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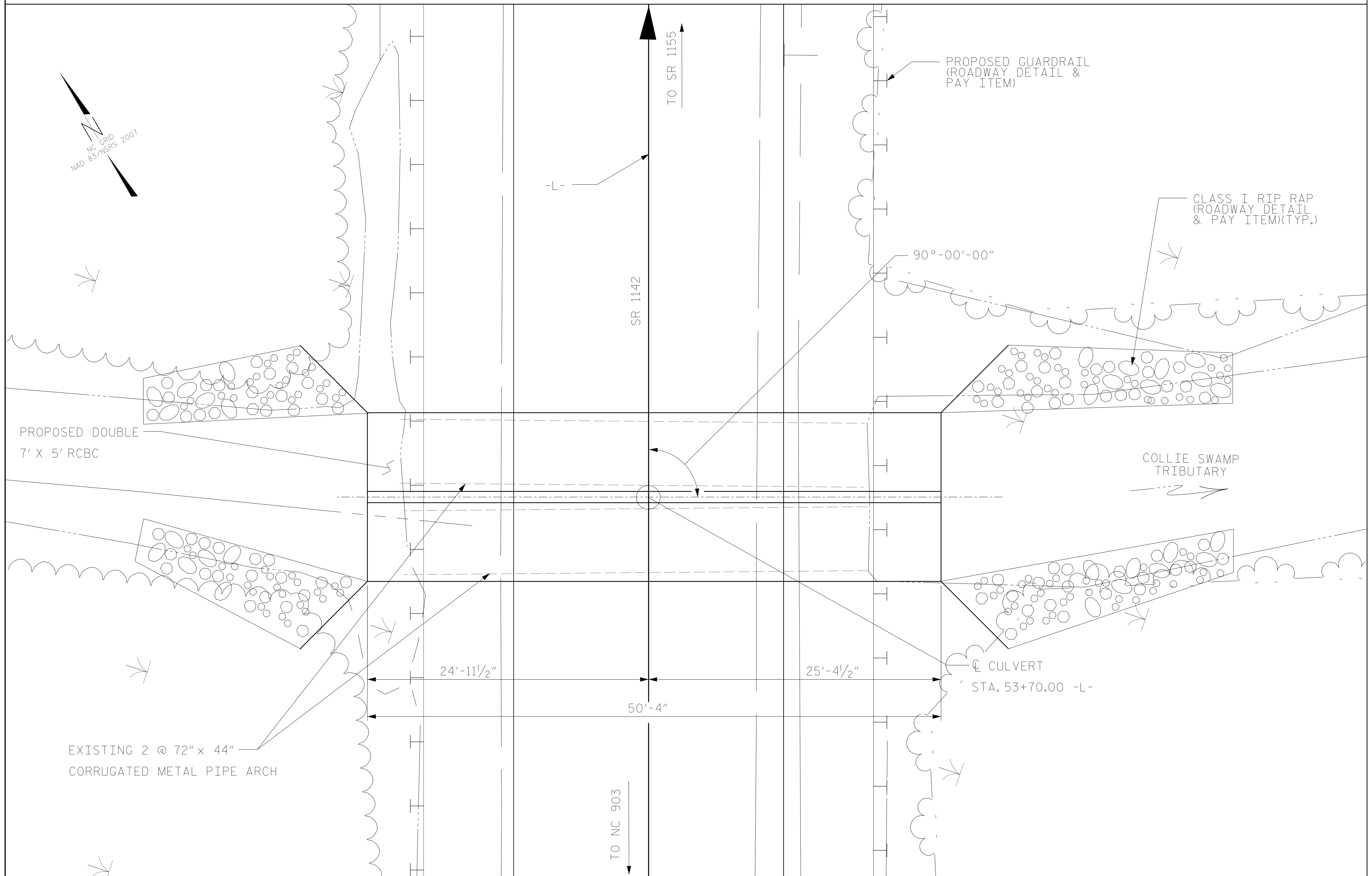
BM #12: RR SPIKE IN POWER POLE -L- STA. 64+33.36 105.64′ RT. ELEV. 32.04, N=740635 E=2528869



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

NOTES

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

DESIGN FILL TO BOTTOM OF TOP SLAB 2.02′ (MIN.) AND 2.84′ (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 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.

STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

FOR CULVERT DIVERSIONS 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 LENGHT OF 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.

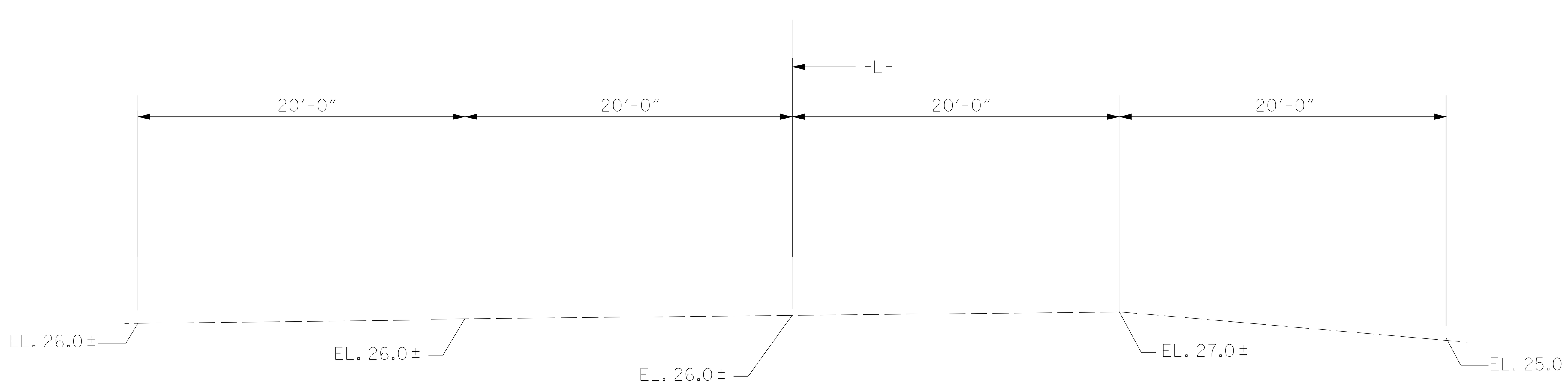
AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES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

THE EXISTING STRUCTURE CONSISTS OF 2 @ 72″ X 44″ CORRUGATED METAL PIPE ARCH. THE EXISTING STRUCTURE SHALL BE REMOVED.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

TOTAL STRUCTURE QUANTITIES

REMOVAL OF EXISTING STRUCTURE	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	71 TONS
CLASS A CONCRETE	
BARREL @ 1.539 CY/FT	77.5 C.Y.
WING ETC.	20.4 C.Y.
TOTAL	97.9 C.Y.
REINFORCING STEEL	
BARREL	10110 LBS.
WINGS ETC.	1200 LBS.
TOTAL	11310 LBS.



PROFILE ALONG ℄ CULVERT

ROADWAY DATA

GRADE POINT ELEV. @ STA 53+70.00 -L-	= 32.83
BED ELEV. @ STA 53+70.00 -L-	= 24.99
ROADWAY SLOPES	= 3:1

HYDRAULIC DATA

DESIGN DISCHARGE	= 320 CFS
FREQUENCY OF DESIGN FLOOD	= 10 YEARS
DESIGN HIGH WATER ELEVATION	= 32.20
DRAINAGE AREA	= 2.7 SQ. MI.
BASE DISCHARGE (Q100)	= 690 CFS
BASE HIGH WATER ELEVATION	= 32.90

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 320+ CFS
FREQUENCY OF OVERTOPPING FLOOD	= 10± YEAR
OVERTOPPING FLOOD ELEVATION	= 32.2 ✳

OVERTOPPING OCCURS AT
✳ PROPOSED SAG AT SAG -L- STA. 51+03 CENTERLINE

PROJECT NO. R-4705

MARTIN COUNTY

STATION: 53+70.00 -L-

SHEET 1 OF 5

ENGINEER OF RECORD 4/30/2019

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

WETHERILL ENGINEERING
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Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD
DOUBLE 7 FT. X 5 FT.
CONCRETE BOX CULVERT
90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C1
1			3			TOTAL SHEETS
2			4			5

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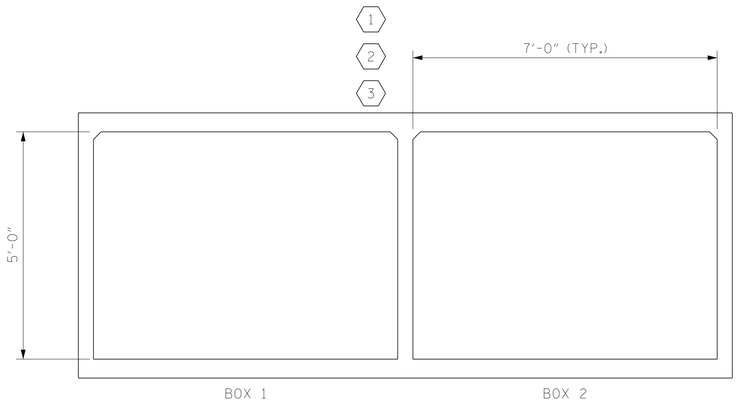
LOAD AND RESISTANCE FACTOR RATING (LRFR)
SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS

LEVEL		VEHICLE	WEIGHT (W) (TONS)	⟨#⟩ CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W × RF	STRENGTH I LIMIT STATE									COMMENT NUMBER
								MOMENT				SHEAR				
							LIVE-LOAD FACTORS (γ_{LL})	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⟩	1.05	--	1.75	1.35	1	TOP SLAB	3.40	1.05	1	TOP SLAB	6.88	
		HL-93 (OPERATING)	N/A		1.36	--	1.35	1.75	1	TOP SLAB	3.40	1.36	1	TOP SLAB	6.88	
		HS-20 (INVENTORY)	36.000	⟨2⟩	1.19	42.84	1.75	1.41	1	TOP SLAB	3.40	1.19	1	TOP SLAB	6.88	
		HS-20 (OPERATING)	36.000		1.54	55.44	1.35	1.83	1	TOP SLAB	3.40	1.54	1	TOP SLAB	6.88	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		2.21	29.84	1.40	2.58	1	TOP SLAB	3.40	2.21	1	TOP SLAB	6.88	
		SNGARBS2	20.000		2.07	41.40	1.40	2.41	1	TOP SLAB	3.40	2.07	1	TOP SLAB	6.88	
		SNAGRIS2	22.000		2.21	48.62	1.40	2.57	1	TOP SLAB	3.40	2.21	1	TOP SLAB	6.88	
		SNCOTTS3	27.250	⟨3⟩	1.33	36.24	1.40	2.08	1	TOP SLAB	3.40	1.33	1	TOP SLAB	6.88	
		SNAGGRS4	34.925		1.69	59.02	1.40	2.30	1	BOTTOM SLAB	7.67	1.69	1	TOP SLAB	6.88	
		SNS5A	35.550		1.55	55.10	1.40	2.16	1	BOTTOM SLAB	7.67	1.55	1	TOP SLAB	6.88	
		SNS6A	39.950		1.54	61.52	1.40	2.09	1	BOTTOM SLAB	7.67	1.54	1	TOP SLAB	6.88	
		SNS7B	42.000		1.53	64.26	1.40	2.09	1	BOTTOM SLAB	7.67	1.53	1	TOP SLAB	6.88	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.14	70.62	1.40	2.57	1	TOP SLAB	3.40	2.14	1	TOP SLAB	6.88	
		TNT4A	33.075		1.58	52.26	1.40	2.24	1	BOTTOM SLAB	7.67	1.58	1	TOP SLAB	6.88	
		TNT6A	41.600		1.55	64.48	1.40	2.30	1	BOTTOM SLAB	7.67	1.55	1	TOP SLAB	6.88	
		TNT7A	42.000		1.57	65.94	1.40	2.27	1	BOTTOM SLAB	7.67	1.57	1	TOP SLAB	6.88	
		TNT7B	42.000		1.56	65.52	1.40	2.10	1	BOTTOM SLAB	7.67	1.56	1	TOP SLAB	6.88	
		TNAGRIT4	43.000		1.58	67.94	1.40	1.92	1	BOTTOM SLAB	7.67	1.58	1	TOP SLAB	6.88	
		TNAGT5A	45.000		1.58	71.10	1.40	1.92	1	BOTTOM SLAB	7.67	1.58	1	TOP SLAB	6.88	
		TNAGT5B	45.000		1.58	71.10	1.40	1.95	1	BOTTOM SLAB	7.67	1.58	1	TOP SLAB	6.88	



LRFR SUMMARY

(LOOKING DOWNSTREAM)

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:

1.

2.

3.

4.

⟨#⟩ CONTROLLING LOAD RATING

⟨1⟩ DESIGN LOAD RATING (HL-93)

⟨2⟩ DESIGN LOAD RATING (HS-20)

⟨3⟩ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

PROJECT NO. R-4705

MARTIN COUNTY

STATION: 53+70.00 -L-

SHEET 2 OF 5

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CHECKED BY : J.A. DILWORTH DATE : 11/18

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ENGINEER OF RECORD
4/30/2019

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH

Digitally signed by John Arthur Dilworth

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LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			5

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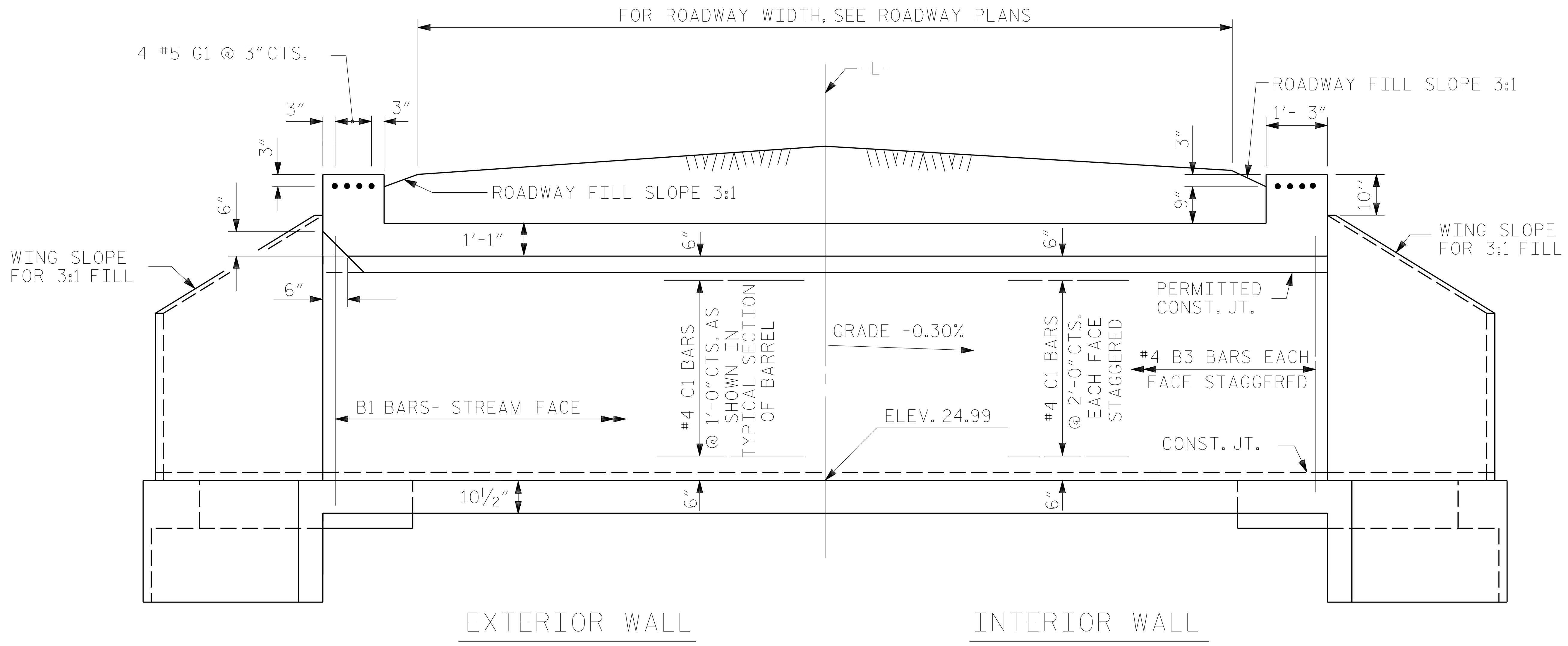
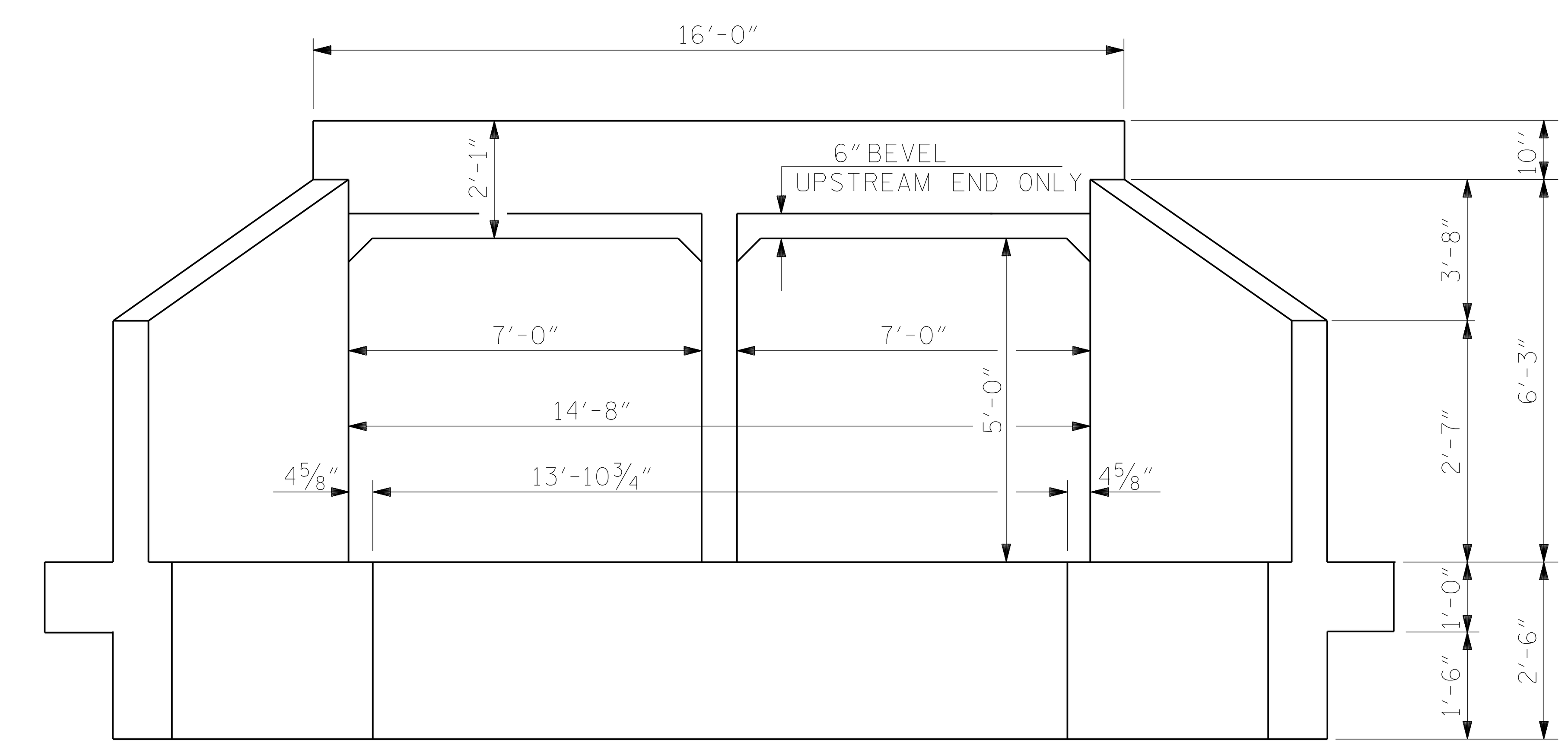
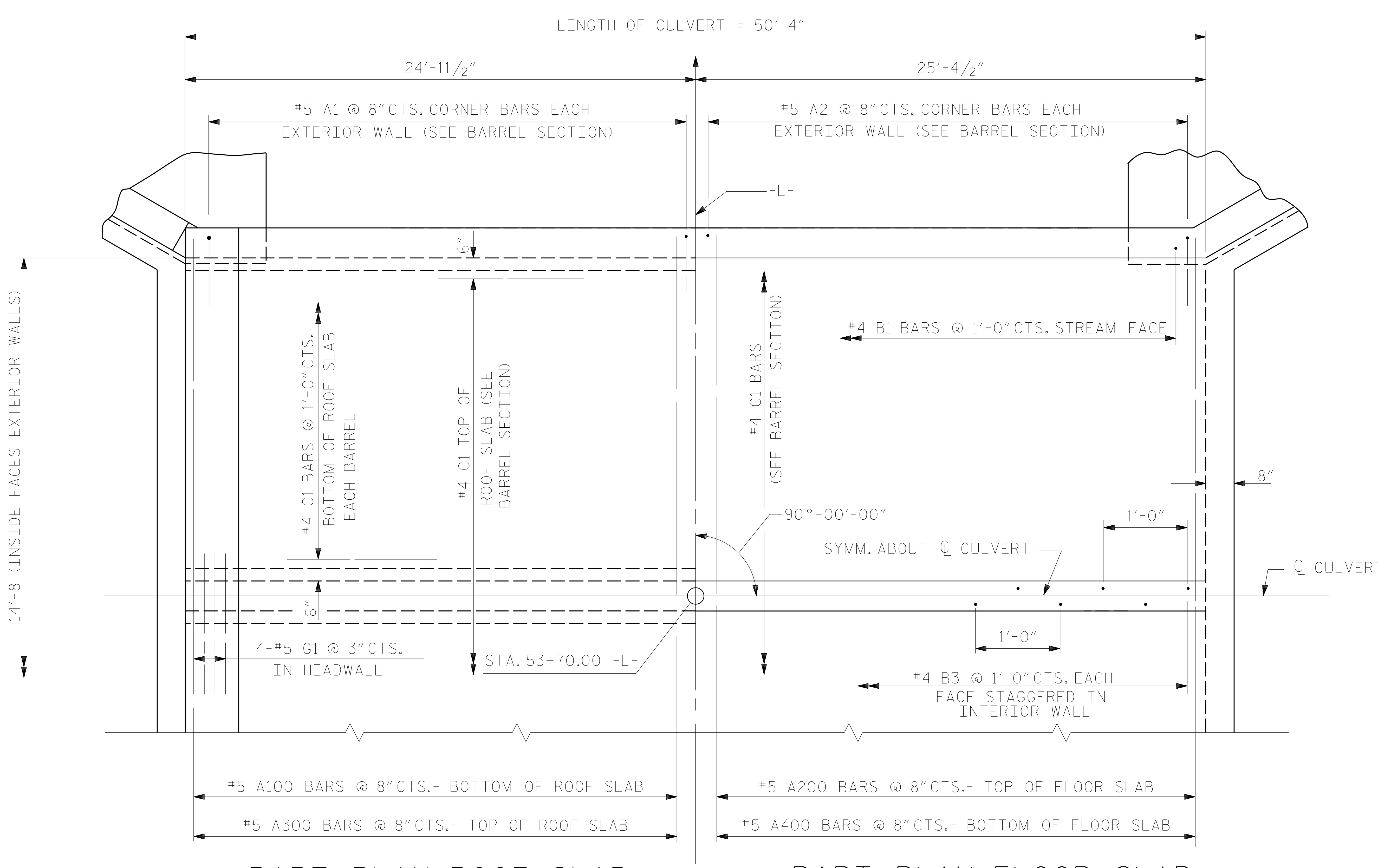


CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION



PART PLAN-ROOF SLAB

PART PLAN-FLOOR SLAB

PROJECT NO. R-4705

MARTIN COUNTY

STATION: 53+70.00 -L-

SHEET 3 OF 5

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD DOUBLE 7 FT. X 5 FT. CONCRETE BOX CULVERT 90° SKEW

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2			4			

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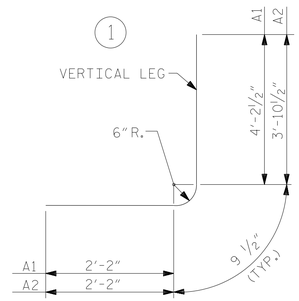
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

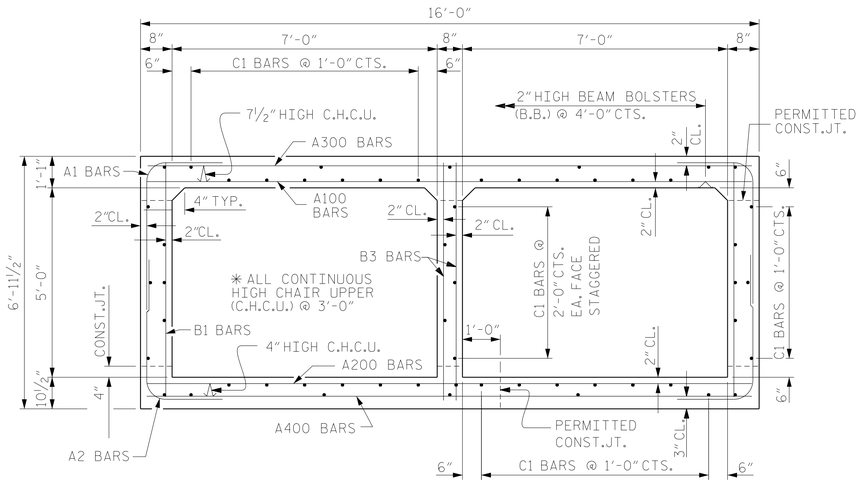
BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	152	#5	1	7'-2"	1136
A2	152	#5	1	6'-10"	1083
A100	76	#5	STR.	15'-8"	1242
A200	76	#5	STR.	15'-8"	1242
A300	76	#5	STR.	15'-8"	1242
A400	76	#5	STR.	15'-8"	1242
B1	102	#4	STR.	6'-6"	443
B3	101	#4	STR.	6'-6"	439
C1	110	#4	STR.	26'-0"	1910
G1	8	#5	STR.	15'-8"	131

REINFORCING STEEL 10110 LBS

SPLICE LENGTHS CHART

BAR	SIZE	SPLICE LENGTH
A200	5	2'-2"
A400	5	2'-2"
B1	4	1'-9"
C1	4	1'-11"



RIGHT ANGLE SECTION OF BARREL

THERE ARE 55 "C" BARS IN SECTION OF BARREL.

PROJECT NO. R-4705

MARTIN COUNTY

STATION: 53+70.00 -L-

SHEET 4 OF 5

ENGINEER OF RECORD
4/30/2019

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL REINFORCEMENT DOUBLE 7 FT. X 5 FT. CONCRETE BOX CULVERT 90° SKEW

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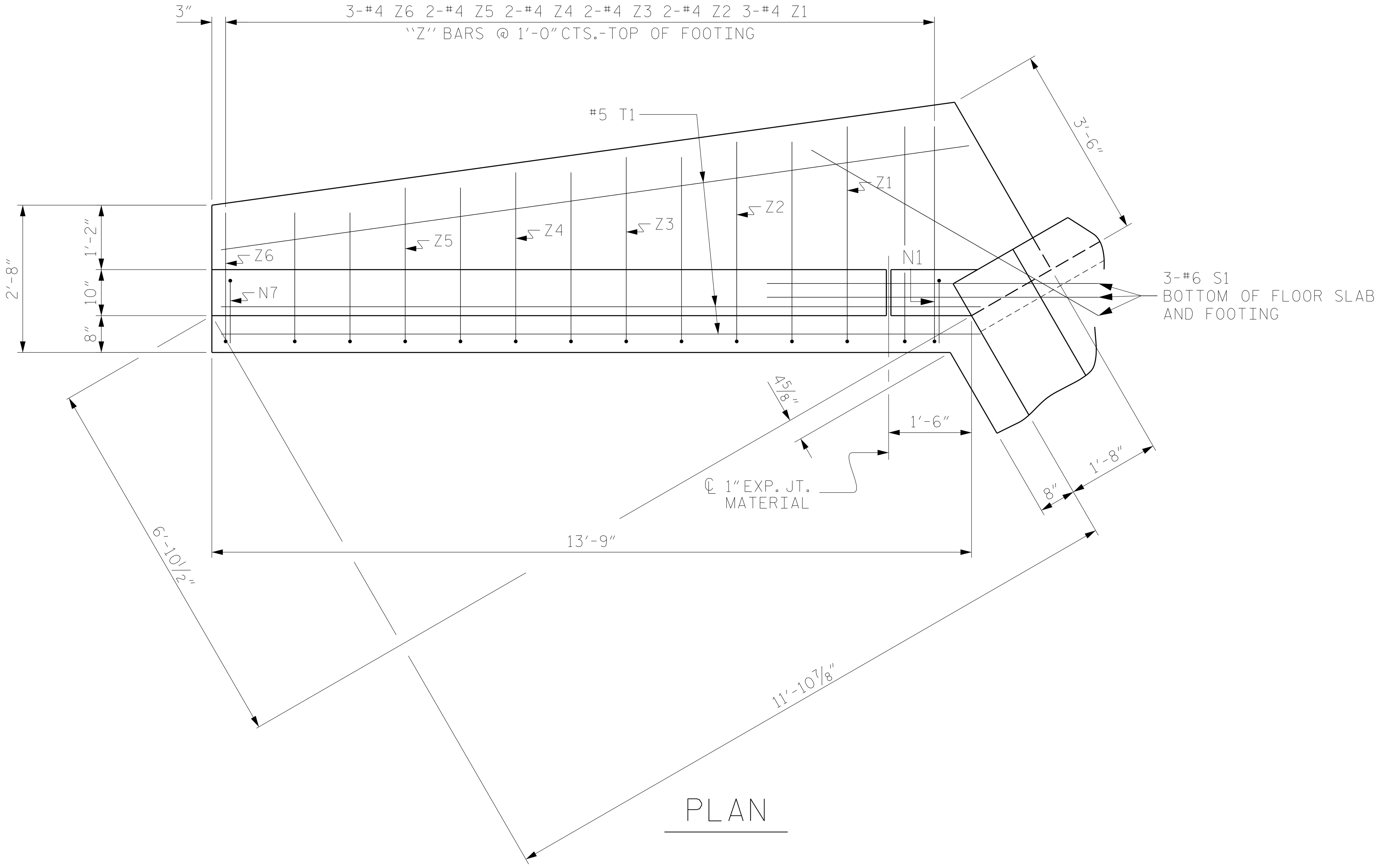
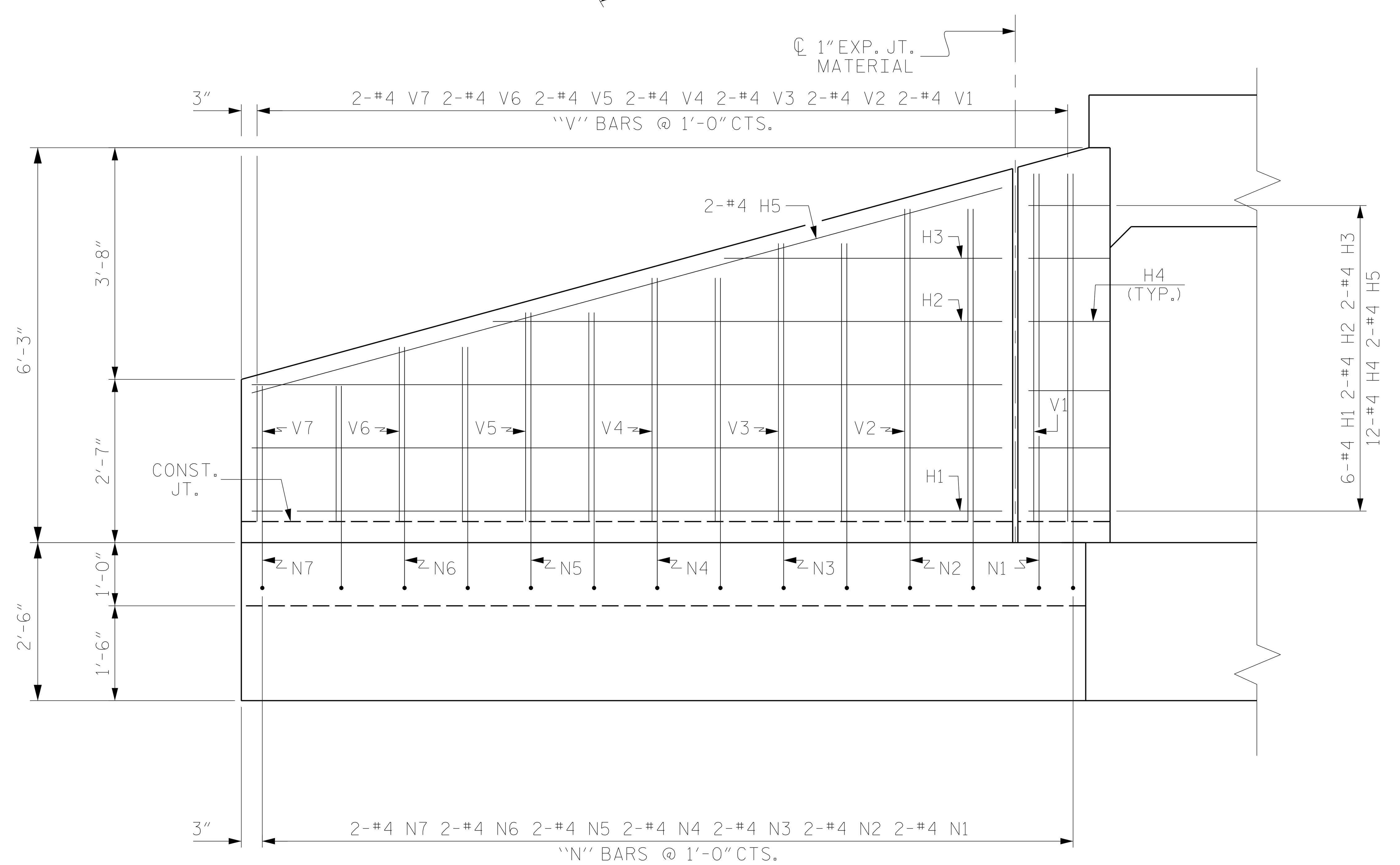
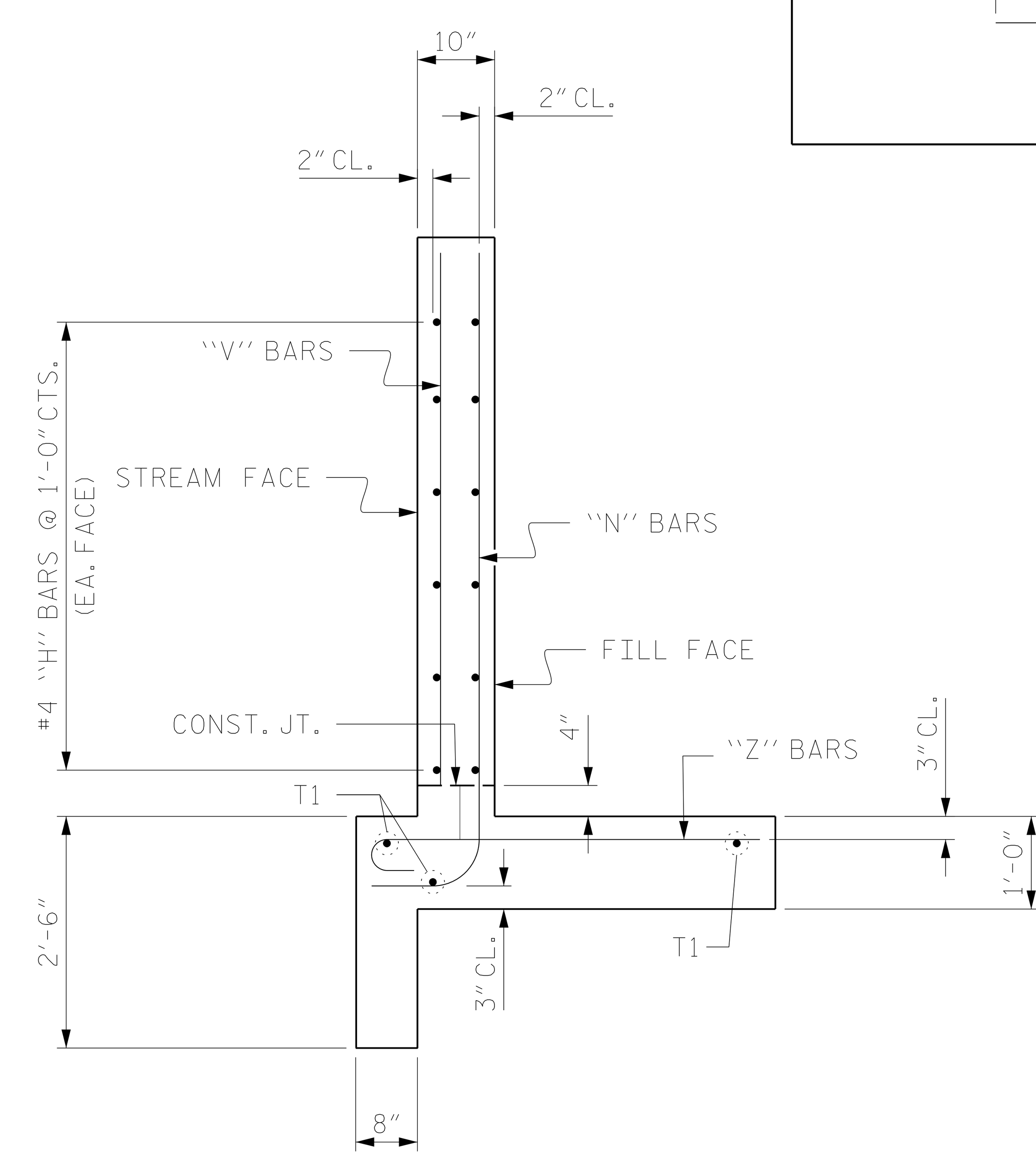


PLAN



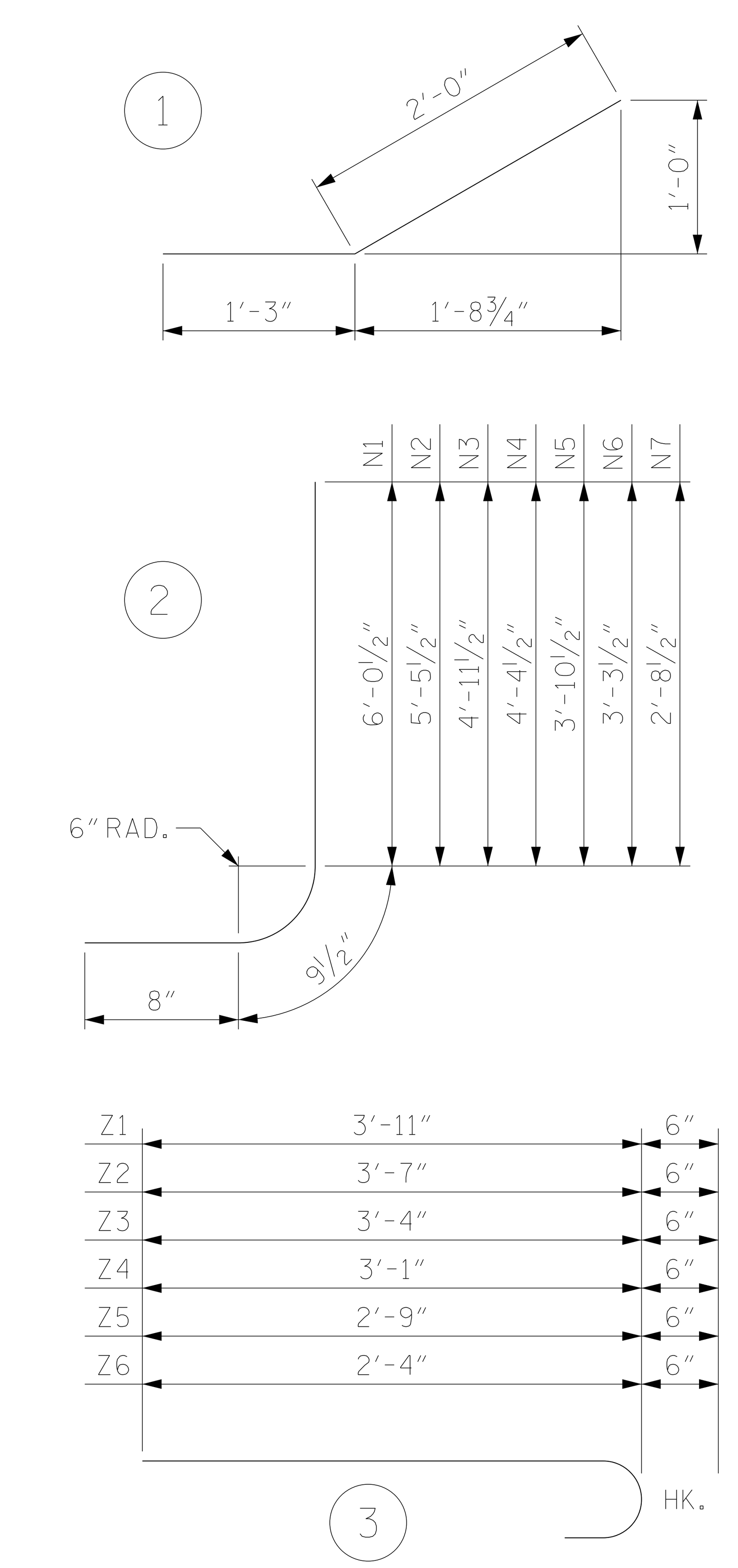
ELEVATION



TYPICAL WING SECTION

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	24	#4	STR	11'-10"	190
H2	8	#4	STR	8'-0"	43
H3	8	#4	STR	4'-4"	23
H4	48	#4	1	3'-3"	104
H5	8	#4	STR	12'-3"	65
N1	8	#4	2	7'-6"	40
N2	8	#4	2	6'-11"	37
N3	8	#4	2	6'-5"	34
N4	8	#4	2	5'-10"	31
N5	8	#4	2	5'-4"	29
N6	8	#4	2	4'-9"	25
N7	8	#4	2	4'-2"	22
S1	12	#6	STR	6'-0"	108
T1	12	#5	STR	13'-9"	172
V1	8	#4	STR	5'-6"	29
V2	8	#4	STR	4'-11"	26
V3	8	#4	STR	4'-4"	23
V4	8	#4	STR	3'-10"	20
V5	8	#4	STR	3'-3"	17
V6	8	#4	STR	2'-9"	15
V7	8	#4	STR	2'-1"	11
Z1	12	#4	3	4'-5"	35
Z2	8	#4	3	4'-1"	22
Z3	8	#4	3	3'-10"	20
Z4	8	#4	3	3'-7"	19
Z5	8	#4	3	3'-3"	17
Z6	12	#4	3	2'-10"	23

REINFORCING STEEL
FOR 4 WINGS 1200 LBS

CLASS A CONCRETE
4 WINGS 17.1 CY
2 HEADWALLS 1.5 CY
END CURTAIN WALLS 1.8 CY
TOTAL 20.4 CY

PROJECT NO. R-4705
MARTIN COUNTY
STATION: 53+70.00 -L-

SHEET 5 OF 5

ENGINEER OF RECORD
4/30/2019

DocuSigned by:
John Arthur Dilworth

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

WINGS FOR CONCRETE BOX CULVERT

H = 5'-0" SLOPE = 3:1
90° SKEW

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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 2018 "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 ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞" 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 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

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REV. 8-16-99 RWW (/) LES REV. 5-1-06 TLA (/) GM REV. 12-17 MAA (/) THC

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