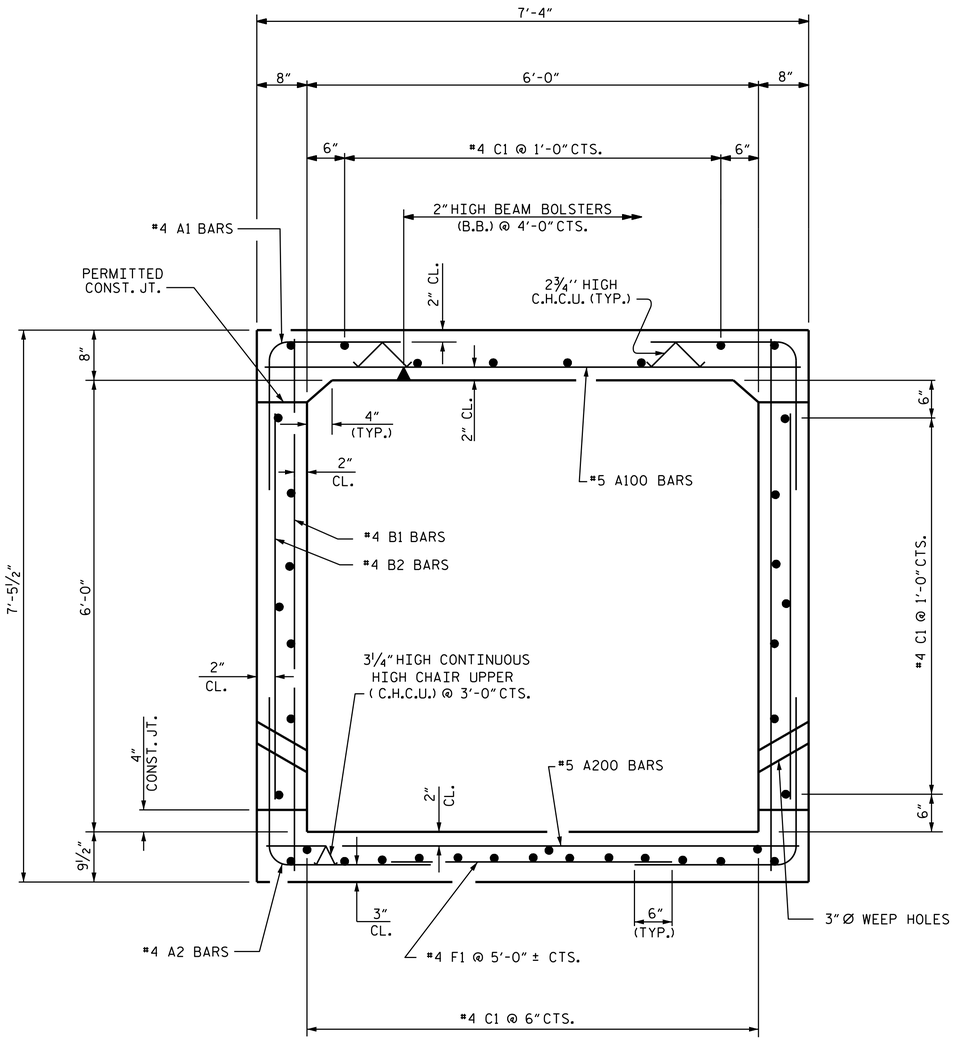
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD SINGLE 6 FT. X 6 FT. CONCRETE BOX CULVERT 84° SKEW

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

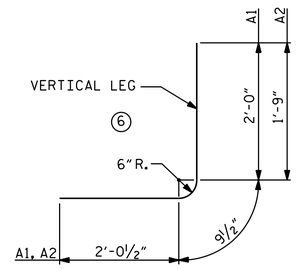
STD. NO. CB11



RIGHT ANGLE SECTION OF BARREL

THERE ARE 38 "C" BARS IN SECTION OF BARREL

BAR TYPE



DIMENSIONS ARE OUT TO OUT

SPLICE LENGTH CHART

BAR	SIZE	SPLICE LENGTH
B1	#4	1'-5''
C1	#4	1'-11''

BILL OF MATERIAL

BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
A100	252	#5	STR	6'-11"	1818
A200	336	#5	STR	6'-11"	2424
A1	404	#4	6	4'-10"	1304
A2	404	#4	6	4'-7"	1237
B1	336	#4	STR	6'-11"	1552
B2	404	#4	STR	5'-4"	1439
C1	228	#4	STR	29'-9"	4531
G1	4	#4	STR	7'-0"	19
F1	35	#4	STR	3'-11"	92
TOTAL REINFORCING STEEL					14416 LBS

PROJECT NO. R-3826

MARTIN COUNTY

STATION: 132+51.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD
SINGLE 6 FT. X 6 FT. CONCRETE BOX CULVERT 84° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTY W. ALFORD

DocuSigned by:
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11/22/2016

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

STD. NO. CB221A

ASSEMBLED BY : P. N. HOLDER DATE : 6/19/14
CHECKED BY : D.G.ELY DATE : 7/1/14
DESIGN ENGINEER OF RECORD: A.K.PATEL DATE : 6/18/14

22-NOV-2016 09:25
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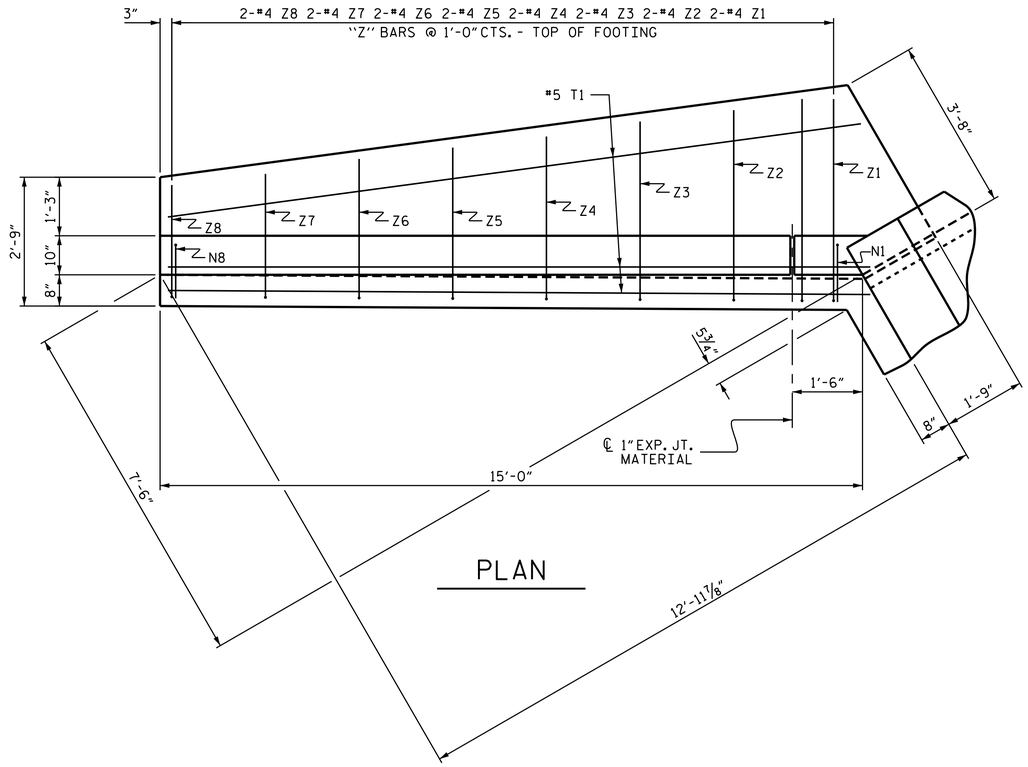
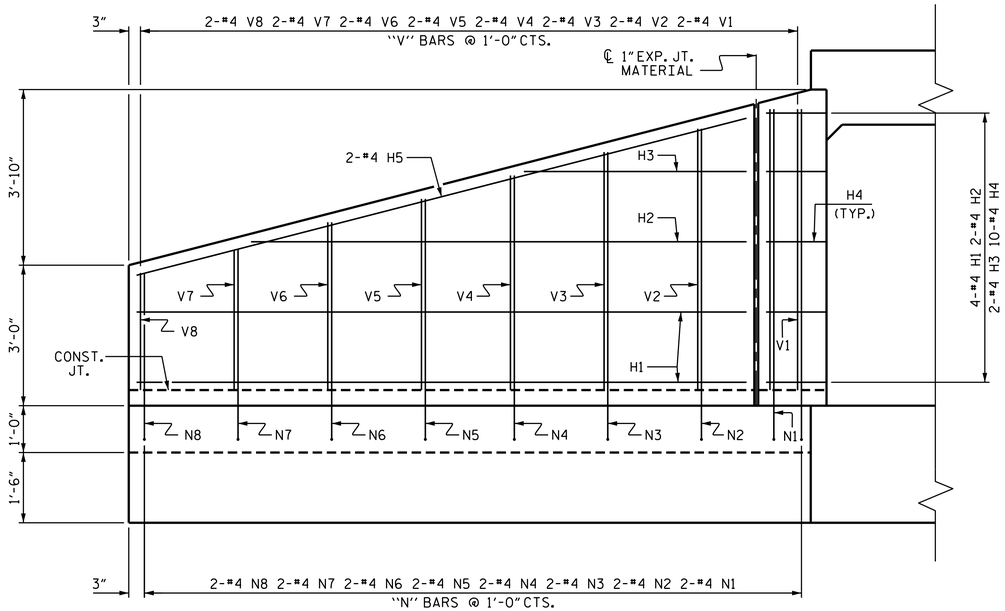
kalford

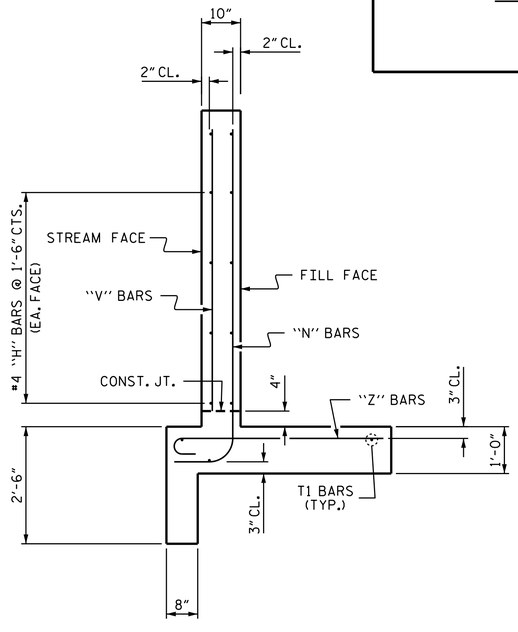
REVISED 11-13-91 BY E.L.R. CHECKED BY G.R.P.
ADDED 8-22-89



PLAN



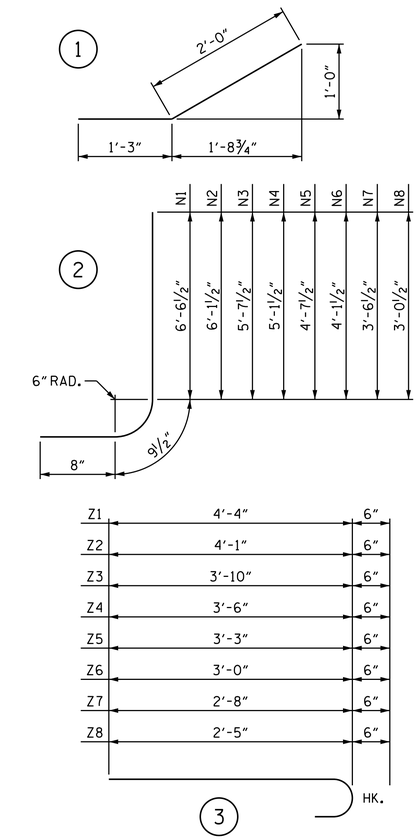
ELEVATION



TYPICAL WING SECTION

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	16	#4	STR	13'-0"	139
H2	8	#4	STR	10'-7"	57
H3	8	#4	STR	4'-9"	25
H4	40	#4	1	3'-3"	87
H5	8	#4	STR	13'-5"	72
N1	8	#4	2	8'-0"	43
N2	8	#4	2	7'-7"	41
N3	8	#4	2	7'-1"	38
N4	8	#4	2	6'-7"	35
N5	8	#4	2	6'-1"	33
N6	8	#4	2	5'-7"	30
N7	8	#4	2	5'-0"	27
N8	8	#4	2	4'-6"	24
T1	12	#5	STR	15'-0"	188
V1	8	#4	STR	6'-0"	32
V2	8	#4	STR	5'-7"	30
V3	8	#4	STR	5'-1"	27
V4	8	#4	STR	4'-7"	24
V5	8	#4	STR	4'-1"	22
V6	8	#4	STR	3'-7"	19
V7	8	#4	STR	3'-0"	16
V8	8	#4	STR	2'-6"	13
Z1	8	#4	3	4'-10"	26
Z2	8	#4	3	4'-7"	24
Z3	8	#4	3	4'-4"	23
Z4	8	#4	3	4'-0"	21
Z5	8	#4	3	3'-9"	20
Z6	8	#4	3	3'-6"	19
Z7	8	#4	3	3'-2"	17
Z8	8	#4	3	2'-11"	16

REINFORCING STEEL FOR 4 WINGS	LBS.	1188
CLASS A CONCRETE		
4 WINGS	CU. YDS.	20.2
2 HEADWALL	CU. YDS.	0.6
2 END CURTAIN WALL	CU. YDS.	0.6
TOTAL	CU. YDS.	21.4

PROJECT NO. R-3826

MARTIN COUNTY

STATION: 132+51.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

WINGS FOR CONCRETE BOX CULVERT

H = 6'-0" SLOPE = 3:1
90° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTY W. ALFORD

DocuSigned by:
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11/22/2016

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

SHEET NO. C-4
TOTAL SHEETS 5

ASSEMBLED BY :	P. N. HOLDER	DATE :	1/7/14
CHECKED BY :	D.G.ELY	DATE :	7/1/14
DRAWN BY :	L.E. SUTTON	DATE :	3/18/08
CHECKED BY :	A.S. CALLAWAY	DATE :	3/19/08

22-NOV-2016 09:25
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kalford

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERT

LEVEL		VEHICLE	WEIGHT (W) (TONS)	⟨#⟩ CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE									COMMENT NUMBER
							LIVE-LOAD FACTORS (γ_{LL})	MOMENT				SHEAR				
								RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	⟨1⟩	8.18	--	1.75	8.18	1	BOTTOM CORNER WALL	6.39	8.77	1	EXTERIOR WALL	5.85	
		HL-93 (OPERATING)	N/A		10.60	--	1.35	10.60	1	BOTTOM CORNER WALL	6.39	11.37	1	EXTERIOR WALL	5.85	
		HS-20 (INVENTORY)	36.000	⟨2⟩	8.18	294.43	1.75	8.18	1	BOTTOM CORNER WALL	6.39	8.77	1	EXTERIOR WALL	5.85	
		HS-20 (OPERATING)	36.000		10.60	381.67	1.35	10.60	1	BOTTOM CORNER WALL	6.39	11.37	1	EXTERIOR WALL	5.85	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500	⟨3⟩	10.22	138.02	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		SNGARBS2	20.000		10.22	204.47	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		SNAGRIS2	22.000		10.22	224.91	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		SNCOTTS3	27.250		10.22	278.59	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		SNAGGRS4	34.925		10.22	357.05	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		SNS5A	35.550		10.22	363.44	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		SNS6A	39.950		10.22	408.43	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		SNS7B	42.000		10.22	429.38	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		10.22	337.37	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		TNT4A	33.075		10.22	338.14	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		TNT6A	41.600		10.22	425.29	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		TNT7A	42.000		10.22	429.38	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		TNT7B	42.000		10.22	429.38	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		TNAGRIT4	43.000		10.22	439.61	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		TNAGT5A	45.000		10.22	460.05	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	
		TNAGT5B	45.000		10.22	460.05	1.40	10.22	1	BOTTOM CORNER WALL	6.39	10.96	1	EXTERIOR WALL	5.85	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS

LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

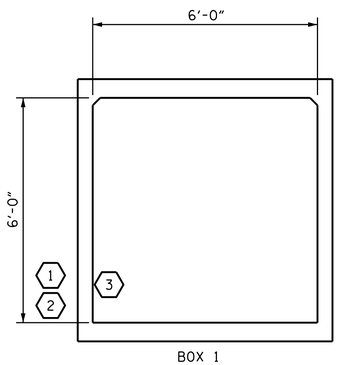
⟨#⟩ CONTROLLING LOAD RATING

⟨1⟩ DESIGN LOAD RATING (HL-93)

⟨2⟩ DESIGN LOAD RATING (HS-20)

⟨3⟩ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE



BOX 1

LRFR SUMMARY

(LOOKING DOWNSTREAM)

PROJECT NO. R-3826

MARTIN COUNTY

STATION: 132+51.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTY W. ALFORD

DocuSigned by: F2458B900BF40E...

11/22/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS

(NON-INTERSTATE TRAFFIC)

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

STD. NO. LRFR5

ASSEMBLED BY :	A.K.PATEL	DATE : 6/18/14
CHECKED BY :	D.G.ELY	DATE : 7/1/14
DESIGN ENGINEER OF RECORD:	A.K.PATEL	DATE : 6/18/14
DRAWN BY : WMC 7/11	REV. 10/1/11	MAA/GM
CHECKED BY : GM 7/11		

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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 2012 "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; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

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. 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 ¾" 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.

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

STD. NO. SN

REV. 6-16-95 EEM (c) RGW REV. 5-7-03 RWW (c) JTE REV. 10-1-11 MAA (c) GM
REV. 8-16-99 RWW (c) LES REV. 5-1-06 TLA (c) GM

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