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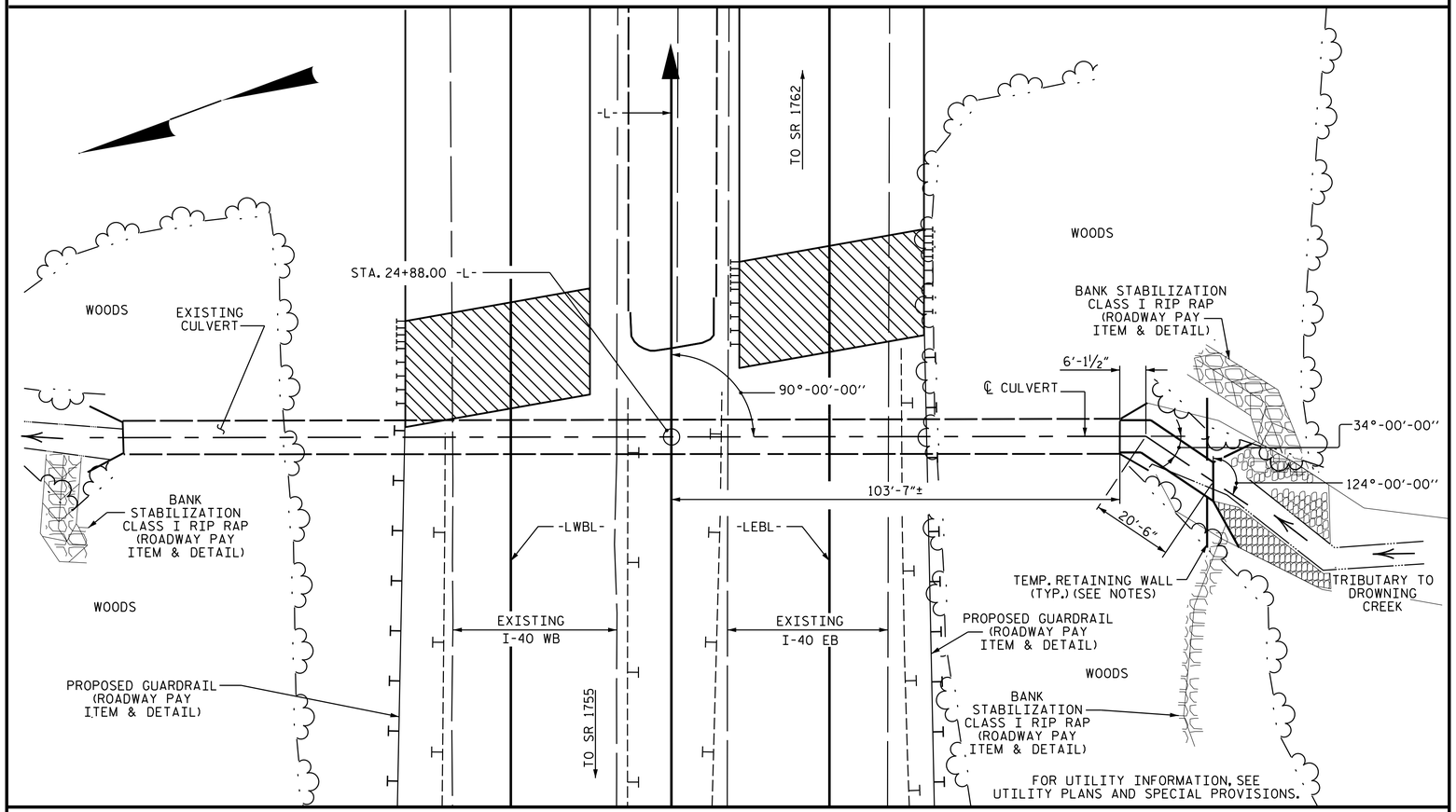
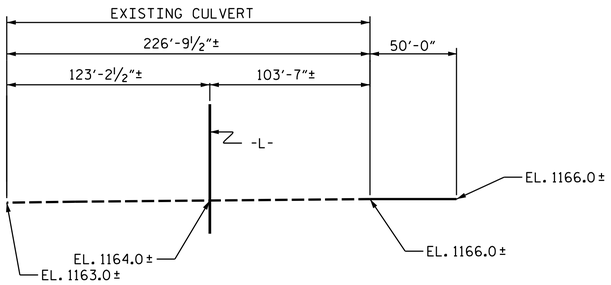
BENCHMARK #1: TWO INCH SQUARE ETCHED ON NORTH WINGWALL AT WEST ABUTMENT ON WESTBOUND I-40 OVER SR 1758, STA. 15+02.46 -Y-; 66' RIGHT, EL. 1209.55.



LOCATION SKETCH



PROFILE ALONG ℄ CULVERT

ROADWAY DATA

GRADE POINT ELEV. @ STA. 24+88.00 -L- = 1211.42

BED ELEV. @ STA. 24+88.00 -L- = 1164.40

ROADWAY SLOPES = 1.5: 1 (LEFT)
1.64: 1 (RIGHT)

HYDRAULIC DATA

DESIGN DISCHARGE ---------- = 190 C.F.S.

FREQUENCY OF DESIGN FLOOD ----- = 50 YEARS

DESIGN HIGH WATER ELEVATION --- 1170.5

DRAINAGE AREA ---------- = 167 ACRES

BASE DISCHARGE (Q100) ---------- = 230 C.F.S.

BASE HIGH WATER ELEVATION ------ = 1171.1

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE ---------- = 340+ C.F.S.

FREQUENCY OF OVERTOPPING FLOOD -= 500+ YEARS

OVERTOPPING FLOOD ELEVATION ----= 1187.8

NOTES

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

DESIGN FILL ---------- 38.84 FT. (MAX.)

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERT TO BE POURED IN THE FOLLOWING ORDER:

1. WING FOOTINGS, CURTAIN WALL AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

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

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSION. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

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

NO PRECAST CONCRETE BOX CULVERT OPTION WILL BE ALLOWED.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

TOTAL STRUCTURE QUANTITIES

CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	21 TONS
CLASS A CONCRETE	
BARREL @ 0.923 CY/FT	24.6 CY
WINGS, ETC.	8.0 CY
TOTAL	32.6 CY
REINFORCING STEEL	
BARREL	2605 LBS.
WINGS, ETC.	519 LBS.
TOTAL	3124 LBS.

PROJECT NO. B-4447

BURKE COUNTY

STATION: 24+88.00 -L-

SHEET 1 OF 6

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER A. KEITH PASCHAL

DocuSigned by: A. Keith Paschal F886AD6DB2FC48F...

4/20/2017

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK, JR.

DocuSigned by: Marshall G. Cheek Jr 6549D6EBAA3B405...

4/20/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 6'-0" X 6'-0" CONCRETE EXTENSION CULVERT

DRAWN BY : H. T. BARBOUR DATE : 1-29-17
CHECKED BY : M. G. CHEEK DATE : 2-17-17
DESIGN ENGINEER OF RECORD: G. KOUCHEKI DATE : 4-17

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			6

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)	2.07	--	1.75	**5.95**	1	BOT CORNER WALL	**6.61**	2.07	1	EXTERIOR WALL	1.02	
		HL-93 (OPERATING)	N/A		2.69	--	1.35	7.71	1	BOT CORNER WALL	**6.61**	2.69	1	EXTERIOR WALL	1.02	
		HS-20 (INVENTORY)	36.00	(2)	2.07	74.69	1.75	**5.95**	1	BOT CORNER WALL	**6.61**	2.07	1	EXTERIOR WALL	1.02	
		HS-20 (OPERATING)	36.00		2.69	96.82	1.35	7.71	1	BOT CORNER WALL	**6.61**	2.69	1	EXTERIOR WALL	1.02	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.50	(3)	2.59	35.01	1.40	**7.44**	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		SNGARBS2	20.00		2.59	51.87	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		SNAGRIS2	22.00		2.59	57.06	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		SNCOTTS3	27.25		2.59	70.67	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		SNAGGRS4	34.93		2.59	90.58	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		SNS5A	35.55		2.59	92.20	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		SNS6A	39.95		2.59	103.61	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		SNS7B	42.00		2.59	108.92	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.00		2.59	85.58	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		TNT4A	33.08		2.59	85.78	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		TNT6A	41.60		2.59	107.89	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		TNT7A	42.00		2.59	108.92	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		TNT7B	42.00		2.59	108.92	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		TNAGRIT4	43.00		2.59	111.52	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		TNAGT5A	45.00		2.59	116.70	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	
		TNAGT5B	45.00		2.59	116.70	1.40	7.44	1	BOT CORNER WALL	**6.61**	2.59	1	EXTERIOR WALL	1.02	

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.

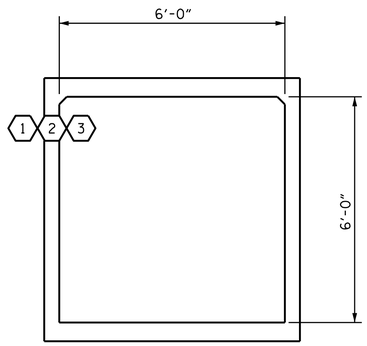
(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE



LRFR SUMMARY

PROJECT NO. B-4447

BURKE COUNTY

STATION: 24+88.00 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS

(NON-INTERSTATE TRAFFIC)

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK, JR.

Marshall G. Cheek Jr.

6549D8EBAA3B405...

4/20/2017

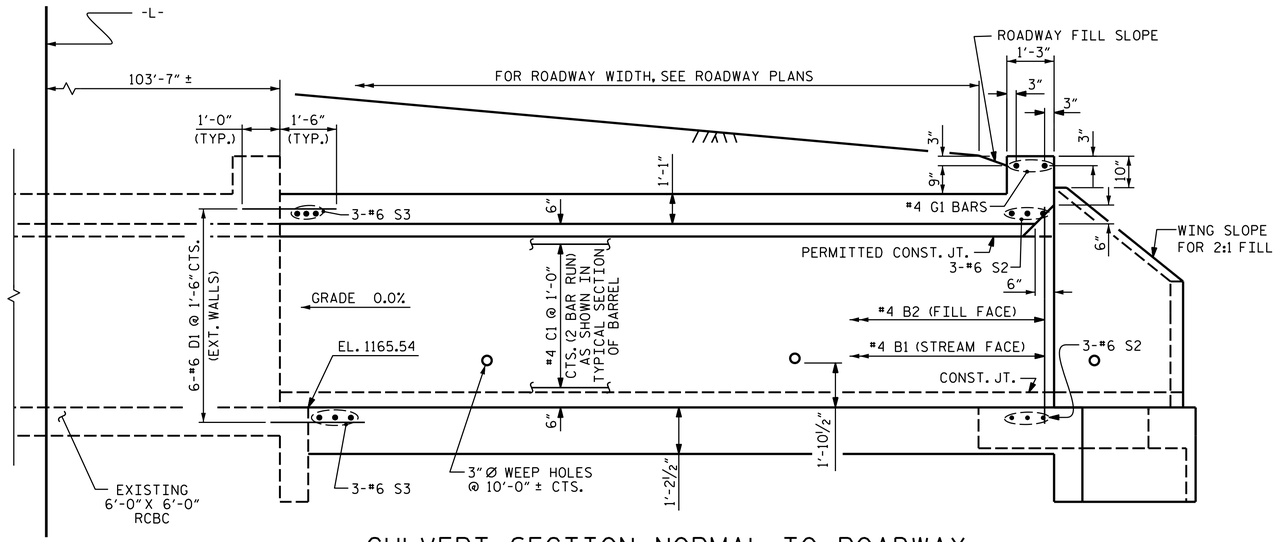
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

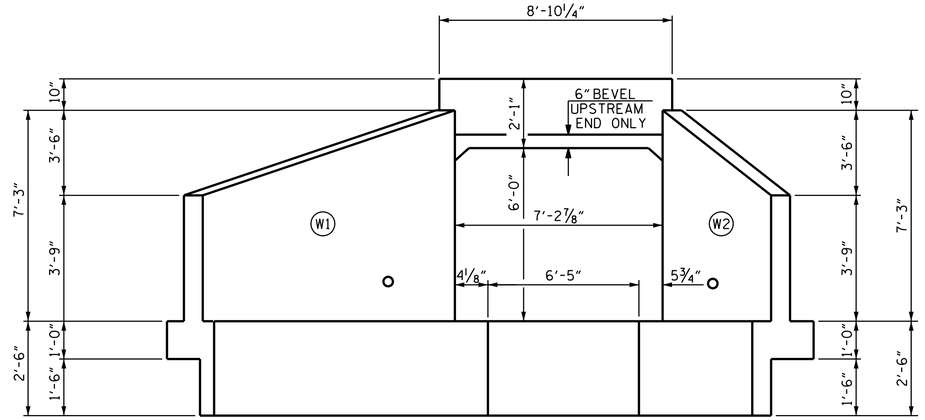
ASSEMBLED BY : H. T. BARBOUR DATE : 1-29-17
CHECKED BY : M. G. CHEEK DATE : 2-17-17

DRAWN BY : WMC 7/11
CHECKED BY : GM 7/11

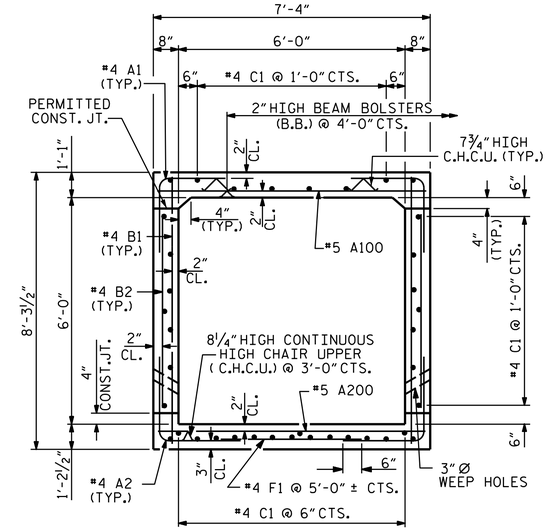
REV. 10/1/11 MAA/GM



CULVERT SECTION NORMAL TO ROADWAY

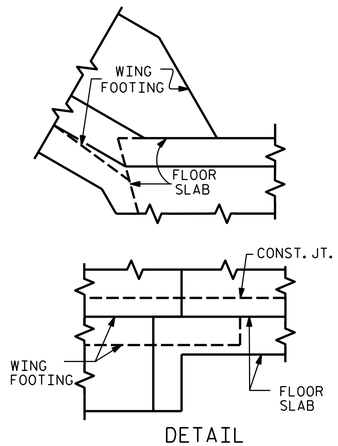


END ELEVATION NORMAL TO SKEW



RIGHT ANGLE SECTION OF BARREL

THERE ARE 38 "C" BARS IN SECTION OF BARREL

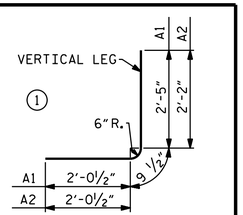


DETAIL

CONNECTION OF WING FOOTING AND FLOOR SLAB WHEN SLAB IS THICKER THAN FOOTING

REINFORCING BAR SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	63	#4	1	5'-3"	221
A2	63	#4	1	5'-0"	210
A100	45	#5	STR.	7'-0"	329
A101	1	#5	STR.	6'-7"	7
A102	1	#5	STR.	5'-9"	6
A103	1	#5	STR.	4'-11"	5
A104	1	#5	STR.	3'-2"	3
A105	1	#5	STR.	2'-3"	2
A200	45	#5	STR.	7'-0"	329
A201	1	#5	STR.	6'-7"	7
A202	1	#5	STR.	5'-9"	6
A203	1	#5	STR.	4'-11"	5
A204	1	#5	STR.	3'-2"	3
A205	1	#5	STR.	2'-3"	2
B1	53	#4	STR.	7'-9"	274
B2	63	#4	STR.	5'-4"	224
C1	76	#4	STR.	14'-3"	723
D1	22	#6	STR.	2'-6"	83
F1	6	#4	STR.	3'-11"	16
G1	2	#4	STR.	8'-5"	11
S2	6	#6	STR.	8'-5"	76
S3	6	#6	STR.	7'-0"	63
TOTAL REINFORCING STEEL					2605 LBS.



BAR TYPE

BAR DIMENSIONS ARE OUT TO OUT

SPLICE CHART

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

PROJECT NO. B-4447

BURKE COUNTY

STATION: 24+88.00 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 6'-0" X 6'-0" CONCRETE CULVERT EXTENSION

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK JR.

Marshall G. Cheek Jr.

6549D6EBAA3B405...

4/20/2017

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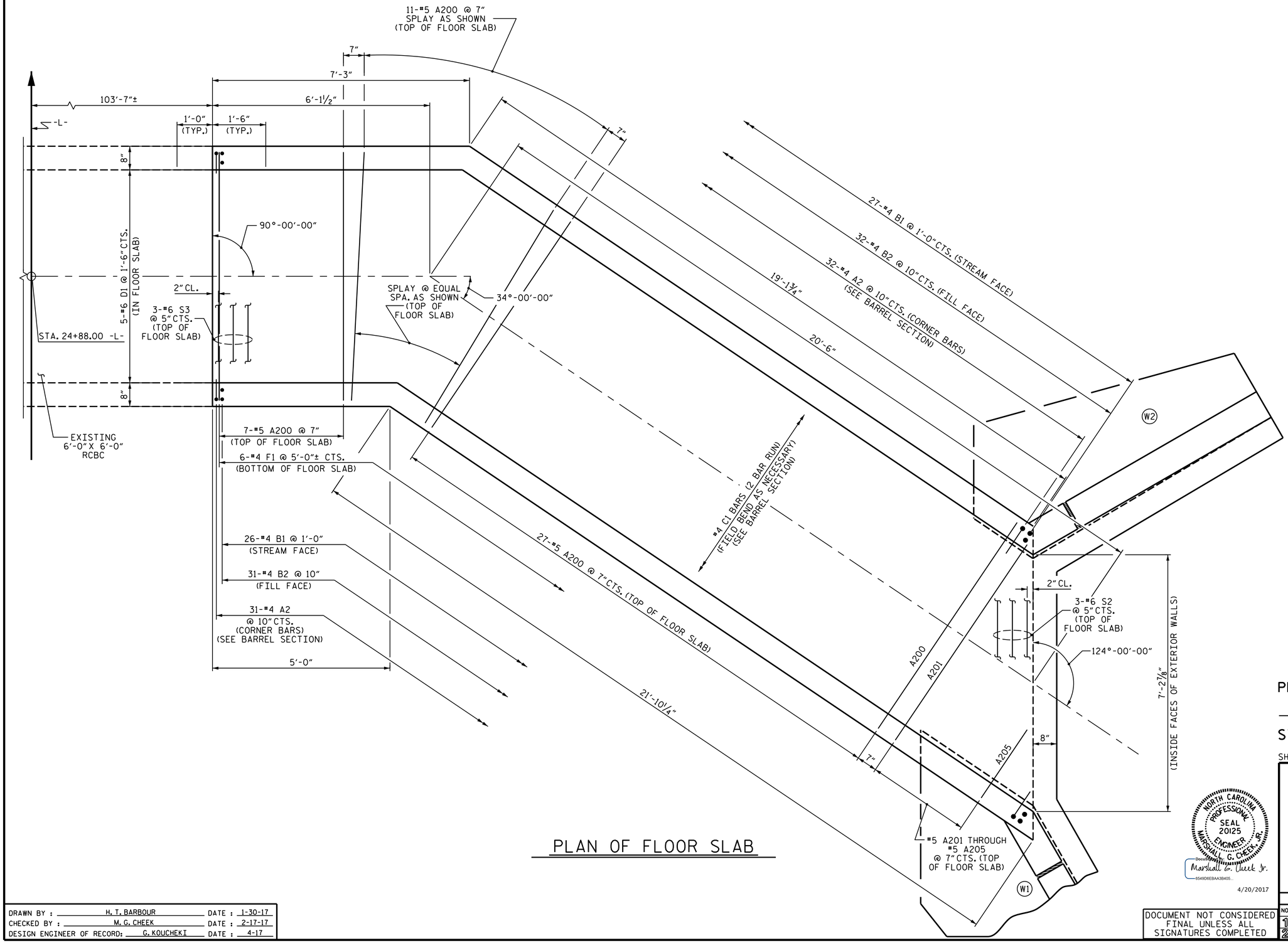
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			6

DRAWN BY : H. T. BARBOUR DATE : 1-29-17
CHECKED BY : M. G. CHEEK DATE : 2-17-17
DESIGN ENGINEER OF RECORD: G. KOUCHEKI DATE : 4-17

STD. NO. CB331

REVISED 11-19-99 BY M.M. CHECKED BY R.W.W.



PLAN OF FLOOR SLAB

PROJECT NO. B-4447

BURKE COUNTY

STATION: 24+88.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 6'-0" X 6'-0" CONCRETE CULVERT EXTENSION

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK JR.

Digitally signed by Marshall G. Cheek Jr.
6549D6EBAA3B405...

4/20/2017

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-4
1			3			TOTAL SHEETS
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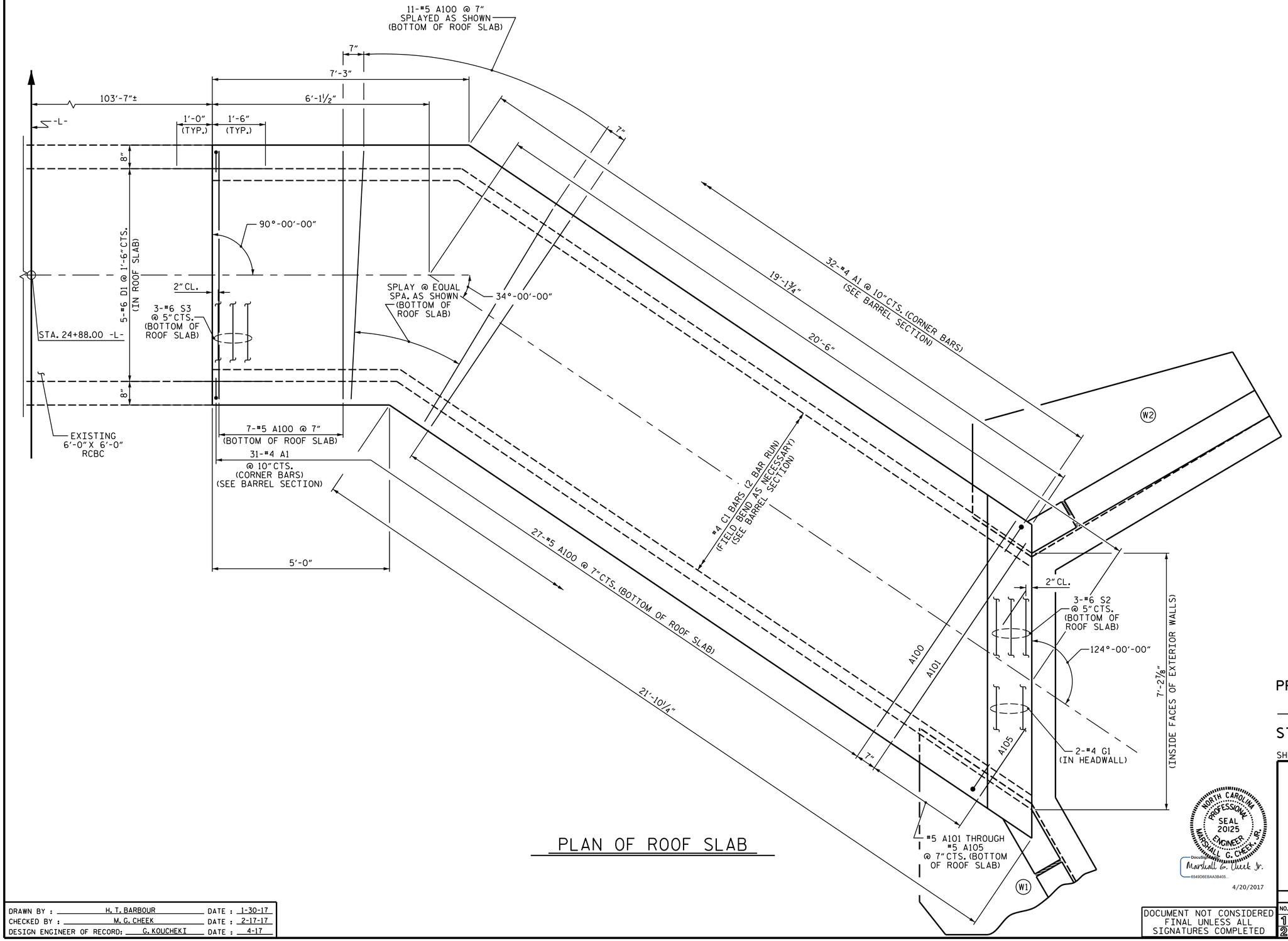
DRAWN BY : H. T. BARBOUR DATE : 1-30-17
CHECKED BY : M. G. CHEEK DATE : 2-17-17
DESIGN ENGINEER OF RECORD: G. KOUCHEKI DATE : 4-17



PLAN OF ROOF SLAB

PROJECT NO. B-4447

BURKE COUNTY

STATION: 24+88.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 6'-0" X 6'-0" CONCRETE CULVERT EXTENSION

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK, JR.

Documents signed by: Marshall G. Cheek Jr.
6540D6EBAA3B405...

4/20/2017

DRAWN BY : H. T. BARBOUR DATE : 1-30-17
CHECKED BY : M. G. CHEEK DATE : 2-17-17
DESIGN ENGINEER OF RECORD: G. KOUCHEKI DATE : 4-17

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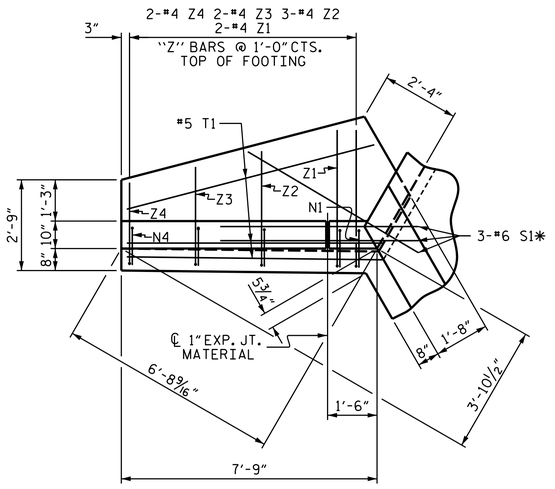
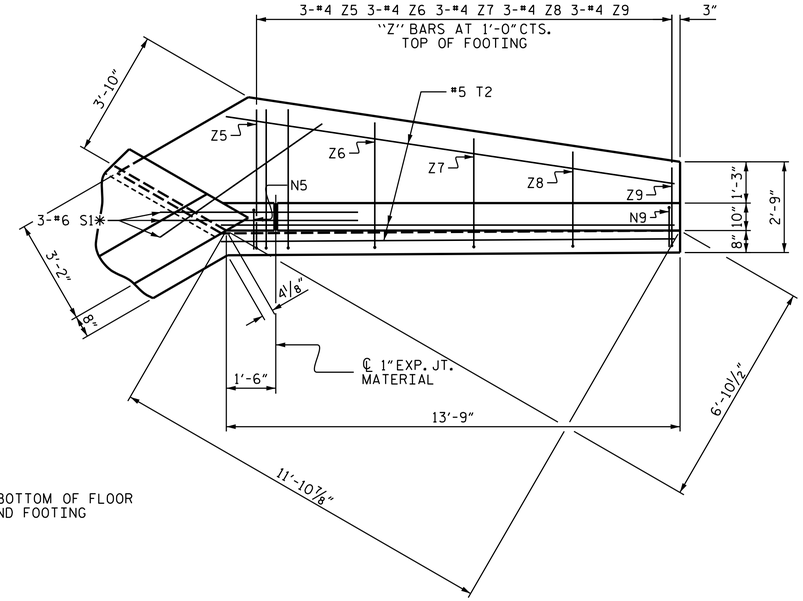


PLAN W2

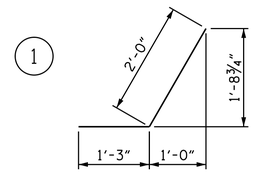


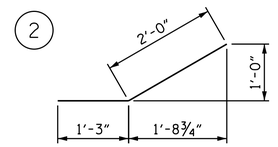
PLAN W1

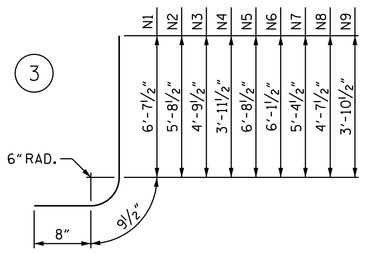
* S1 BARS @ BOTTOM OF FLOOR SLAB AND FOOTING

BAR TYPES

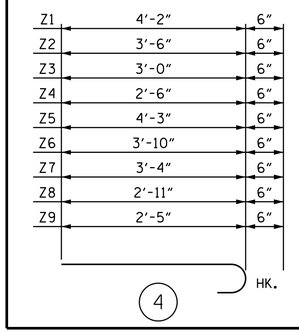
ALL BAR DIMENSIONS ARE OUT TO OUT.







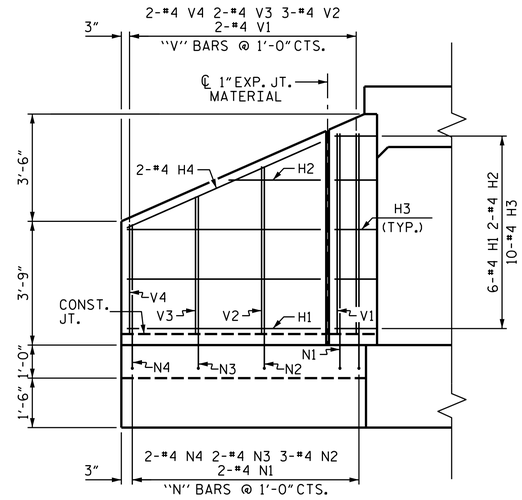
Z1	4'-2" 6"
Z2	3'-6" 6"
Z3	3'-0" 6"
Z4	2'-6" 6"
Z5	4'-3" 6"
Z6	3'-10" 6"
Z7	3'-4" 6"
Z8	2'-11" 6"
Z9	2'-5" 6"



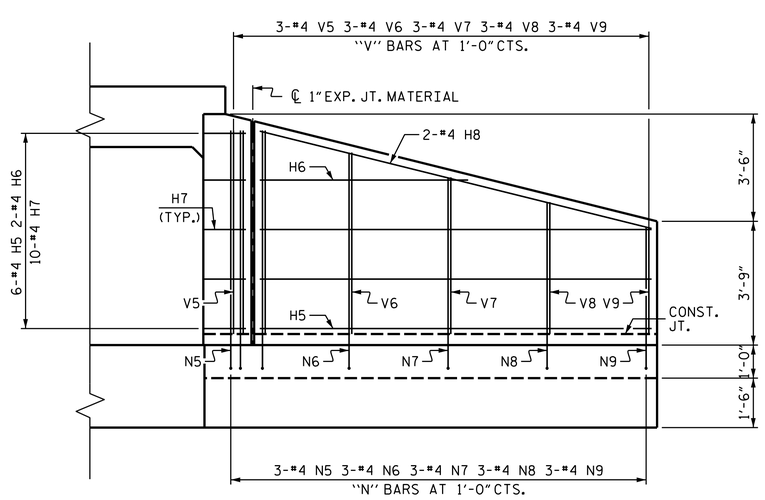
BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	5'-10"	23
H2	2	#4	STR	2'-9"	4
H3	10	#4	1	3'-3"	22
H4	2	#4	STR	6'-5"	9
H5	6	#4	STR	11'-10"	47
H6	2	#4	STR	6'-3"	8
H7	10	#4	2	3'-3"	22
H8	2	#4	STR	12'-2"	16
N1	2	#4	3	8'-1"	11
N2	3	#4	3	7'-2"	14
N3	2	#4	3	6'-3"	8
N4	2	#4	3	5'-5"	7
N5	3	#4	3	8'-2"	16
N6	3	#4	3	7'-7"	15
N7	3	#4	3	6'-10"	14
N8	3	#4	3	6'-1"	12
N9	3	#4	3	5'-4"	11
S1	6	#6	STR	6'-0"	54
T1	3	#5	STR	7'-9"	24
T2	3	#5	STR	13'-9"	43
V1	2	#4	STR	6'-1"	8
V2	3	#4	STR	5'-1"	10
V3	2	#4	STR	4'-2"	6
V4	2	#4	STR	3'-4"	4
V5	3	#4	STR	6'-2"	12
V6	3	#4	STR	5'-6"	11
V7	3	#4	STR	4'-9"	10
V8	3	#4	STR	4'-0"	8
V9	3	#4	STR	3'-3"	7
Z1	2	#4	4	4'-8"	6
Z2	3	#4	4	4'-0"	8
Z3	2	#4	4	3'-6"	5
Z4	2	#4	4	3'-0"	4
Z5	3	#4	4	4'-9"	10
Z6	3	#4	4	4'-4"	9
Z7	3	#4	4	3'-10"	8
Z8	3	#4	4	3'-5"	7
Z9	3	#4	4	2'-11"	6

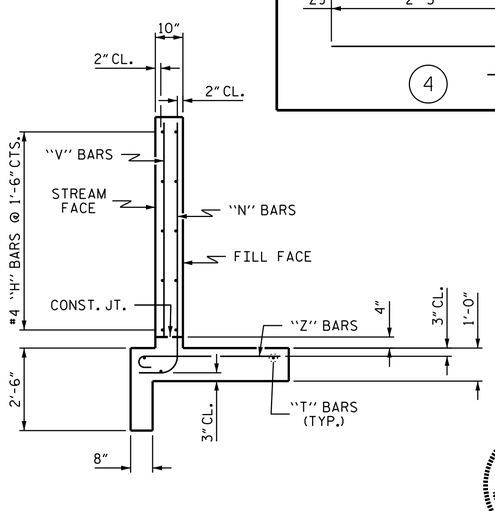
REINFORCING STEEL FOR 2 WINGS	519 LBS.
CLASS A CONCRETE	
2 WINGS	7.2 CY
1 HEADWALL	.4 CY
1 END CURTAIN WALL	.4 CY
TOTAL	8.0 CY



ELEVATION W2



ELEVATION W1



TYPICAL WING SECTION

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK JR.
Marshall G. Cheek Jr.
6549D6EBAA3B405...
4/20/2017

PROJECT NO. B-4447
BURKE COUNTY
STATION: 24+88.00 -L-
SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD WINGS FOR CONCRETE BOX CULVERT

H = 6'-0" SLOPE = 2:1
120° SKEW

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

ASSEMBLED BY :	H. T. BARBOUR	DATE :	1-29-17
CHECKED BY :	M. G. CHEEK	DATE :	2-17-17
DRAWN BY :	CCJ	11/99	
CHECKED BY :	RWW	03/00	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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.

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

ENGLISH

JANUARY, 1990

STD. NO. SN