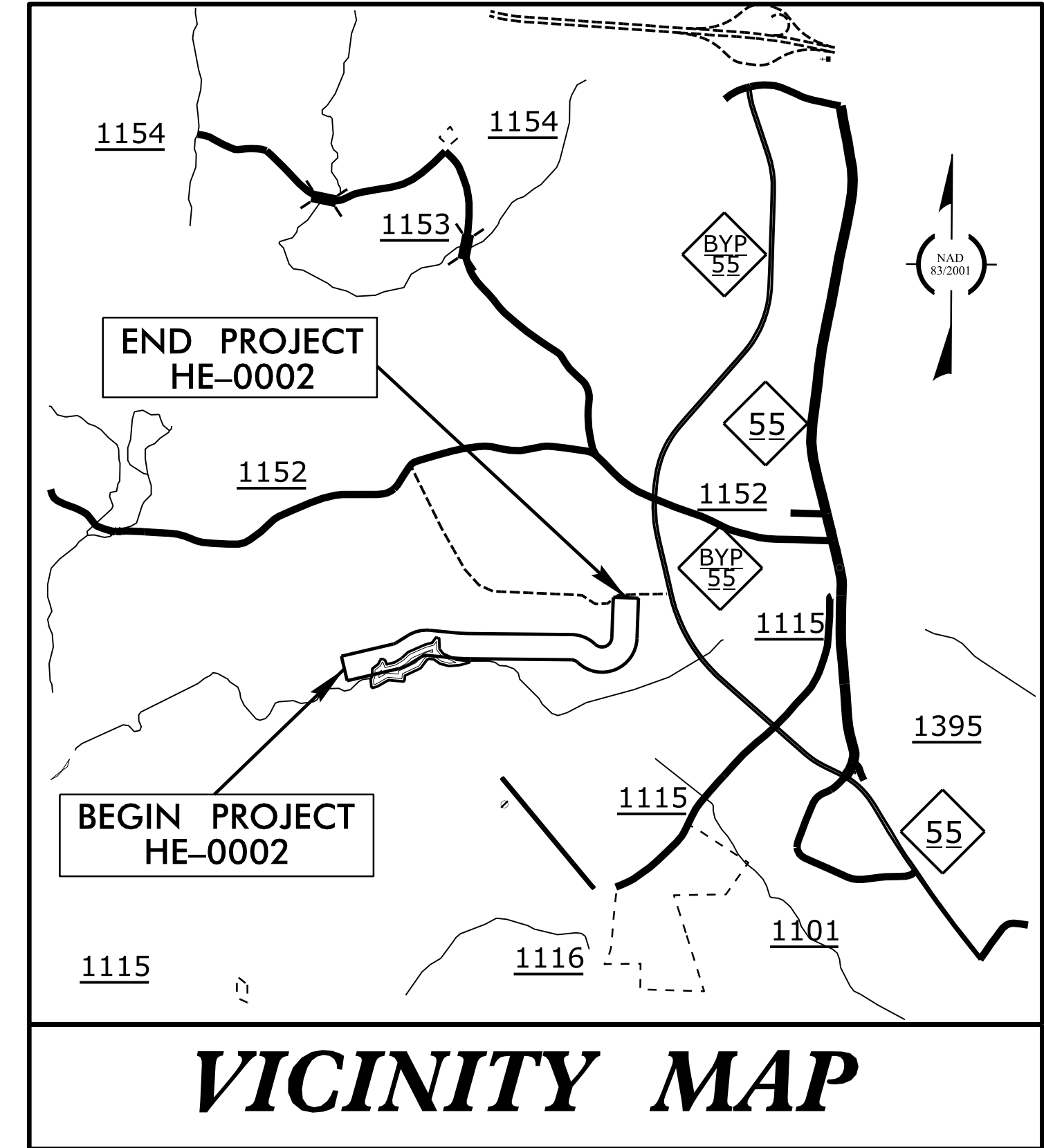


PROJECT: HE-0002

CONTRACT: C2044898

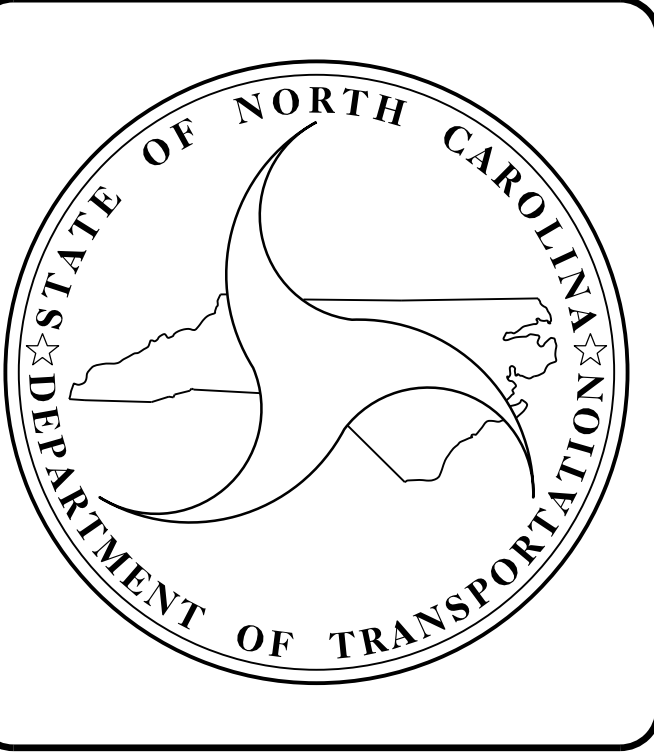
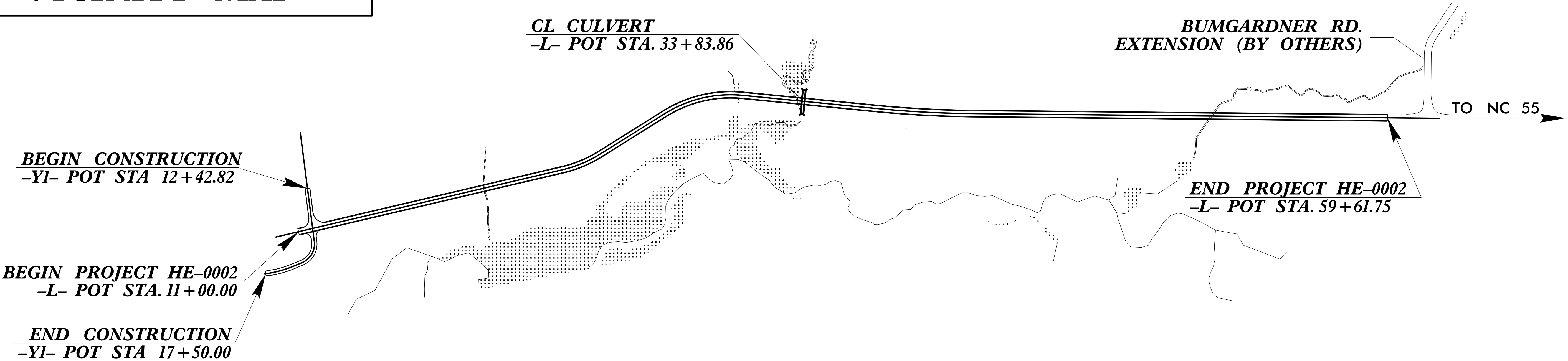


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
WAKE COUNTY

LOCATION: HOLLY SPRINGS BUSINESS PARK SOUTHERN ACCESS ROAD
FROM FUJI DIOSYNTH BIOTECHNOLOGIES PROPERTY
& SEWER PUMP STATION TO 175 FEET WEST OF THE
BUMGARDNER ROAD EXTENSION INTERSECTION
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HE-0002		5
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49745.1.1	N/A	P.E.	
49745.2.1	N/A	R/W	
49745.2.2	N/A	UTIL.	
49745.3.1	N/A	CONST.	

CULVERT



DESIGN DATA	
ADT 2025 =	8,000
ADT 2045 =	10,700
K =	13 %
D =	N/A %
T =	N/A %
V =	40 MPH
TTST =	N/A DUALS = N/A
FUNC CLASS =	LOCAL REGIONAL TIER

PROJECT LENGTH
LENGTH ROADWAY PROJECT HE-0002 = 0.918 MILES
LENGTH CULVERT PROJECT HE-0002 = 0.003 MILES
TOTAL LENGTH PROJECT HE-0002 = 0.921 MILES

Prepared in the Office of:

CDM Smith

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2024 STANDARD SPECIFICATIONS

LETTING DATE : JUNE 17, 2025

DAVID Z. KEISER, P.E.
PROJECT ENGINEER

TING H. FANG, P.E.
PROJECT DESIGN ENGINEER

Seal of Ting H. Fang, P.E., Professional Engineer, State of North Carolina, No. 16301, dated 4/3/2025.

CULVERT SECTION NORMAL TO ROADWAY

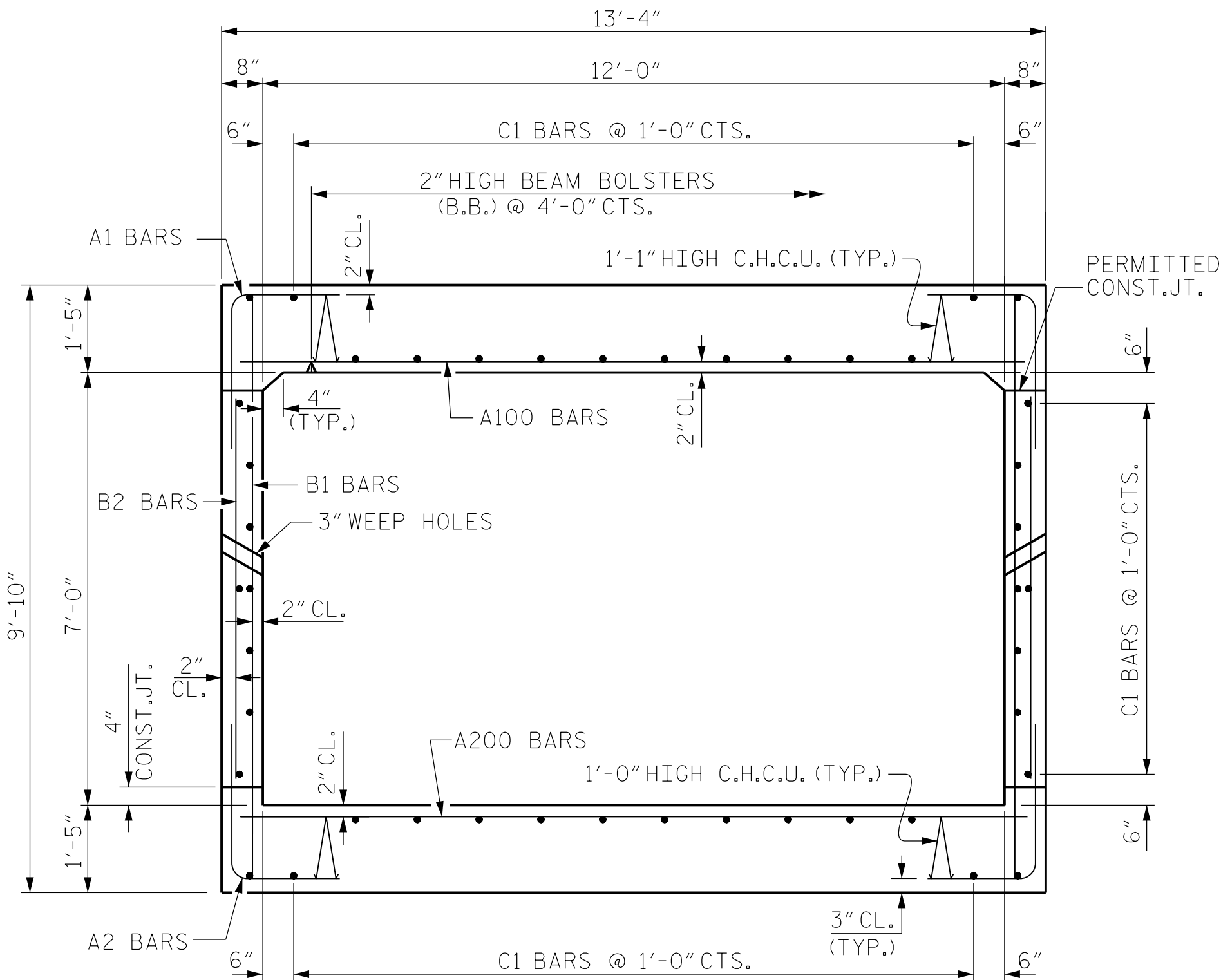
PART PLAN - ROOF SLAB

PART PLAN - FLOOR SLAB

END ELEVATION NORMAL TO SKEW

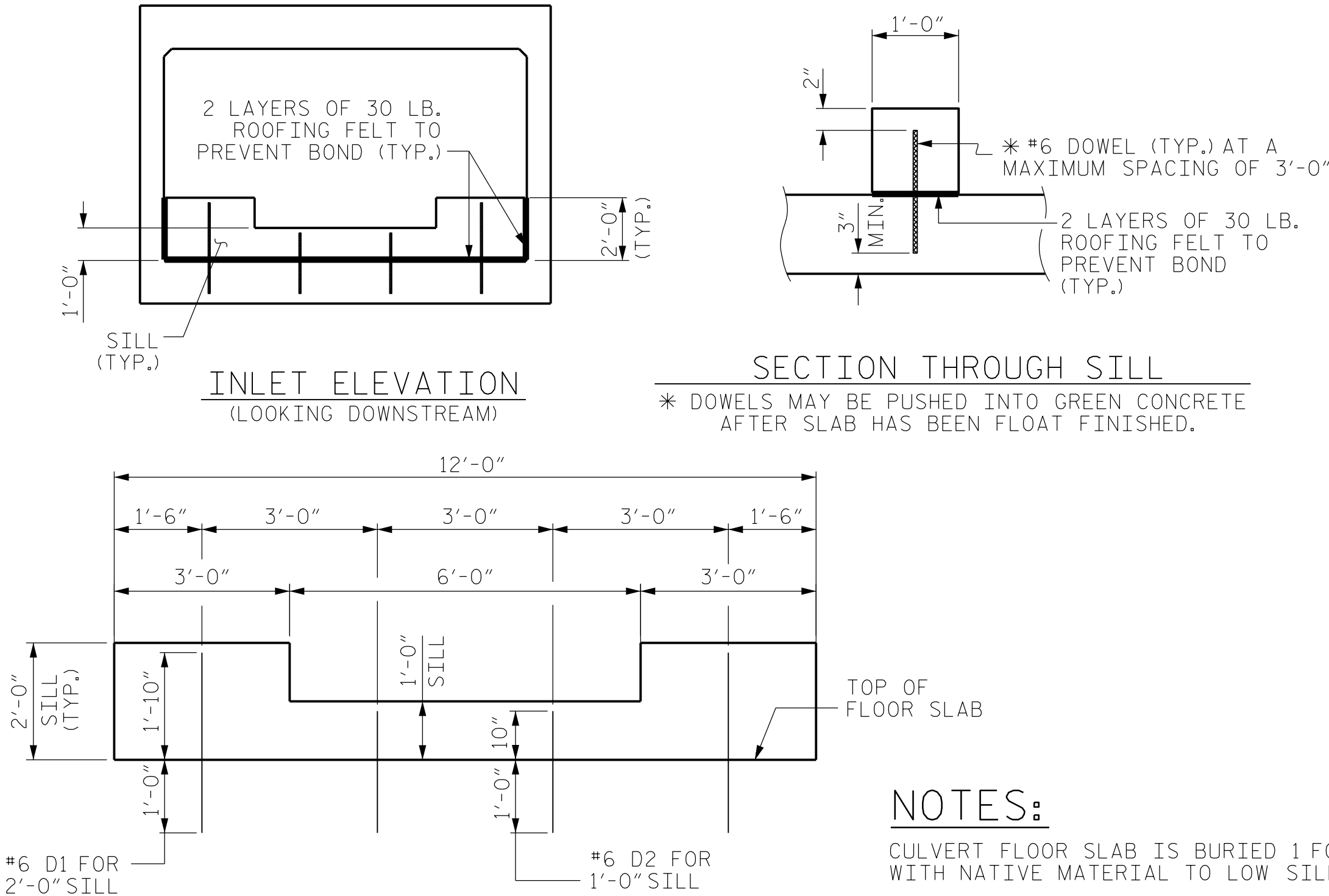
CONNECTION OF WING FOOTING AND FLOOR SLAB WHEN SLAB IS THICKER THAN FOOTING

<div style="border: 2px solid black; padding: 5px; text-align: center;"> <h1 style="margin: 0;">CDM Smith</h1> </div>	<div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 10px;"> DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED </div> <div> CDM SMITH 5400 Glenwood Ave, Suite 400 Raleigh, NC 27612-3228 NC COA No. F-1255 </div>		
DRAWN BY : _____ CHECKED BY : _____ DESIGN ENGINEER : _____	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; border-right: 1px solid black; padding: 5px;"> JJR THF THF </td> <td style="width: 60%; padding: 5px;"> DATE : 1/23 DATE : 1/25 DATE : 1/25 </td> </tr> </table> <div style="text-align: right; padding-top: 10px; font-weight: bold;">DWG. No. _____</div>	JJR THF THF	DATE : 1/23 DATE : 1/25 DATE : 1/25
JJR THF THF	DATE : 1/23 DATE : 1/25 DATE : 1/25		



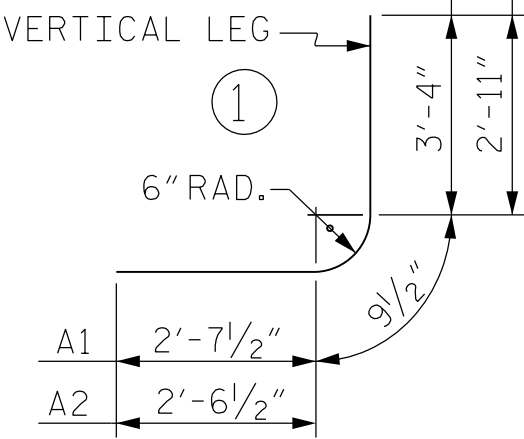
RIGHT ANGLE SECTION OF BARREL

THERE ARE 44 "C" BARS IN SECTION OF BARREL



ELEVATION
SILL DETAILS

BAR TYPE		BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
A1	400	#4	1	6'-9"	1804		
A2	400	#4	1	6'-3"	1670		
B1	200	#4	STR	9'-4"	1247		
B2	200	#4	STR	6'-4"	846		
A100	200	#6	STR	13'-0"	3905		
A200	200	#6	STR	13'-0"	3905		
C1	132	#5	STR	34'-6"	3042		
D1	4	#6	STR	2'-10"	17		
D2	4	#6	STR	1'-10"	11		
G1	4	#5	STR	13'-0"	35		
REINFORCING STEEL						LBS.	16,483



BAR DIMENSIONS ARE OUT TO OUT

SPLICE LENGTHS CHART

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

NOTES:

CULVERT FLOOR SLAB IS BURIED 1 FOOT BELOW EXISTING STREAM BED. BACKFILL WITH NATIVE MATERIAL TO LOW SILL HEIGHT IN THE BARREL.

NATIVE MATERIAL BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS FLOW CHANNEL.

NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE CULVERT BARREL. AT THE CONTRACTOR'S OPTION, RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE BARREL.

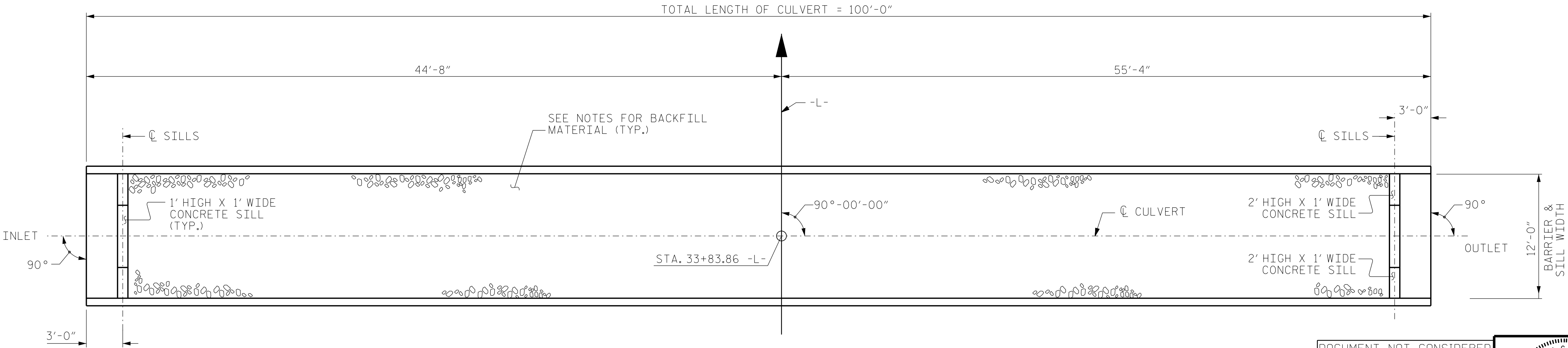
IF RIP RAP IS USED TO LINE THE FLOW CULVERT BARREL, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE.

FOR NATIVE MATERIAL SEE "NATIVE MATERIAL SPECIFICATION FOR BACKFILLING NOTE" ON SHEET C-1.

SILLS ARE TO BE 1' AND 2' HIGH , CAST IN PLACED AND ATTACHED BY DOWELS.

TOP OF LOW SILL SHOULD MATCH STREAM BED ELEVATION.

THE ENTIRE COST OF WORK REQUIRED TO PLACE EXCAVATED OR SUPPLEMENTAL MATERIAL AS SHOWN ON THE PLANS SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR CULVERT EXCAVATION.



PLAN

PROJECT NO. HE-0002
WAKE COUNTY
STATION: 33+83.86 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BARREL STANDARD
SINGLE 12' X 7'
CONCRETE BOX CULVERT

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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CDM SMITH
5400 Glenwood Ave, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

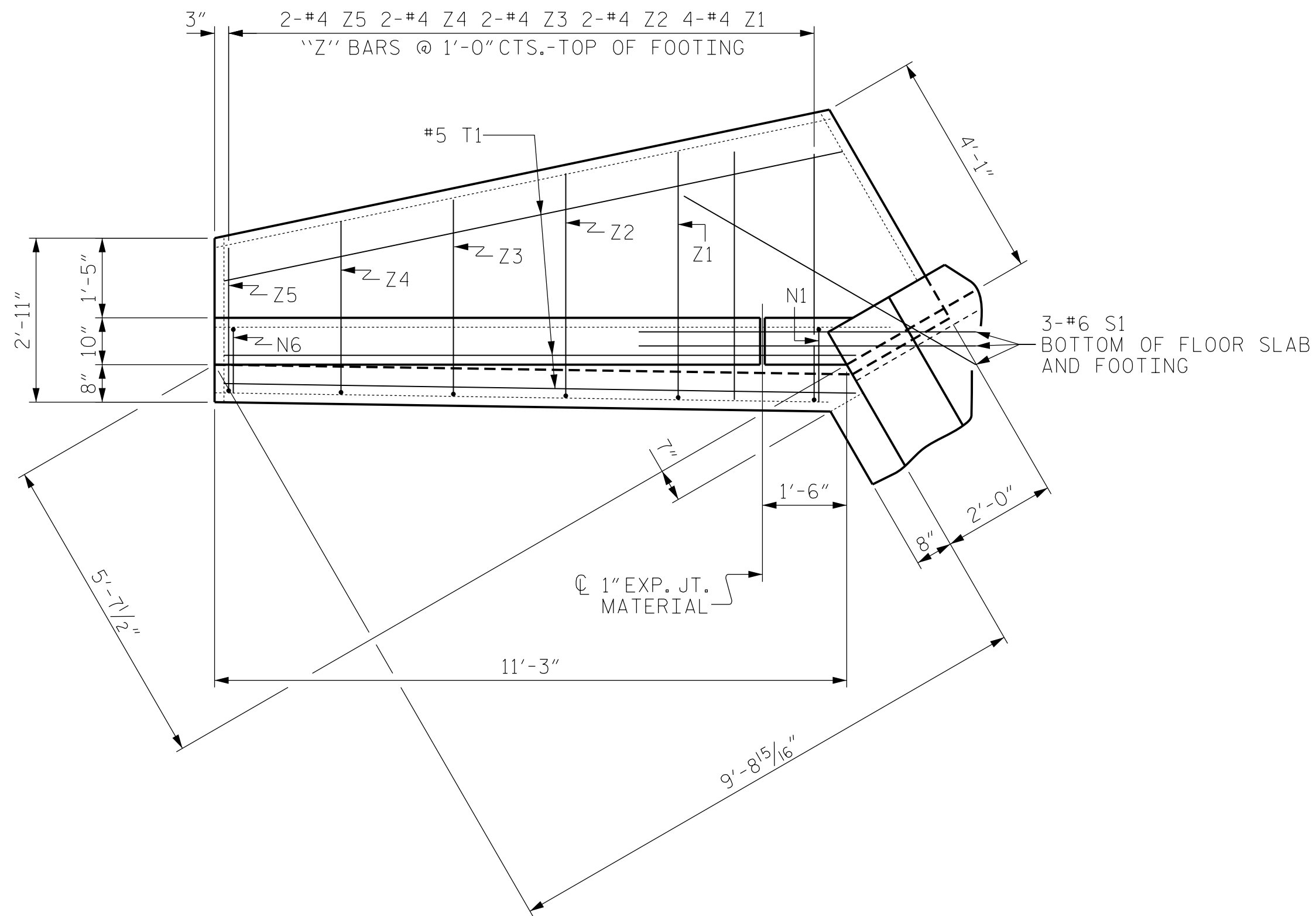
CHECKED BY : THF DATE : 1/25
DESIGN ENGINEER : THF DATE : 1/25

DWG. No.

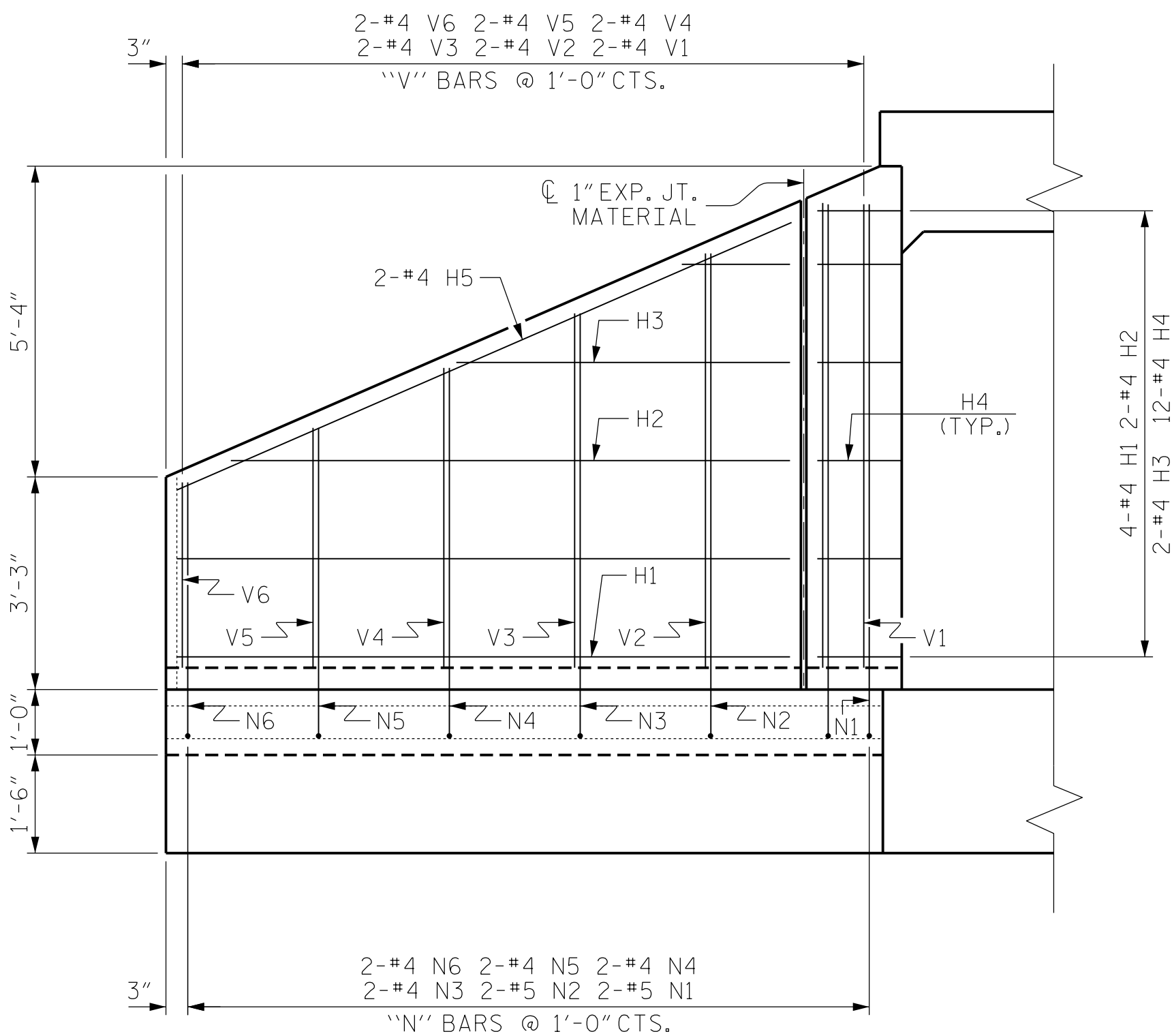
NORTH CAROLINA
PROFESSIONAL
SEAL
16301
ENGINEER
TUNG H. FANG

Tung H. Fang
3/6/2025

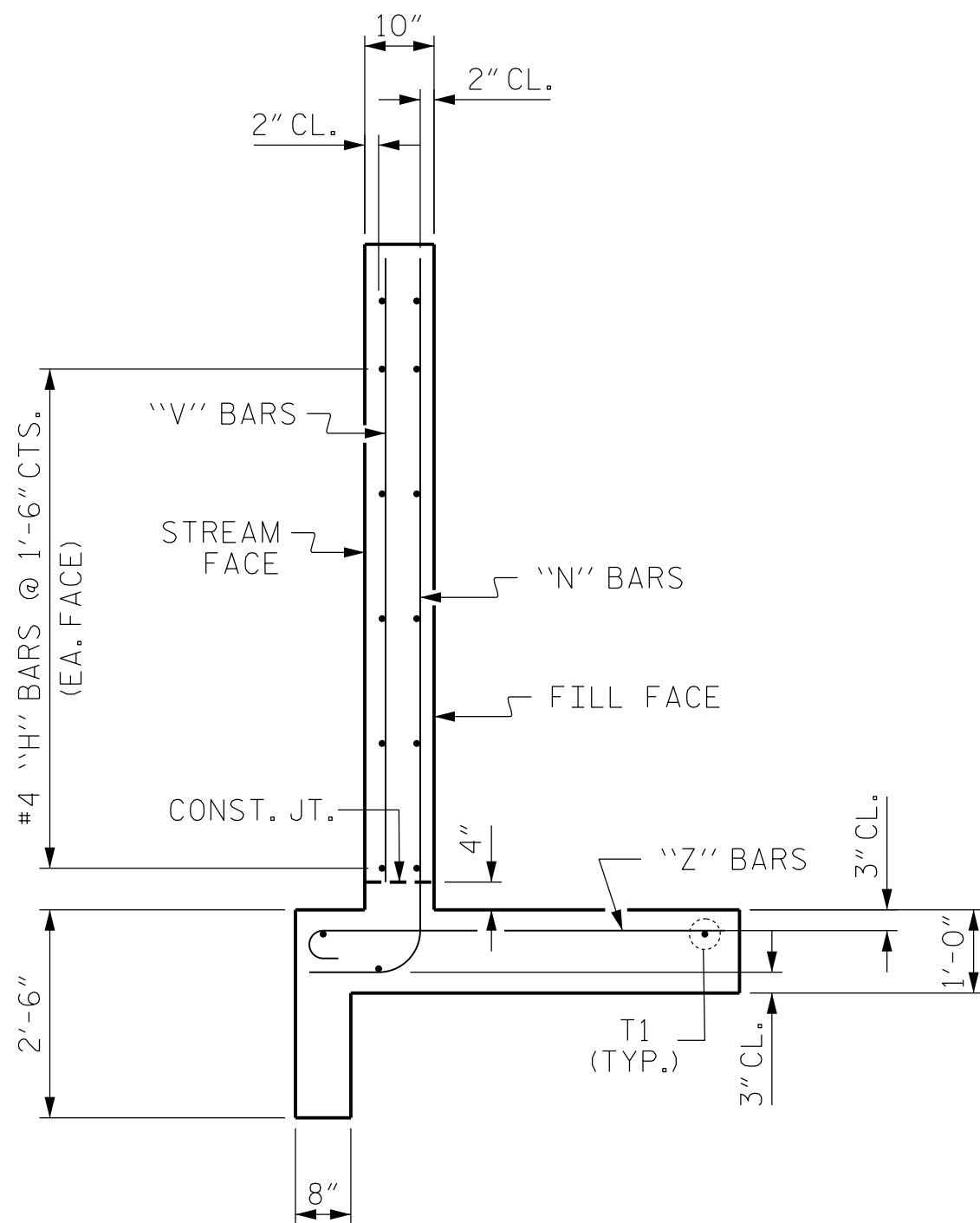
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3	
1			3			TOTAL SHEETS	
2			4			5	



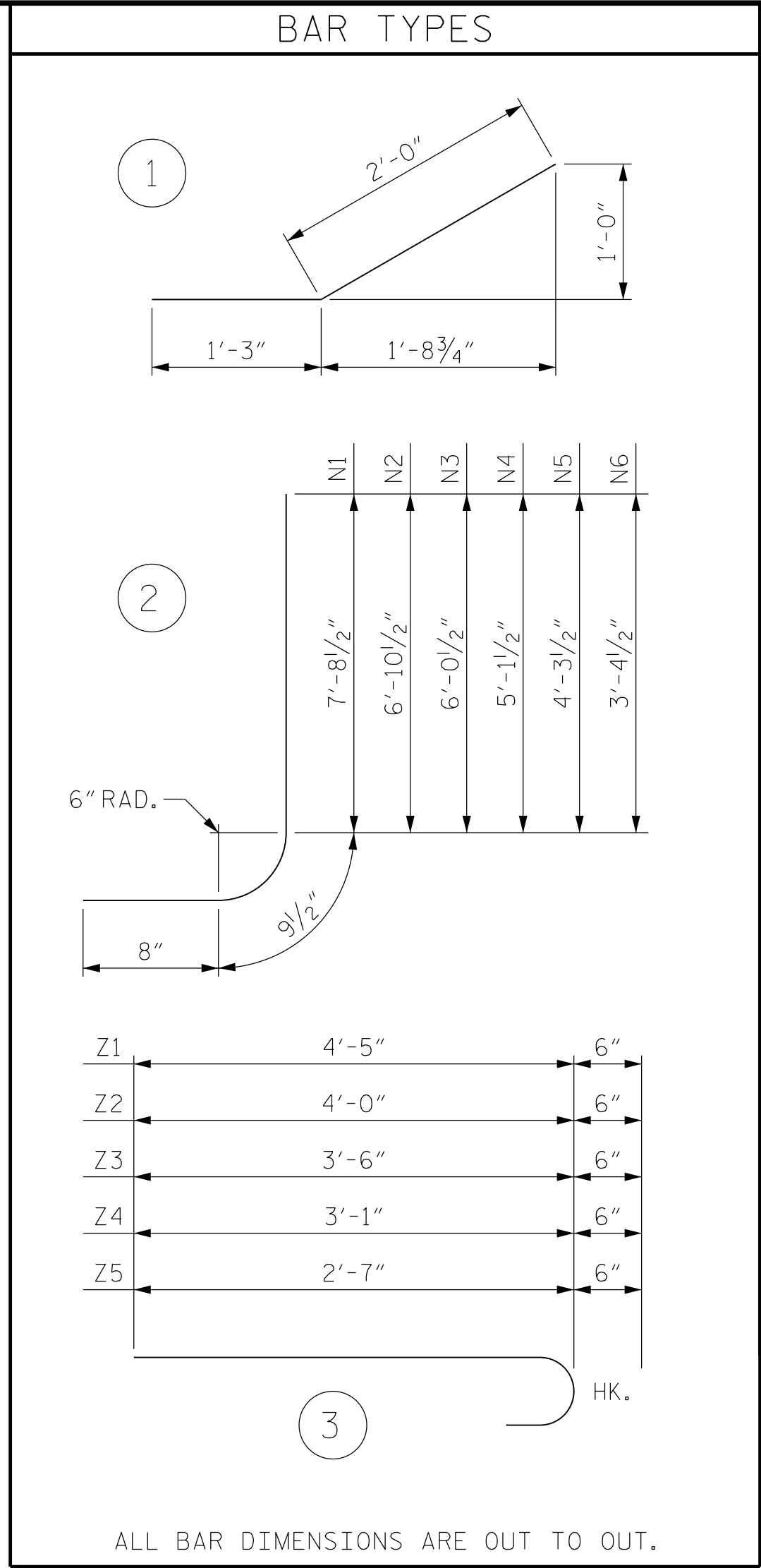
PLAN



ELEVATION




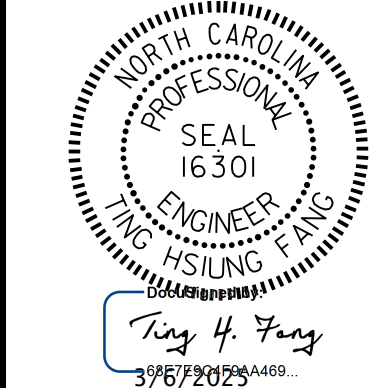
TYPICAL WING SECTION



BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	16	#4	STR	9'-4"	100
H2	8	#4	STR	8'-6"	45
H3	8	#4	STR	5'-1"	27
H4	48	#4	1	3'-3"	104
H5	8	#4	STR	10'-3"	55
N1	8	#5	2	9'-2"	76
N2	8	#5	2	8'-4"	70
N3	8	#4	2	7'-6"	40
N4	8	#4	2	6'-7"	35
N5	8	#4	2	5'-9"	31
N6	8	#4	2	4'-10"	26
S1	12	#6	STR	6'-0"	108
T1	12	#5	STR	11'-3"	141
V1	8	#4	STR	7'-1"	38
V2	8	#4	STR	6'-4"	34
V3	8	#4	STR	5'-5"	29
V4	8	#4	STR	4'-7"	24
V5	8	#4	STR	3'-8"	20
V6	8	#4	STR	2'-10"	15
Z1	16	#4	3	4'-11"	53
Z2	8	#4	3	4'-6"	24
Z3	8	#4	3	4'-0"	21
Z4	8	#4	3	3'-7"	19
Z5	8	#4	3	3'-1"	16
TOTAL REINFORCING STEEL FOR 4 WINGS					1151 LBS
CLASS A CONCRETE					
4 WINGS					17.1 CY
2 HEADWALLS					1.2 CY
2 END CURTAIN WALLS					1.4 CY
TOTAL					19.7 CY

PROJECT NO. HE-0002
WAKE COUNTY
 STATION: 33+83.86 -L-

	CDM SMITH 5400 Glenwood Ave, Suite 400 Raleigh, NC 27612-3228 NC COA No. F-1255		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
	DRAWN BY : JJR CHECKED BY : THF DESIGN ENGINEER : THF	DATE : 1/23 DATE : 1/25 DATE : 1/25	DWG. No.



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD WINGS FOR CONCRETE BOX CULVERT

H = 7'-0" SLOPE = 2:1
 90° SKEW

+

+

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS															
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING <div>⬡</div>	MINIMUM RATING FACTORS (RF)	TONS = W × 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	1.52	--	1.75	1.52	1	BOTTOM SLAB	6.00	5.13	1	EXTERIOR WALL	0.00	
	HL-93 (OPERATING)	N/A		1.97	--	1.35	1.97	1	BOTTOM SLAB	6.00	6.65	1	EXTERIOR WALL	0.00	
	HS-20 (INVENTORY)	36.000	⬡2	2.03	73.08	1.75	2.03	1	BOTTOM SLAB	6.00	5.16	1	EXTERIOR WALL	0.00	
	HS-20 (OPERATING)	36.000		2.63	94.68	1.35	2.63	1	BOTTOM SLAB	6.00	6.69	1	EXTERIOR WALL	0.00	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH		1.76	23.76	1.40	1.76	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		SNGARBS2		1.67	33.40	1.40	1.67	1	BOTTOM SLAB	6.00	5.11	1	EXTERIOR WALL	0.00	
		SNAGRIS2		1.76	38.72	1.40	1.76	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		SNCOTTS3		1.59	43.33	1.40	1.59	1	BOTTOM SLAB	6.00	5.10	1	EXTERIOR WALL	0.00	
		SNAGGRS4		1.98	69.15	1.40	1.98	1	BOTTOM SLAB	6.00	5.13	1	EXTERIOR WALL	0.00	
		SNS5A		1.83	65.06	1.40	1.83	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		SNS6A		1.83	73.11	1.40	1.83	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		SNS7B		1.83	76.86	1.40	1.83	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3		1.76	58.08	1.40	1.76	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		TNT4A		1.83	60.53	1.40	1.83	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		TNT6A		1.83	76.13	1.40	1.83	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		TNT7A		1.83	76.86	1.40	1.83	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		TNT7B		1.83	76.86	1.40	1.83	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		TNAGRIT4		1.76	75.68	1.40	1.76	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		TNAGT5A		1.76	79.20	1.40	1.76	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
		TNAGT5B		1.83	82.35	1.40	1.83	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
EMERGENCY VEHICLE (EV)	EV2	28.750	⬡3	1.45	41.69	1.30	1.45	1	BOTTOM SLAB	6.00	5.12	1	EXTERIOR WALL	0.00	
	EV3	43.000		1.57	67.51	1.30	1.57	1	BOTTOM SLAB	6.00	5.13	1	EXTERIOR WALL	0.00	

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	--

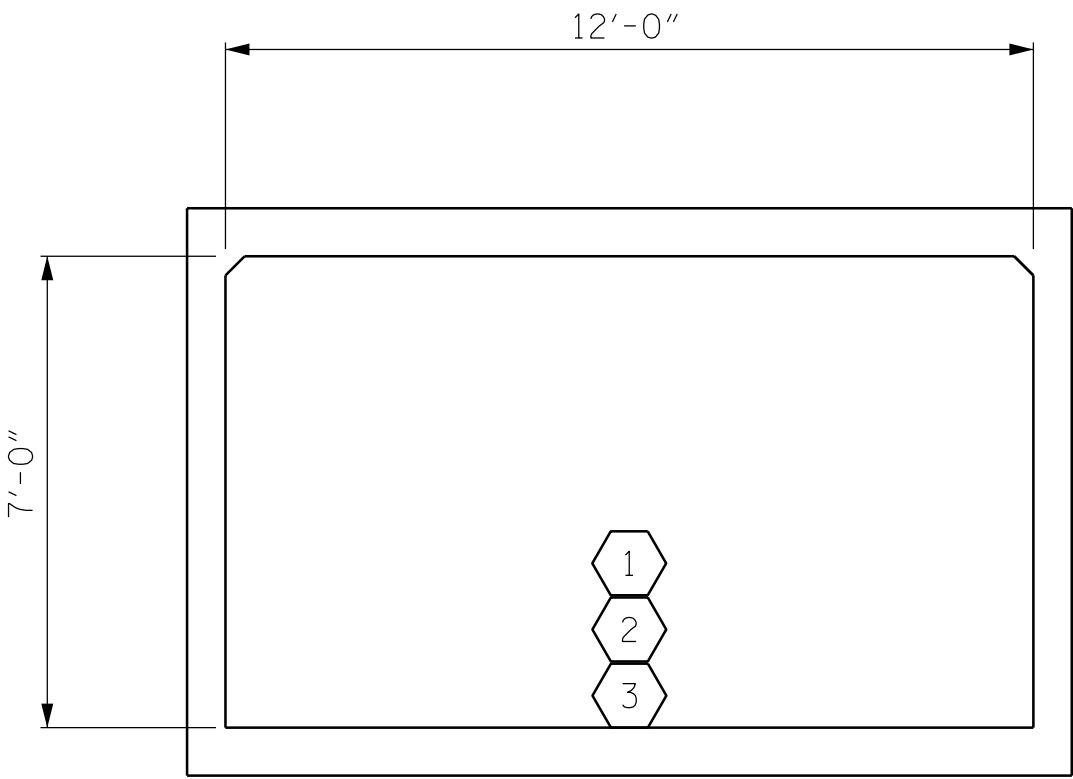
NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

COMMENTS:

-
-
-
-

⬡ CONTROLLING LOAD RATING
⬡1 DESIGN LOAD RATING (HL-93)
⬡2 DESIGN LOAD RATING (HS-20)
⬡3 LEGAL LOAD RATING **
⬡4 EMERGENCY VEHICLE LOAD RATING **
** SEE CHART FOR VEHICLE TYPE



LRFR SUMMARY

(LOOKING DOWNSTREAM)

PROJECT NO. HE-0002
WAKE COUNTY
STATION: 33+83.86 -L-

SHEET 5 OF 5

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

CDM
Smith

CDM SMITH
5400 Glenwood Ave, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : JJR
CHECKED BY : THF
DESIGN ENGINEER : THF

DATE : 1/23
DATE : 1/25
DATE : 1/25

DWG. No.

NORTH CAROLINA
PROFESSIONAL
SEAL
16301
ENGINEER
TUNG HSIUNG FANG

DocuSigned by:
Tung H. Fang
09/06/2025 09:05

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
REINFORCED CONCRETE
BOX CULVERTS
(NON-INTERSTATE TRAFFIC)

REVISIONS

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

SHEET NO.
C-5
TOTAL SHEETS
5

STD. NO. LRFR5

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	AASHTO (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE AASHTO
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 AASHTO
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 ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" 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 ¼" 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 - ¾" 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 ¾" Ø STUDS BASED ON THE RATIO OF 3 - 7⁄8"Ø STUDS FOR 4 - ¾" 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" 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.