

TIP PROJECT: U-4713A

CONTRACT: C204966

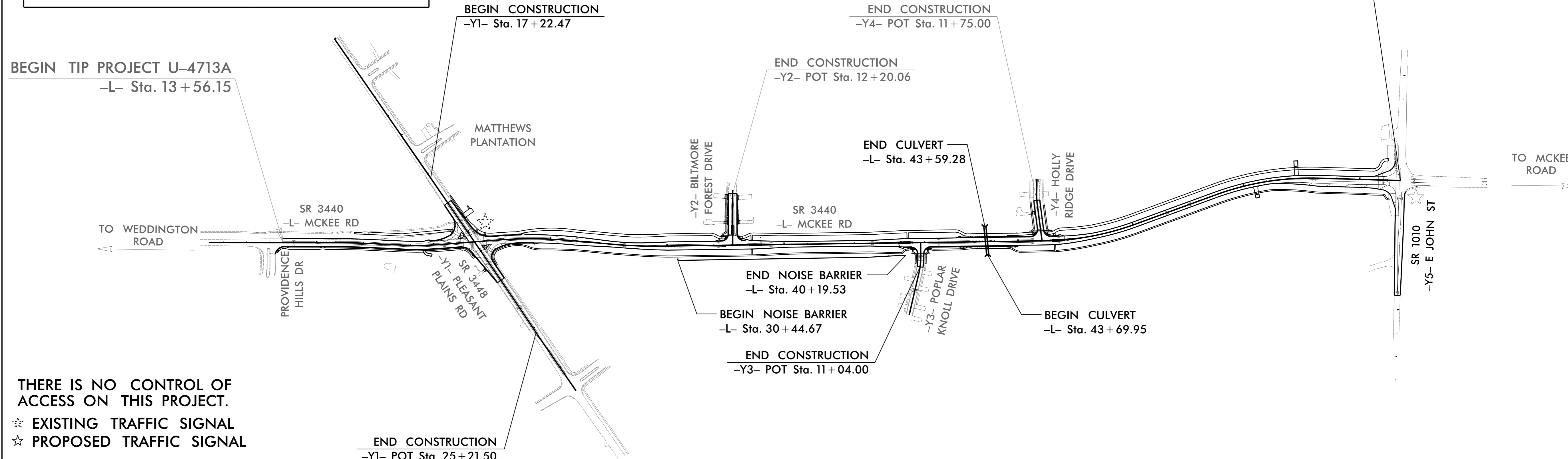
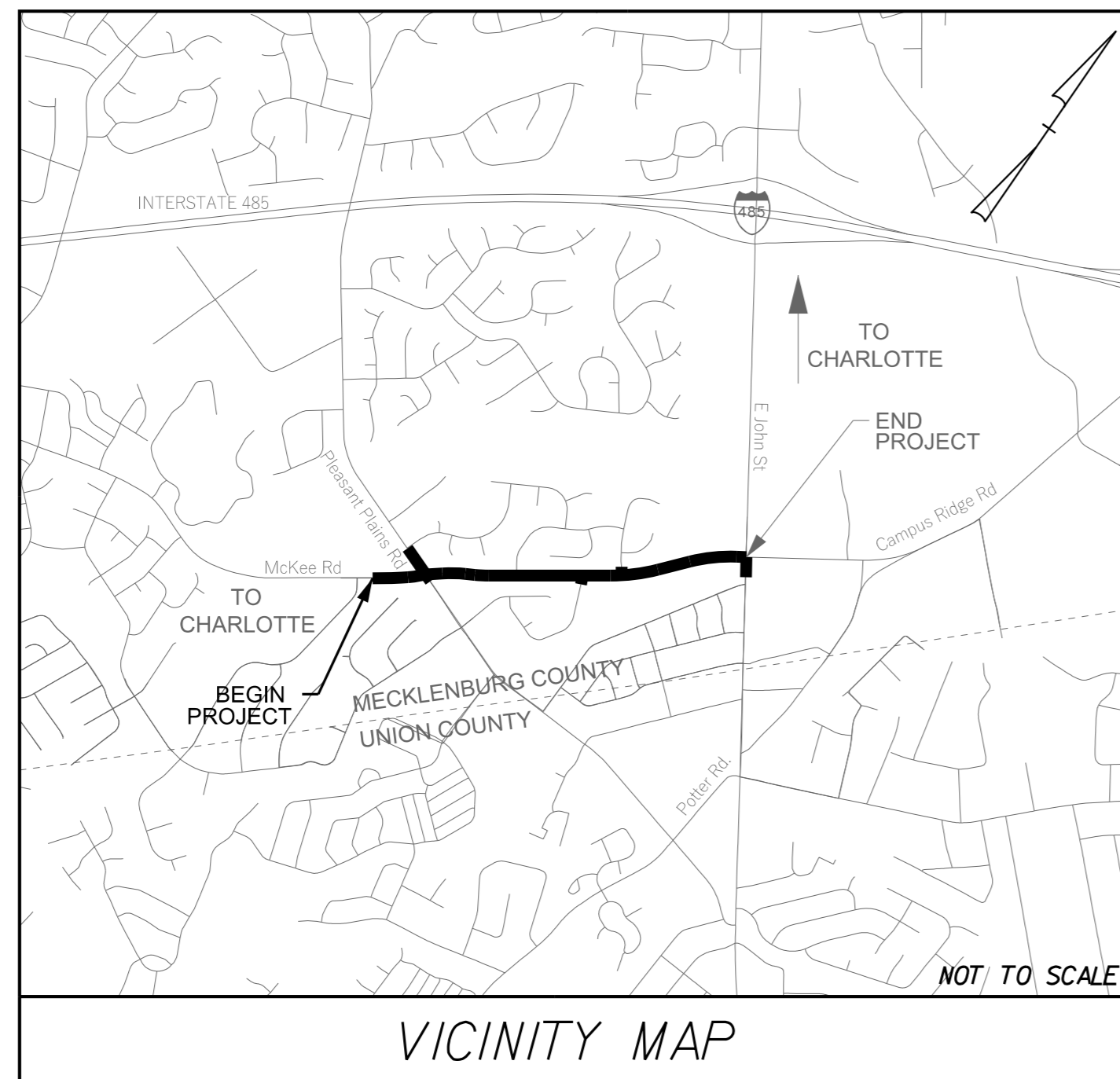
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

**LOCATION: SR 3440 MCKEE ROAD EXTENSION FROM
SR 3448 (PLEASANT PLAINS ROAD) TO SR 1010 (E. JOHN STREET)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4713A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39077.1.2	N/A	PE	
39077.2.4	N/A	UTILITIES	
39077.2.2	N/A	R/W	
39077.3.2	N/A	CONSTRUCTION	



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
 ☆ EXISTING TRAFFIC SIGNAL
 ☆ PROPOSED TRAFFIC SIGNAL

STRUCTURES

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DESIGN DATA

ADT 2024	=	13,430	VPD
ADT 2044	=	18,090	VPD
K	=	8%	
D	=	45%	
T	=	3%*	
V	=	40	MPH

FUNCTIONAL CLASSIFICATION: COLLECTOR

* 1% TTST 2% DUAL SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4713A	=	0.912	MILES
TOTAL LENGTH TIP PROJECT U-4713A	=	0.912	MILES

PLANS PREPARED FOR THE NCDOT BY:

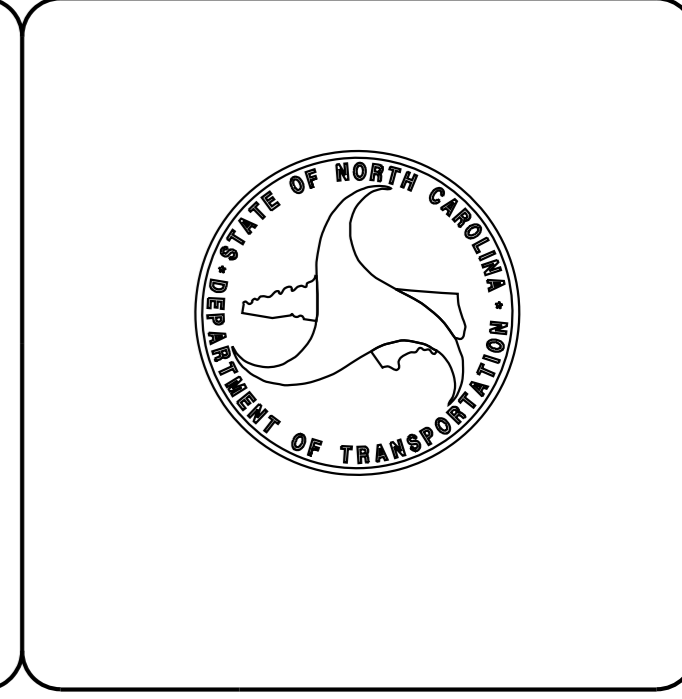
Kimley»Horn
NC LICENSE #0102
 200 SOUTH TRYON STREET, SUITE 200
 CHARLOTTE, NORTH CAROLINA 28202
 PHONE: (704) 333-5131

RIGHT OF WAY DATE:
 JULY 19, 2019

LETTING DATE:
 OCTOBER 15, 2024

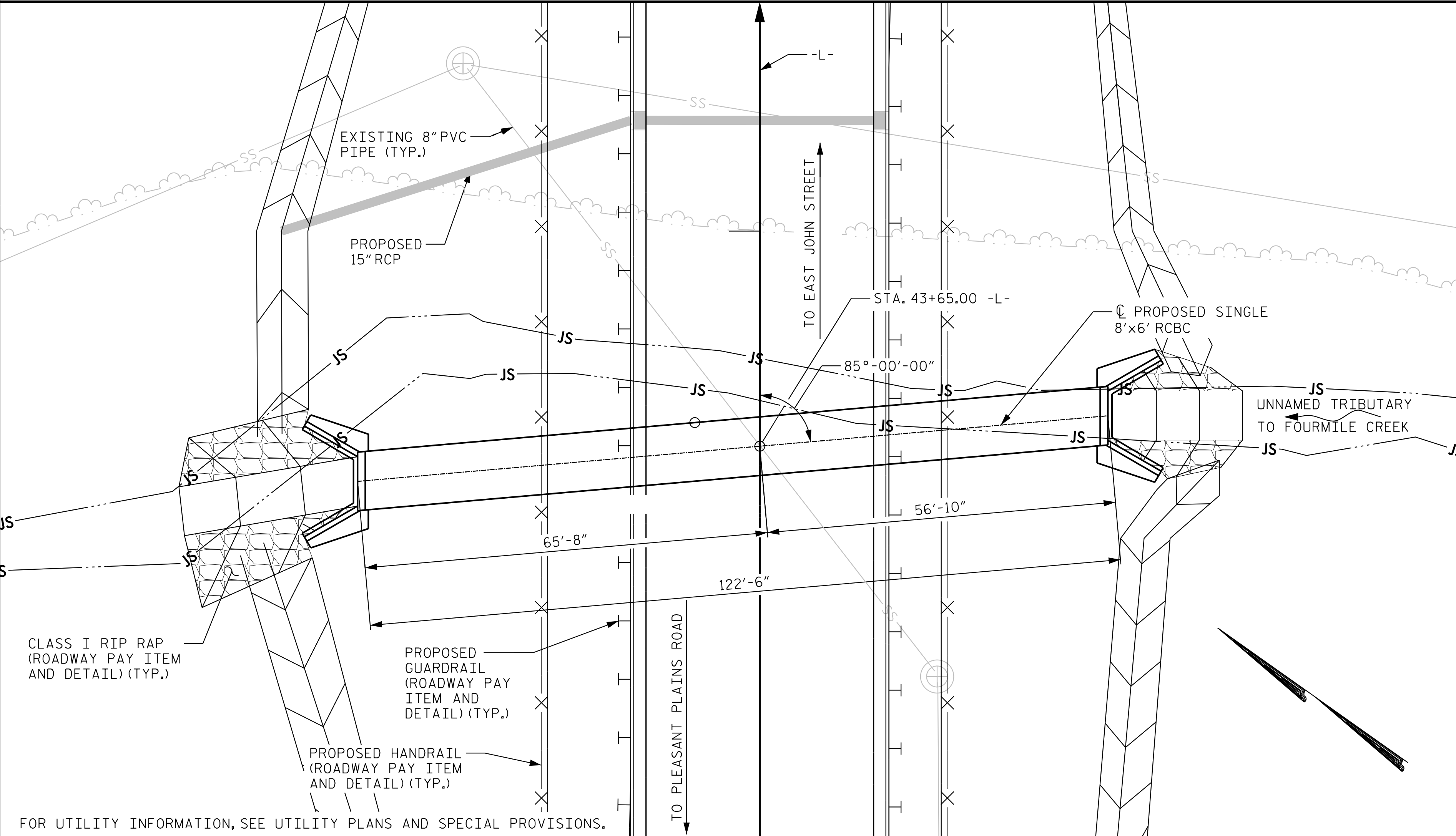
CLAY T. POOLE, P.E.
PROJECT ENGINEER

ANDREW L. PHILLIPS, P.E.
PROJECT DESIGN ENGINEER



7/11/2024 K:\VDT_Structures\Culvert\NC\01036426 U-4713A McKee Road Extension\Cad\Dgn\U-4713A_rdy_1.shdgn

BENCHMARK: BM#2, -L- STA. 43+02.88, OFFSET 136.56' RT., EL. 722.56', TIE SPIKE IN 12" MAPLE



LOCATION SKETCH

NOTES

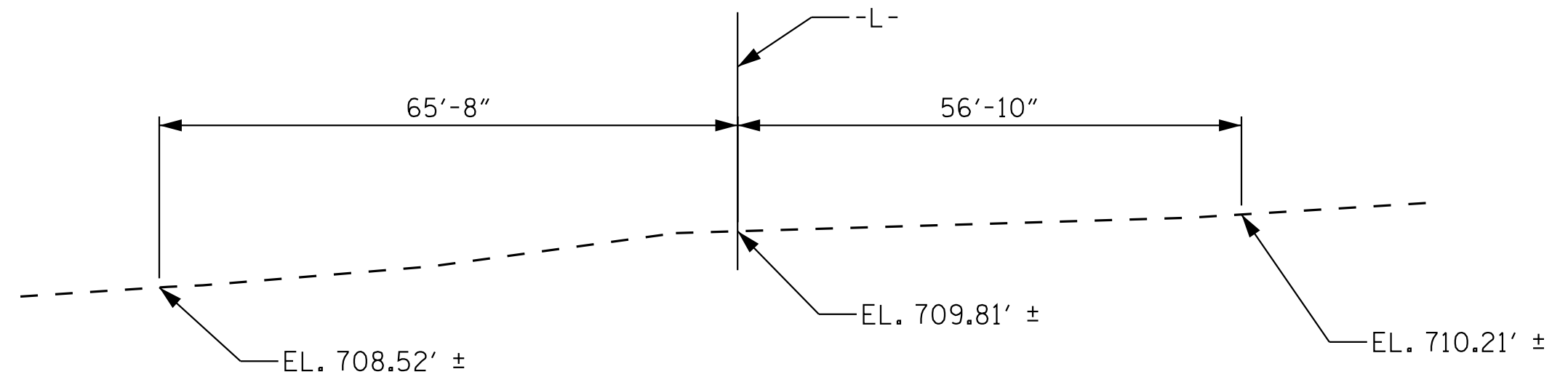
- ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
- DESIGN FILL ----- 14'-3"
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE STANDARD NOTE SHEET.
- 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
- CONCRETE IN THE CULVERT TO BE POURED IN THE FOLLOWING ORDER:
 1. WING FOOTINGS, CURTAIN WALLS 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.
- DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON THE WING SHEETS.
- AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACES OF THE EXTERIOR WALLS 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.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT POURS TO A MAXIMUM OF 70 FEET. LOCATION OF THE JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
- 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.
- AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.
- BED MATERIAL PLACED BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL BETWEEN THE LOWER SILLS. THE MATERIAL SHALL BE NATIVE MATERIAL OR CLASS A RIP RAP TO SILL HEIGHT. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS. CLASS A RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL. IF RIP RAP IS USED, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. THE ENTIRE COST OF WORK REQUIRED TO PLACE EXCAVATED OR SUPPLEMENTAL MATERIAL SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR CULVERT EXCAVATION.
- 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.

HYDRAULIC DATA	
DESIGN DISCHARGE -----	180 CFS
FREQUENCY OF DESIGN FLOOD -----	25 YR.
DESIGN HIGH WATER ELEVATION-----	713.8 FT.
DRAINAGE AREA -----	122 ACRES
BASE DISCHARGE (Q100) -----	220 CFS
BASE HIGH WATER ELEVATION -----	714.4 FT.

OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE -----	>270 CFS
FREQUENCY OF OVERTOPPING FLOOD ---	>500 YR.
OVERTOPPING FLOOD ELEVATION -----	728.3 FT.
OVERTOPPING OCCURS AT STA. 44+17.98 -L-	

TOTAL STRUCTURE QUANTITIES	
CLASS A CONCRETE	
BARREL @ 0.983 CY/FT	120.4 C.Y.
WINGS ETC.	15.6 C.Y.
SILLS	0.6 C.Y.
TOTAL	136.6 C.Y.
REINFORCING STEEL	
BARREL	23,920 LBS.
WINGS ETC.	793 LBS.
TOTAL	24,713 LBS.
CULVERT EXCAVATION STA. 43+65.00 -L-	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	117 TONS

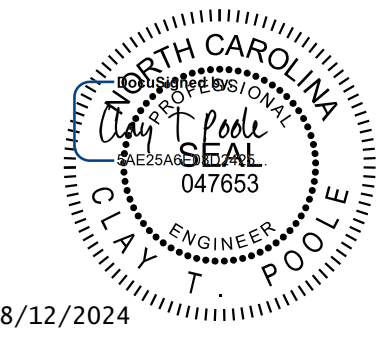
ROADWAY DATA	
GRADE POINT EL. @ STA. 43+65.00 -L-	= 728.50'
BED ELEVATION @ STA. 43+65.00 -L-	= 708.40'
ROADWAY SLOPES 2 : 1	



PROFILE ALONG CULVERT

PROJECT NO. U-4713A
MECKLENBURG COUNTY
 STATION: 43+65.00 -L-

SHEET 1 OF 5



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 421 Fayetteville Street, Suite 600
 Raleigh, NC 27601-1772
 Phone (919) 677-2000
 NC LICENSE # F-0102

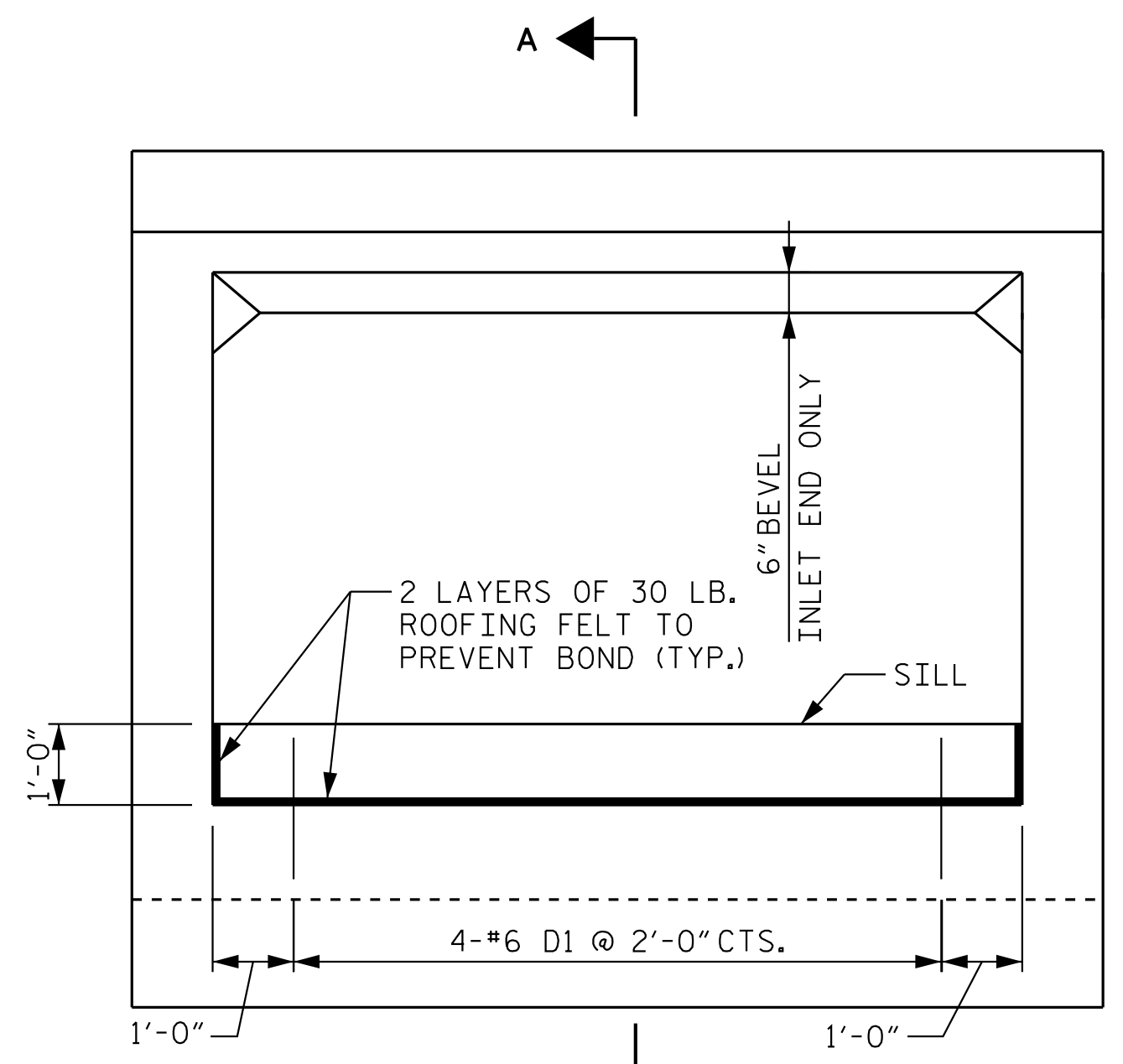
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 8 FT. X 6 FT.
 CONCRETE BOX CULVERT
 85° SKEW

DRAWN BY: J.I. KIMBLE DATE: 05/24
 CHECKED BY: A.L. PHILLIPS DATE: 05/24
 DESIGN ENGINEER OF RECORD: C.T. POOLE DATE: 05/24

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

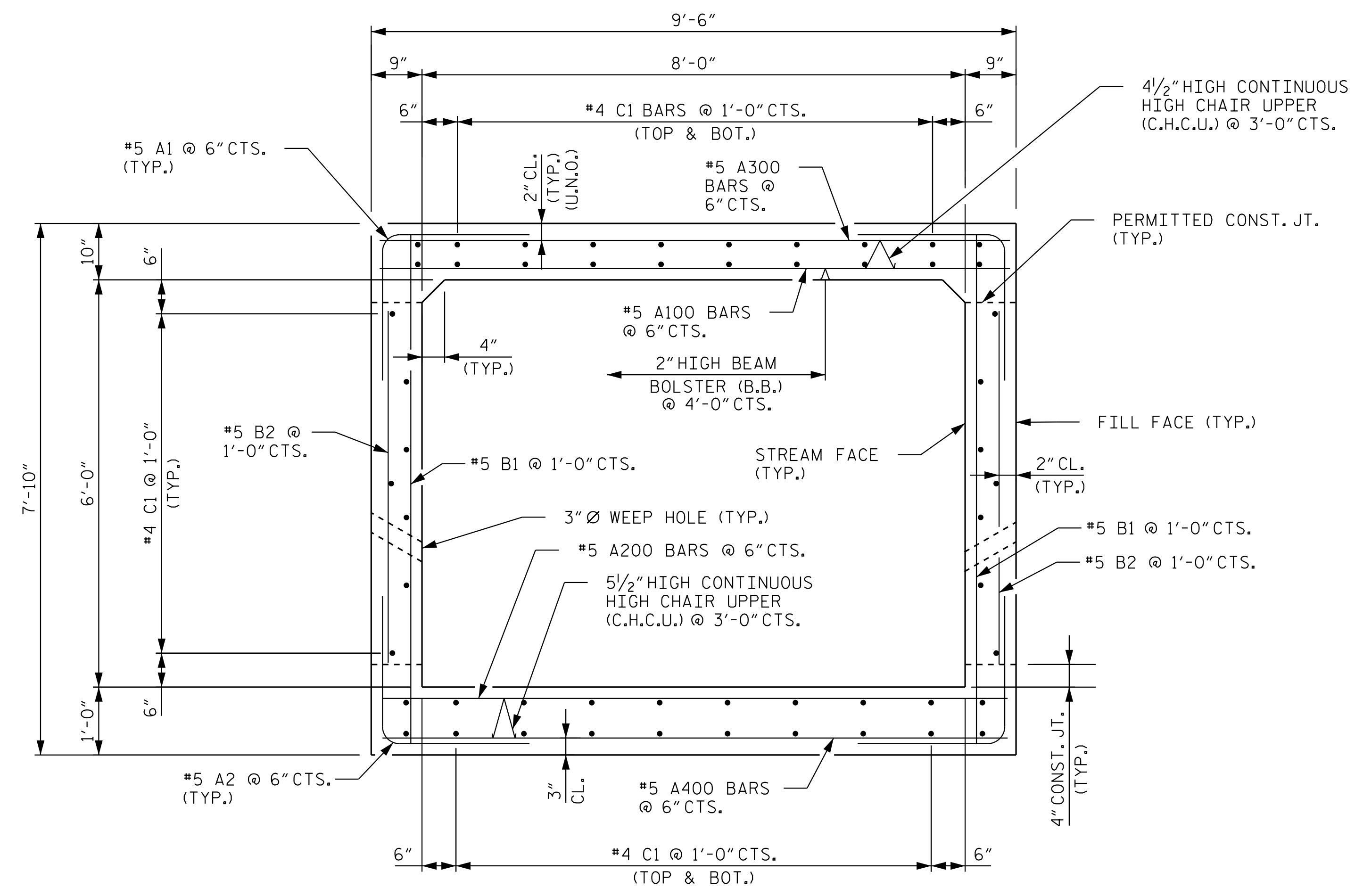
K:\BIDI_Structures\Culvert\NC\0103626 U-4713A Mecke Road Extension\Cad\Drawn\U4713A_SML_C01.dgn 7/11/2024



NOTE:
WING WALLS NOT
SHOWN FOR CLARITY.

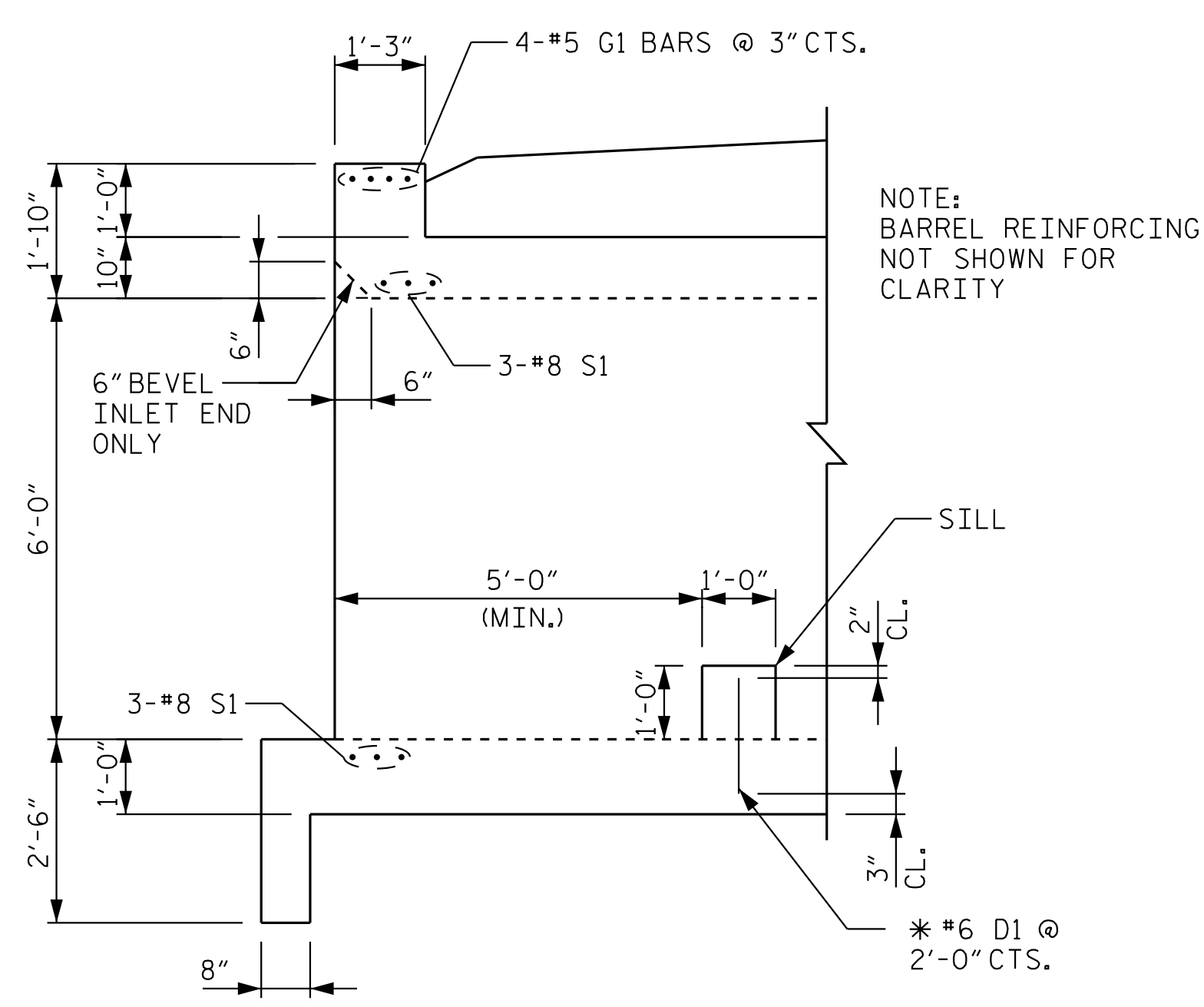
SILL ELEVATION

(LOOKING DOWNSTREAM, INLET END SHOWN. OUTLET END SIMILAR.)



RIGHT ANGLE SECTION OF BARREL

THERE ARE 54 "C" BARS IN SECTION OF BARREL



SECTION A-A

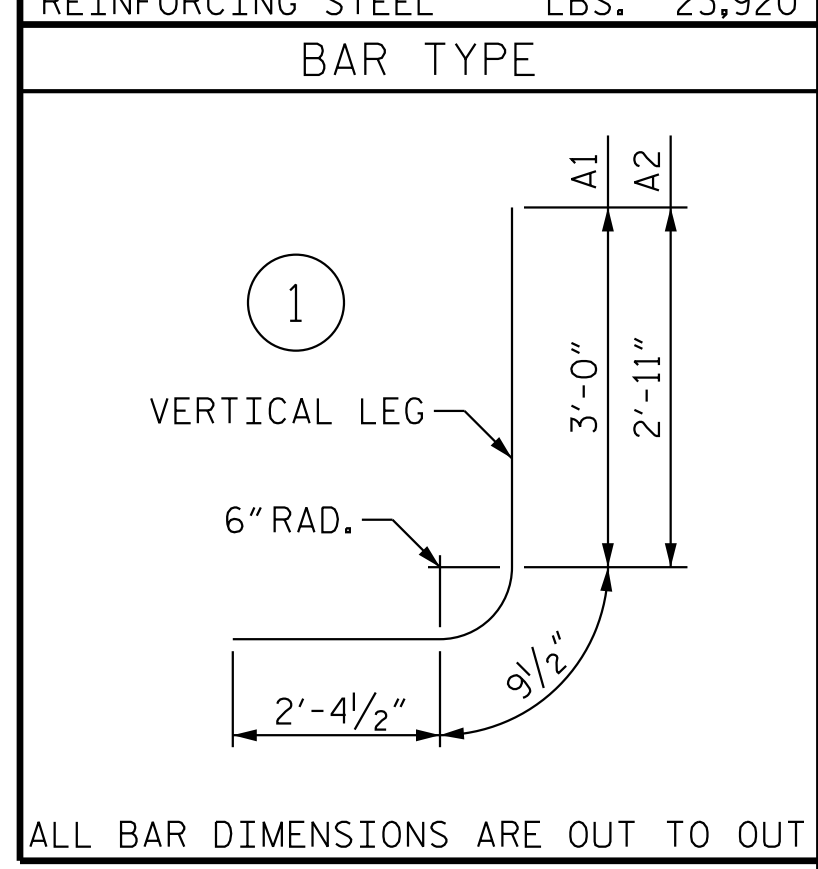
(INLET END SHOWN, OUTLET SIMILAR)

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

NOTE: 1'-0" SILL IS TO BE CAST NORMAL TO CULVERT WALLS.

BAR SIZE	SPLICE LENGTH
#4 C1	2'-5"
#5 B1	2'-4"

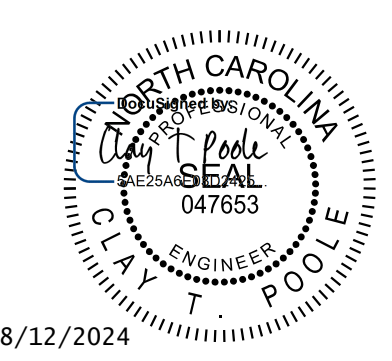
BILL OF MATERIAL						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
A1	490	5	1	6'-2"	3,152	
A2	490	5	1	6'-1"	3,109	
A100	243	5	STR	9'-2"	2,323	
A101	2	5	STR	5'-6"	11	
A102	2	5	STR	3'-6"	7	
A200	243	5	STR	9'-2"	2,323	
A201	2	5	STR	5'-6"	11	
A202	2	5	STR	3'-6"	7	
A300	243	5	STR	9'-2"	2,323	
A301	2	5	STR	5'-6"	11	
A302	2	5	STR	3'-6"	7	
A400	243	5	STR	9'-2"	2,323	
A401	2	5	STR	5'-6"	11	
A402	2	5	STR	3'-6"	7	
B1	246	5	STR	7'-5"	1,903	
B2	246	5	STR	5'-2"	1,326	
C1	216	4	STR	32'-5"	4,677	
D1	8	6	STR	1'-7"	19	
G1	8	5	STR	9'-2"	76	
S1	12	8	STR	9'-2"	294	
REINFORCING STEEL				LBS.	23,920	



ALL BAR DIMENSIONS ARE OUT TO OUT

K:\BIDI_Structures\Culvert\NC\01036426 U-4713A McKee Road Extension\Cad\Drawn\U4713A_SMU_C02.dgn

DRAWN BY: J.I. KIMBLE DATE: 05/24
 CHECKED BY: A.L. PHILLIPS DATE: 05/24
 DESIGN ENGINEER OF RECORD: C.T. POOLE DATE: 05/24



Kimley»Horn

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MECKLENBURG COUNTY
 STATION: 43+65.00 -L-

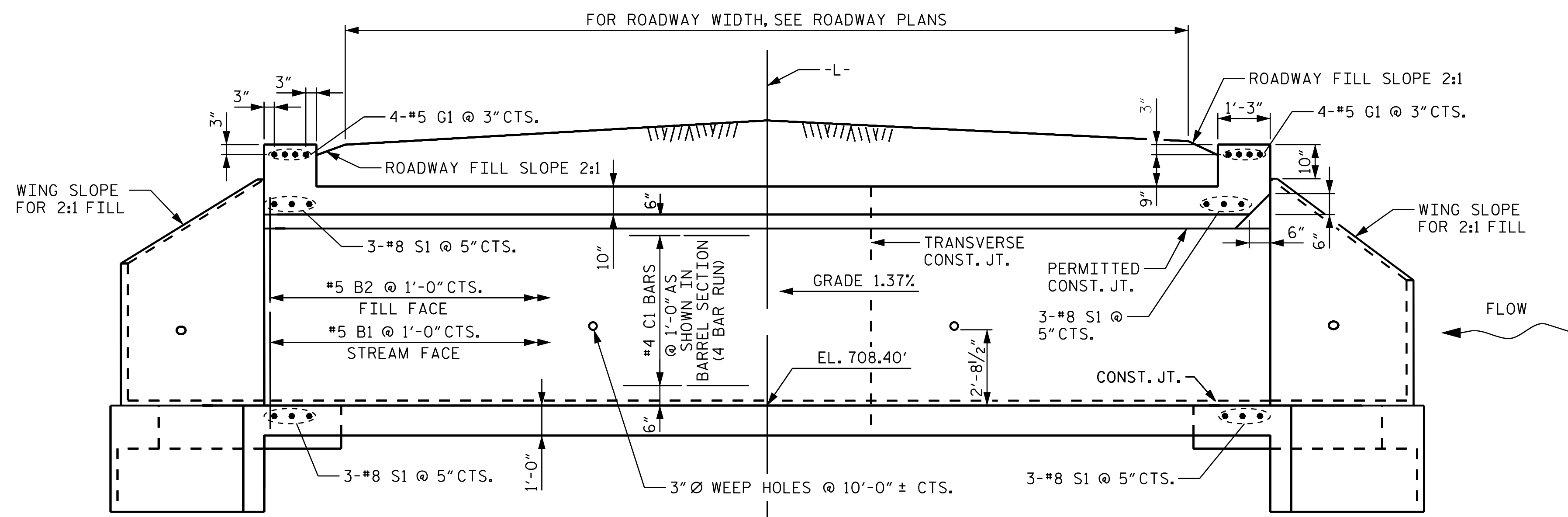
SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

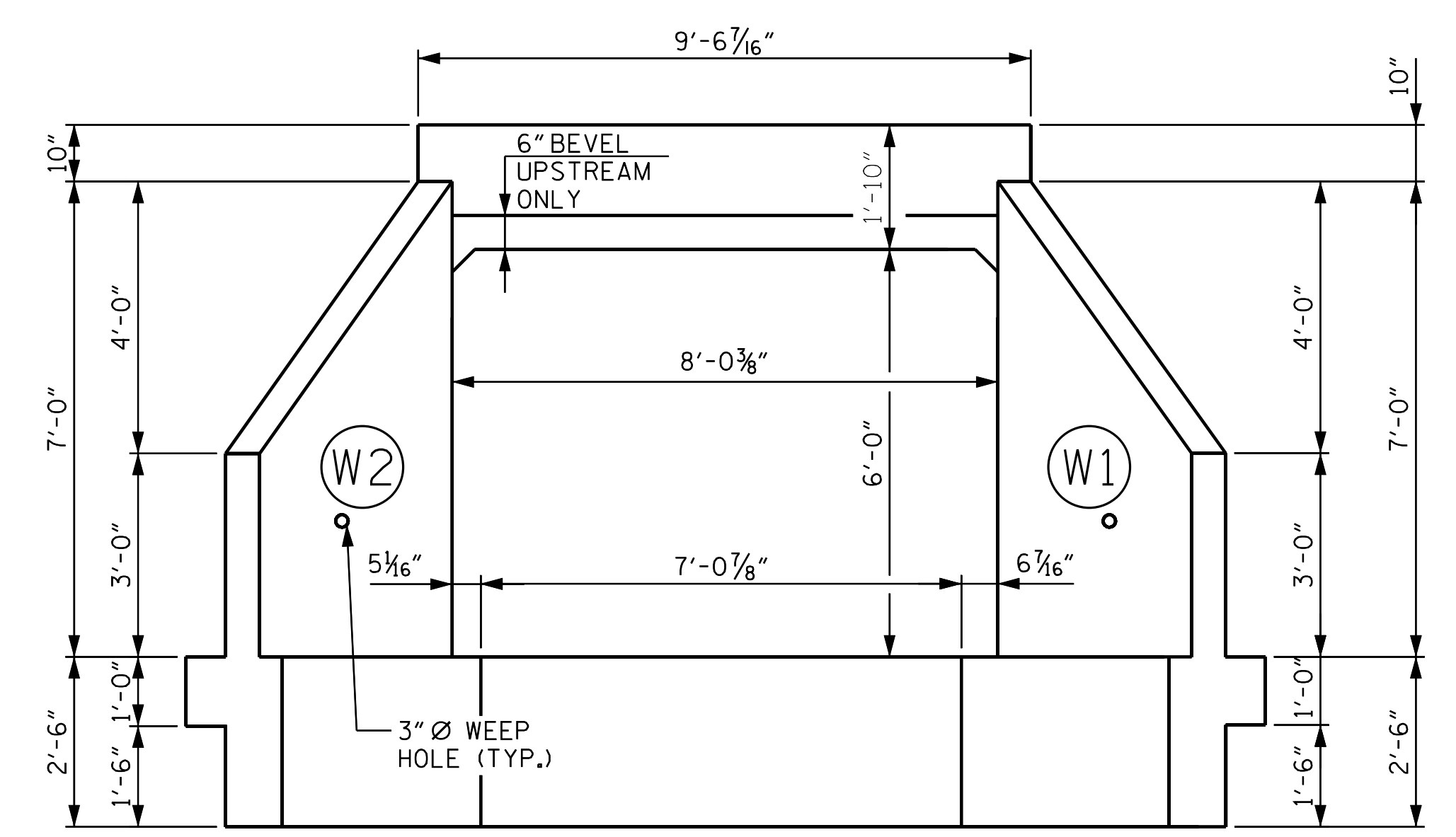
**SINGLE 8 FT. X 6 FT.
 CONCRETE BOX CULVERT
 85° SKEW**

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

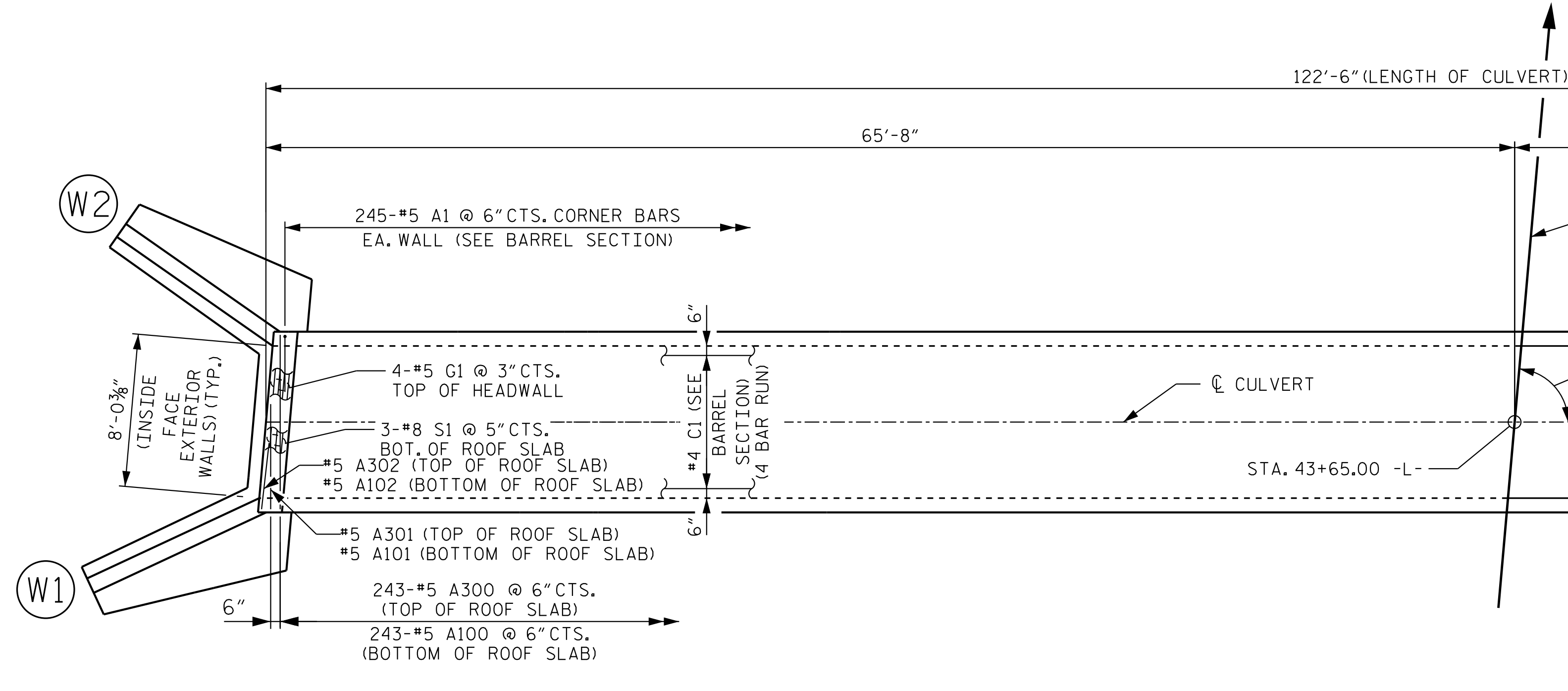
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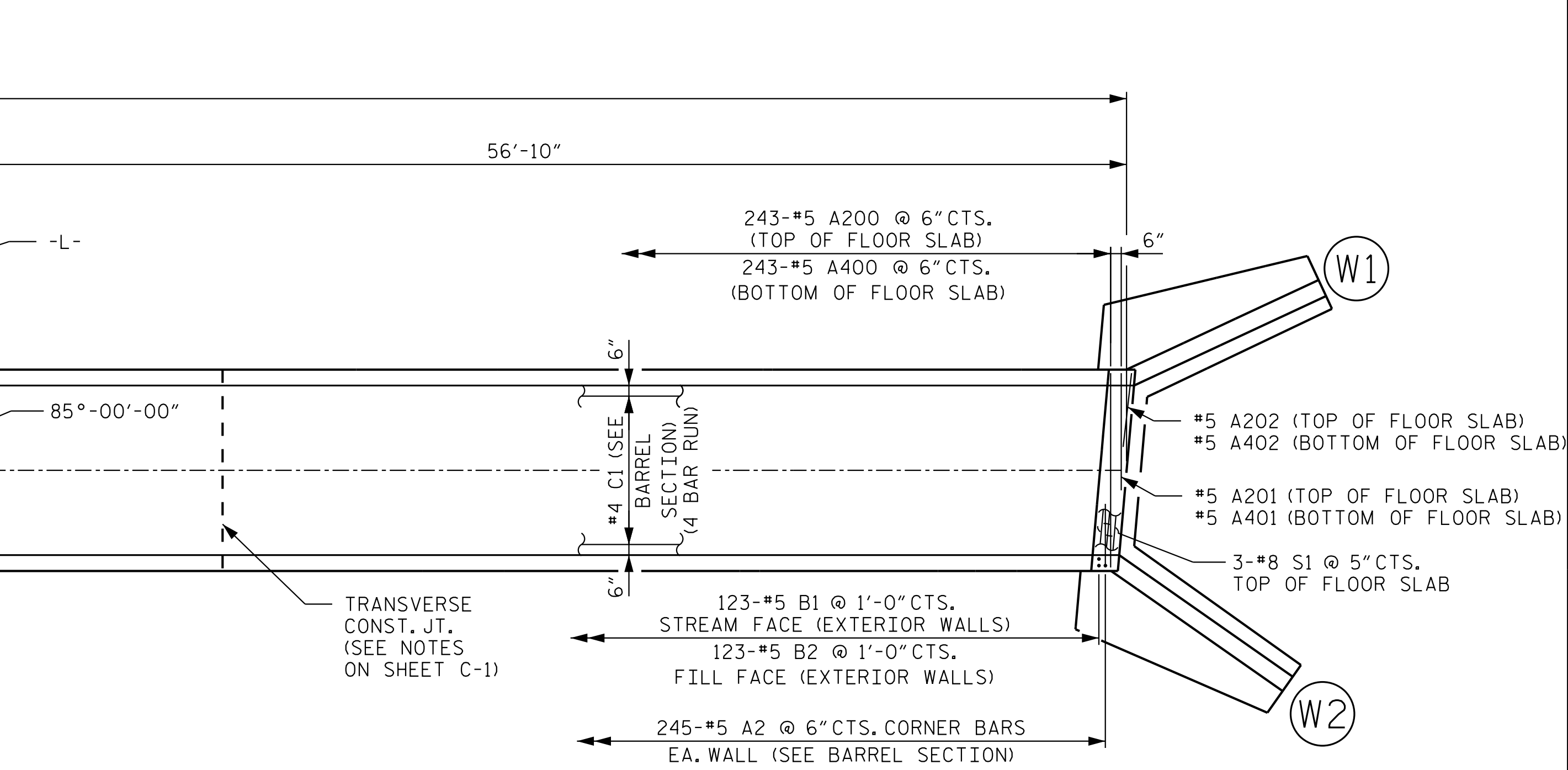
CULVERT SECTION NORMAL TO ROADWAY



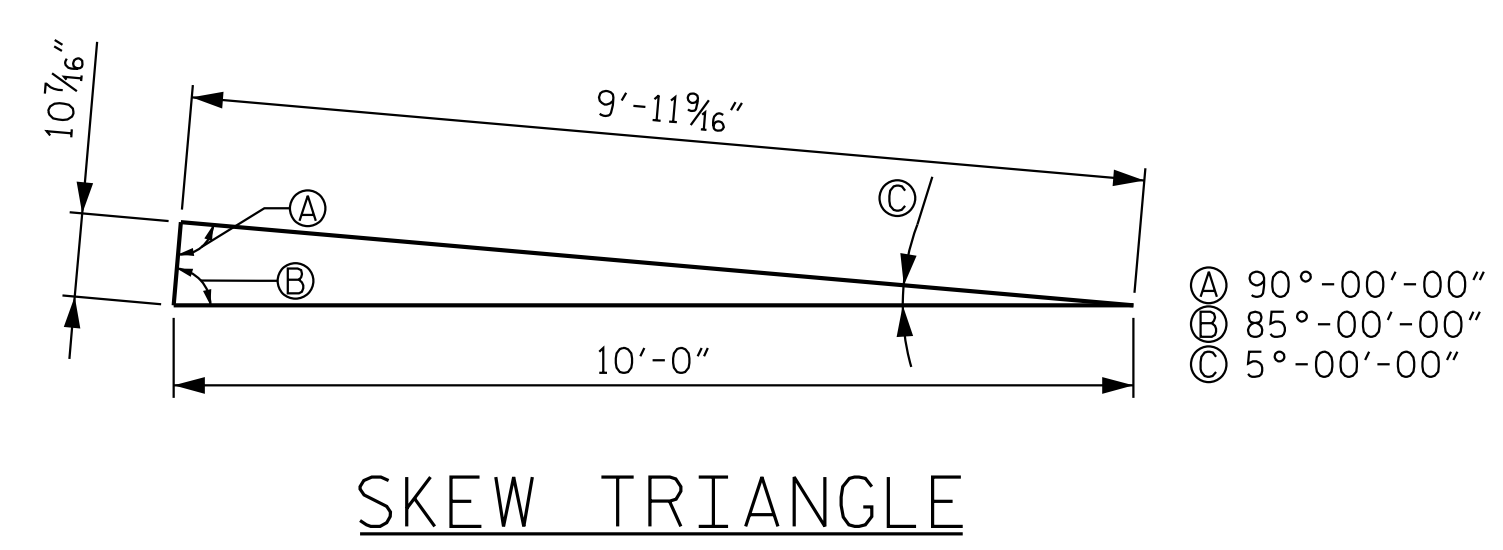
END ELEVATION NORMAL TO SKEW



PART PLAN - ROOF SLAB



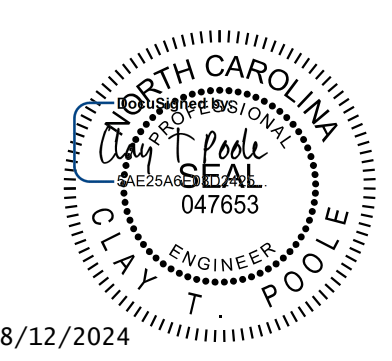
PART PLAN - FLOOR SLAB



SKEW TRIANGLE

PROJECT NO. U-4713A
MECKLENBURG COUNTY
 STATION: 43+65.00 -L-

SHEET 3 OF 5



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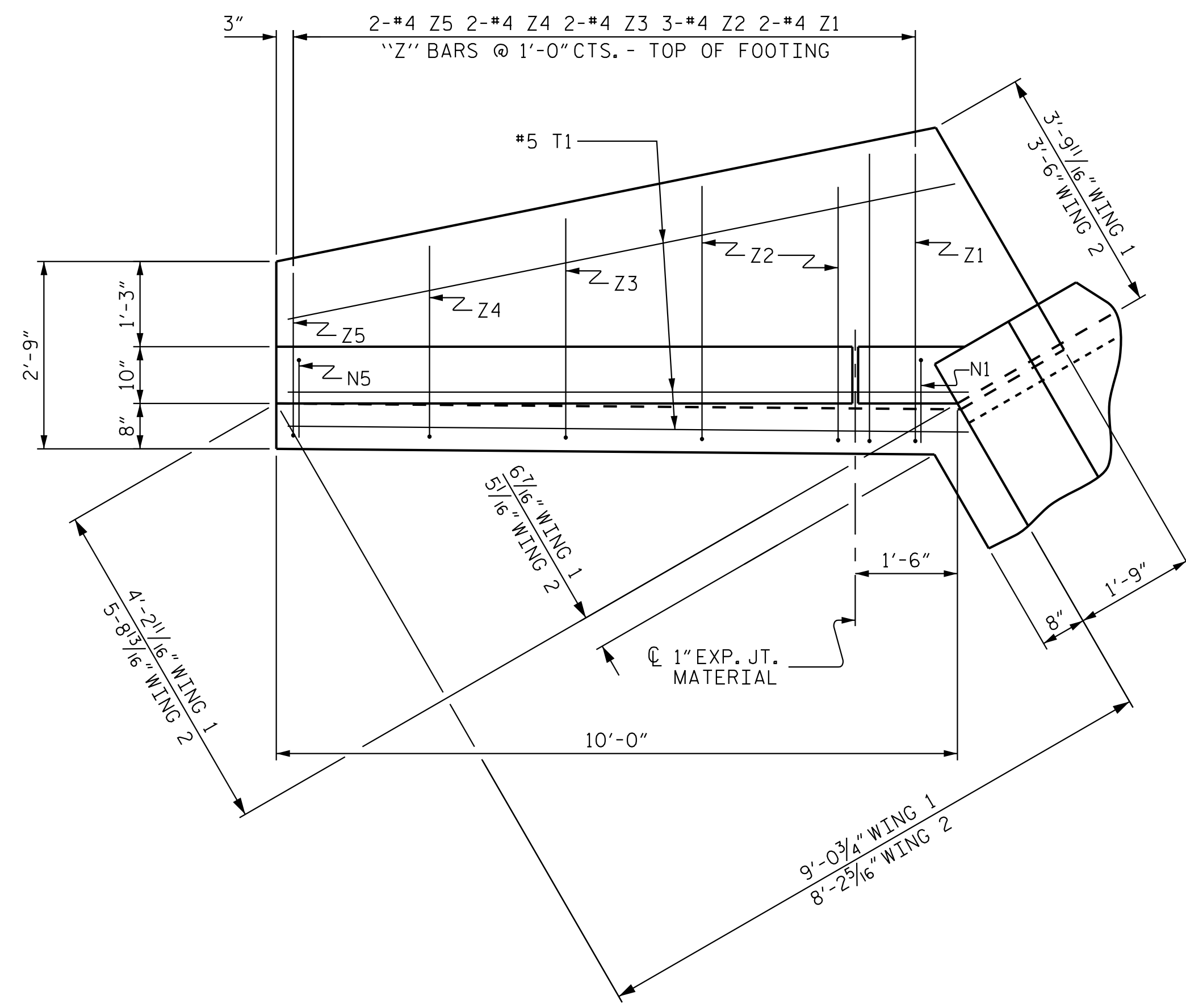
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 8 FT. X 6 FT.
 CONCRETE BOX CULVERT
 85° SKEW

REVISIONS						SHEET NO. C-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

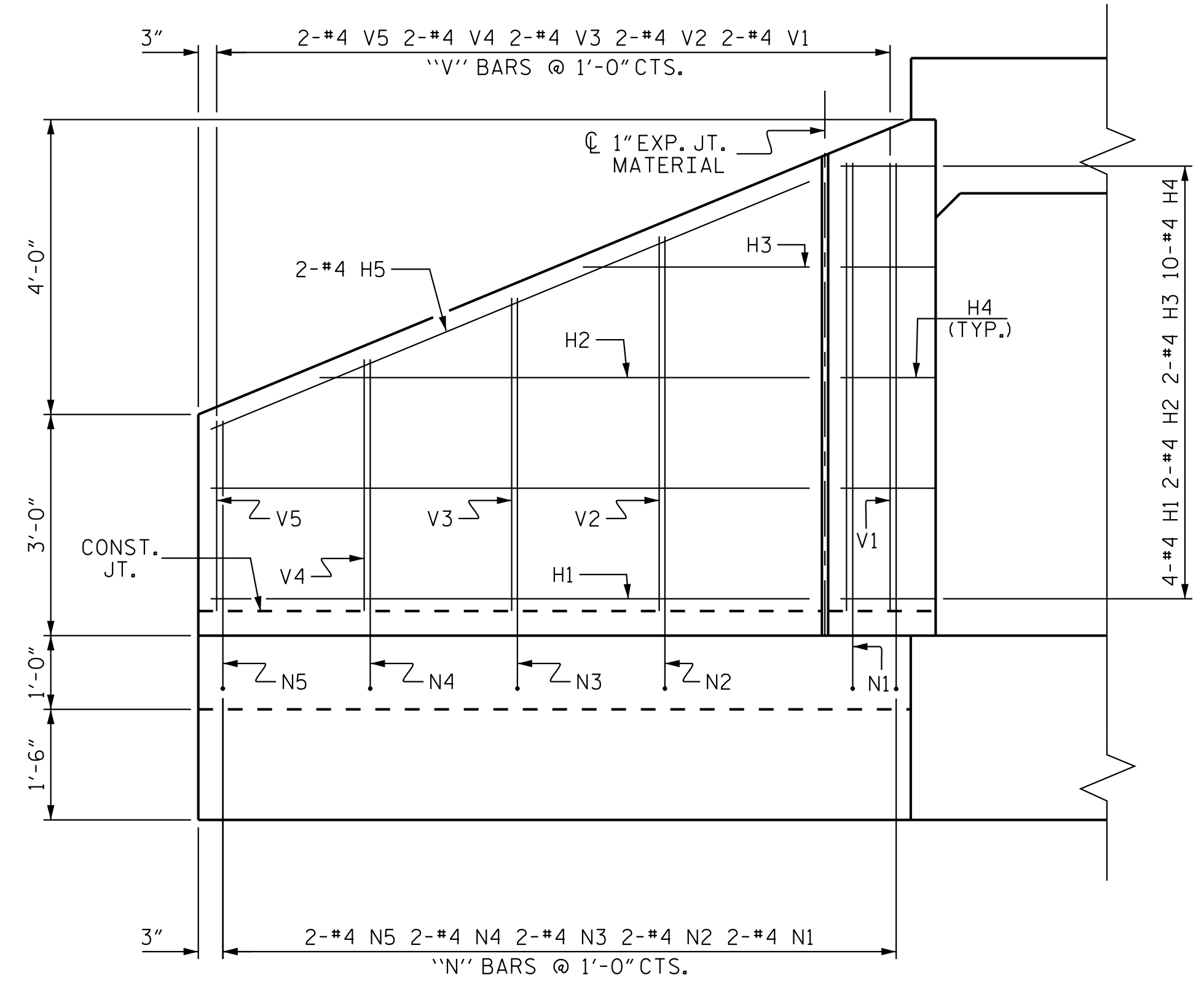
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 7/11/2024

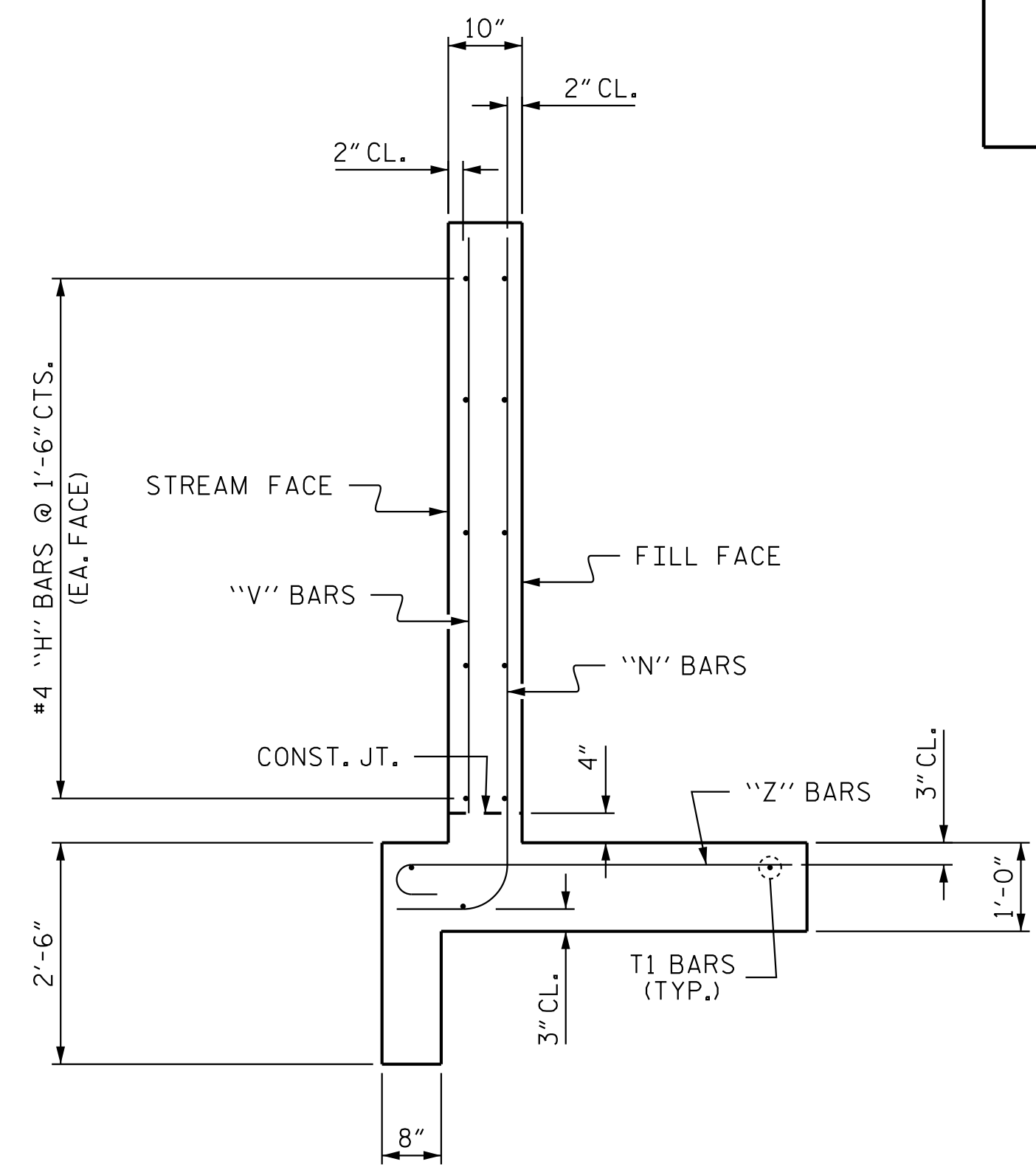
DRAWN BY: J.I. KIMBLE DATE: 05/24
 CHECKED BY: A.L. PHILLIPS DATE: 05/24
 DESIGN ENGINEER OF RECORD: C.T. POOLE DATE: 05/24



PLAN

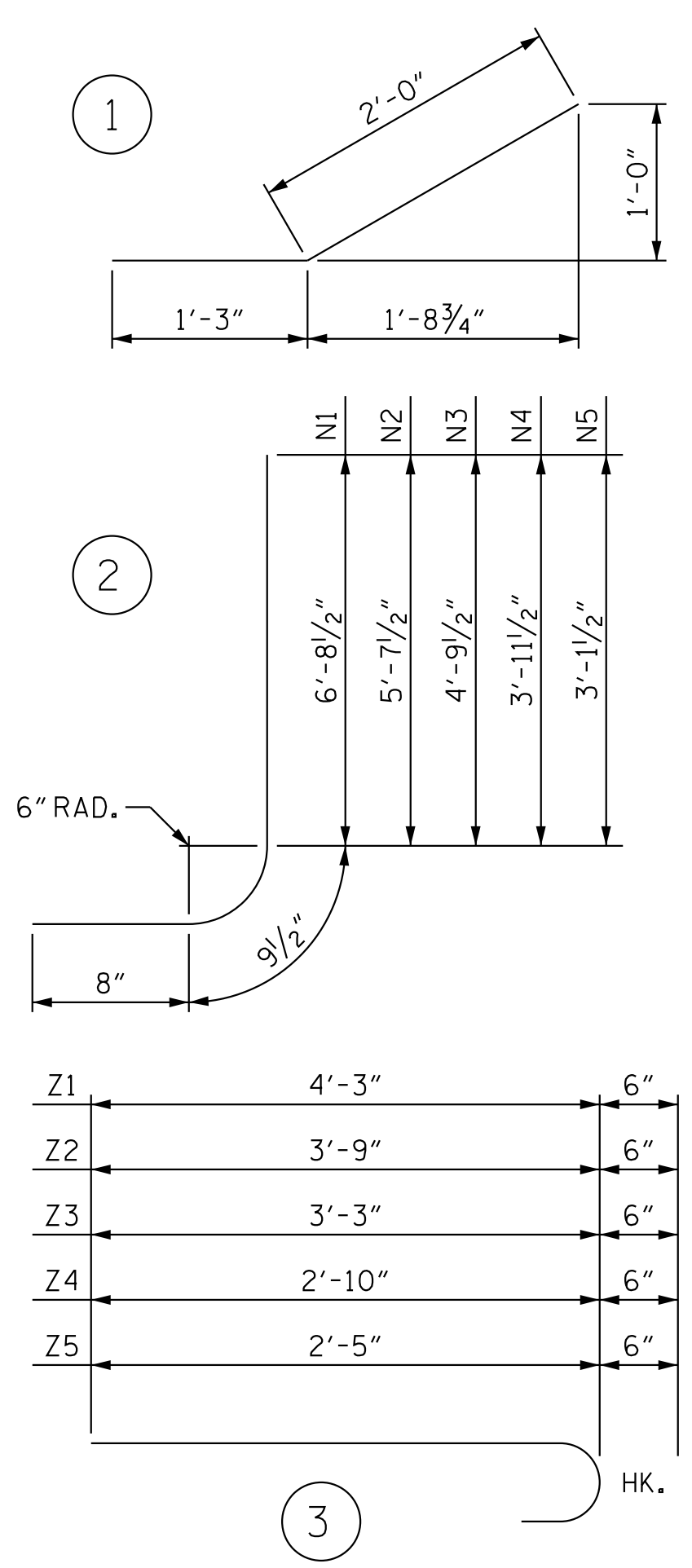


ELEVATION



TYPICAL WING SECTION

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

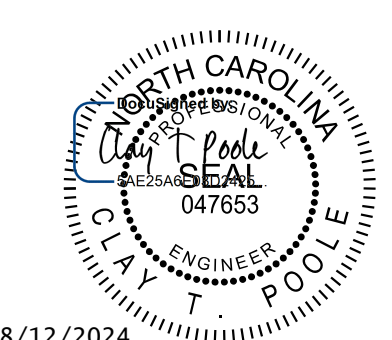
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	16	#4	STR	8'-1"	86
H2	8	#4	STR	6'-8"	36
H3	8	#4	STR	3'-1"	16
H4	40	#4	1	3'-3"	87
H5	8	#4	STR	8'-9"	47
N1	8	#4	2	8'-2"	44
N2	8	#4	2	7'-1"	38
N3	8	#4	2	6'-3"	33
N4	8	#4	2	5'-5"	29
N5	8	#4	2	4'-7"	24
T1	12	#5	STR	10'-0"	125
V1	8	#4	STR	6'-1"	33
V2	8	#4	STR	5'-1"	27
V3	8	#4	STR	4'-3"	23
V4	8	#4	STR	3'-5"	18
V5	8	#4	STR	2'-7"	14
Z1	8	#4	3	4'-9"	25
Z2	12	#4	3	4'-3"	34
Z3	8	#4	3	3'-9"	20
Z4	8	#4	3	3'-4"	18
Z5	8	#4	3	2'-11"	16

REINFORCING STEEL FOR 4 WINGS 793 LBS

CLASS A CONCRETE
 4 WINGS 13.8 CY
 2 HEADWALL 0.9 CY
 END CURTAIN WALLS 0.9 CY
 TOTAL 15.6 CY

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DRAWN BY: J.I. KIMBLE DATE: 05/24
 CHECKED BY: A.L. PHILLIPS DATE: 05/24
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MECKLENBURG COUNTY
 STATION: 43+65.00 -L-

SHEET 4 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**WING DETAILS
 FOR
 CONCRETE BOX CULVERT**
 H = 6'-0" SLOPE = 2:1
 85° SKEW

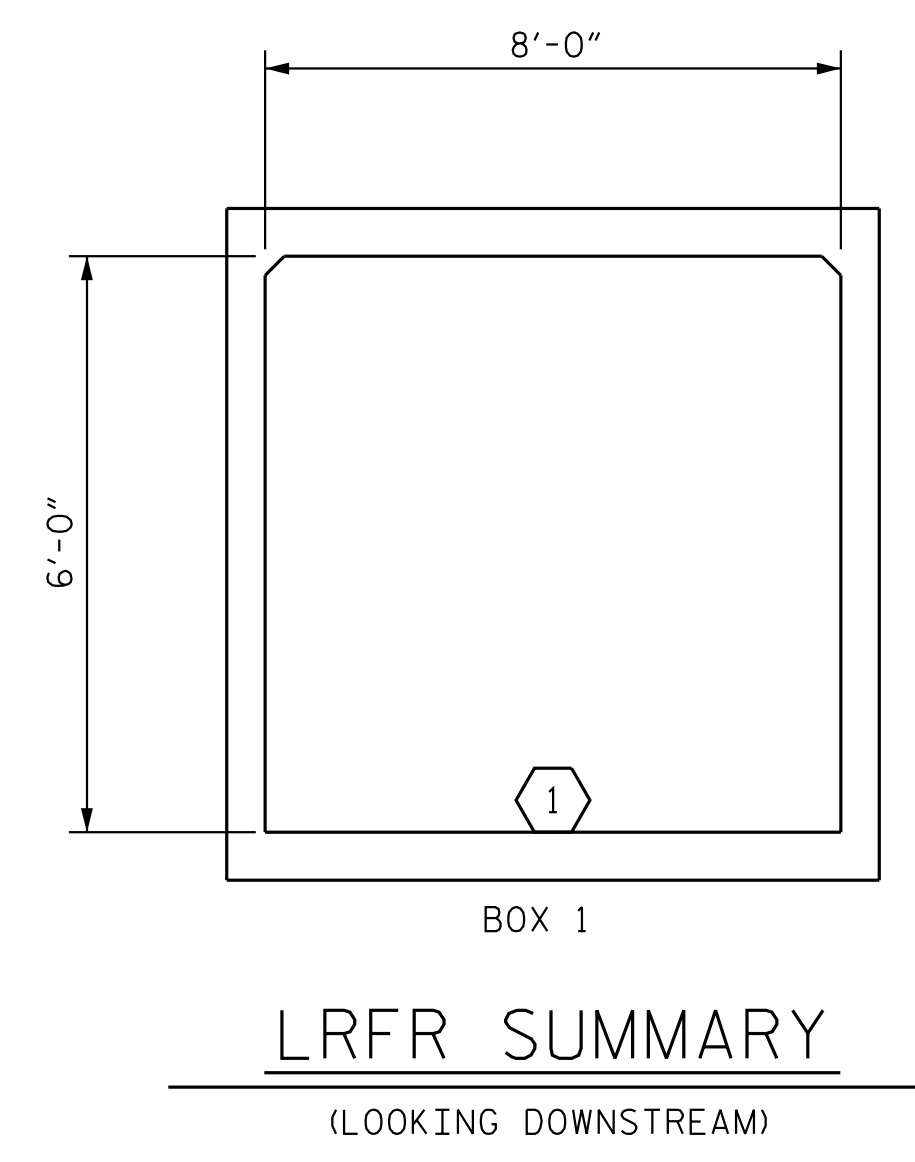
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NO.	BY:	DATE:	NO.	BY:	DATE:	C-4
1			3			TOTAL SHEETS
2			4			5

PERMANENT LOAD 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
WA	1.00	--

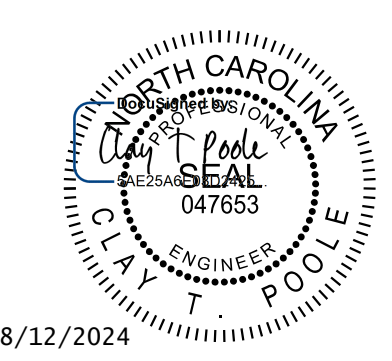
LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS										
	CONTROLLING LOAD RATING	MINIMUM RATING FACTOR (RF)	STRENGTH I LIMIT STATE							
			MOMENT				SHEAR			
			RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)
PERMANENT LOAD RATING	①	1.22	1.22	1	BOTTOM SLAB	4.75	1.47	1	BOTTOM SLAB	0.38

NOTES:
 RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.
 THE EFFECTS OF LIVE LOAD ON DESIGN AND LOAD RATING MAY BE NEGLECTED FOR CULVERTS WITH CERTAIN FILL DEPTHS DESCRIBED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 CULVERTS WITH NEGLIGIBLE LIVE LOAD SHOULD BE LOAD RATED FOR PERMANENT LOADS ONLY IN ACCORDANCE WITH THE AASHTO MANUAL FOR BRIDGE EVALUATION.



PROJECT NO. U-4713A
MECKLENBURG COUNTY
 STATION: 43+65.00 -L-

SHEET 5 OF 5



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 Phone (919) 677-2000
 NC LICENSE # F-0102

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 REINFORCED CONCRETE
 BOX CULVERTS
 (DEEP FILLS)

REVISIONS						SHEET NO.
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①			③			TOTAL SHEETS
②			④			5

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STD. NO. LRFR7

7/11/2024 K:\BIDI_Structures\Culvert\NC\01036426 U-4713A McKeese Road Extension\Cad\Drawn\U4713A_SMU_C005.dgn

ASSEMBLED BY : J.J. KIMBLE	DATE : 05/24
CHECKED BY : C.T. POOLE	DATE : 05/24
DRAWN BY : BNB 6/19	
CHECKED BY : THC 6/19	

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 2024 "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 $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS; TOP CORNERS OF CURBS MAY BE ROUNDED TO $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " 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 $\frac{1}{4}$ " 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 $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset 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 $\frac{5}{16}$ " 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 $\frac{1}{16}$ " 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

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