

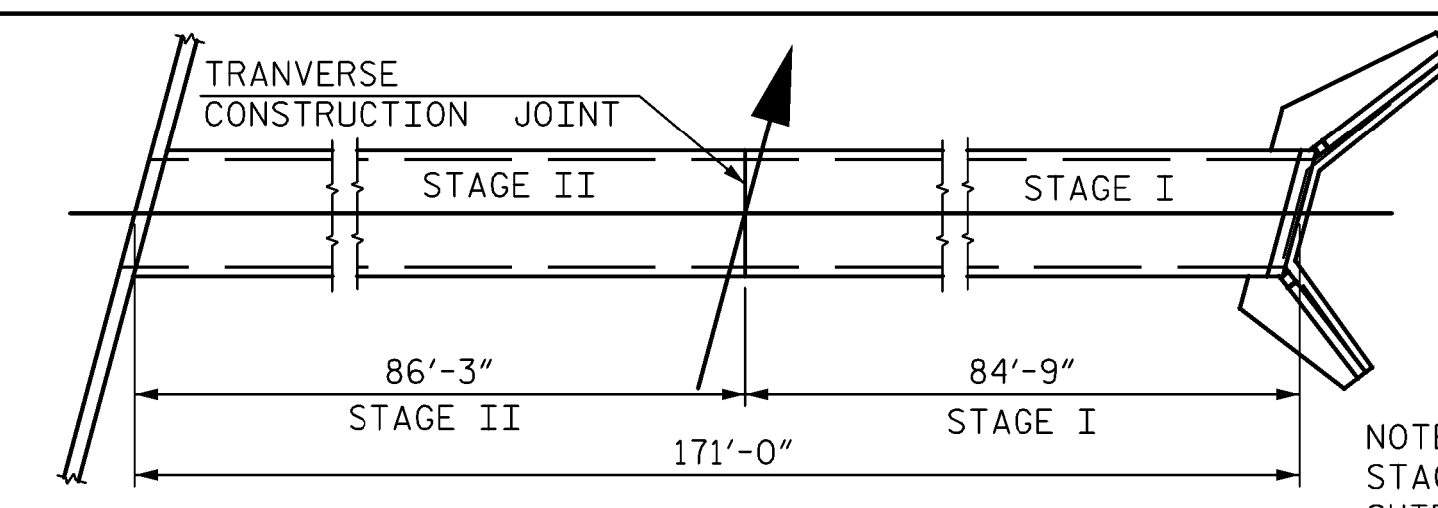
LOCATION SKETCH

GRADE DATA
 GRADE POINT ELEV. @ STA. 53+99.00 -L- = 769.33 FT.
 CULVERT BED ELEVATION @ STA. 53+99.00 -L- = 740.33 FT.
 ROADWAY SLOPES VARIES (~1.64:1) LEFT SIDE
 2:1 RIGHT SIDE

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

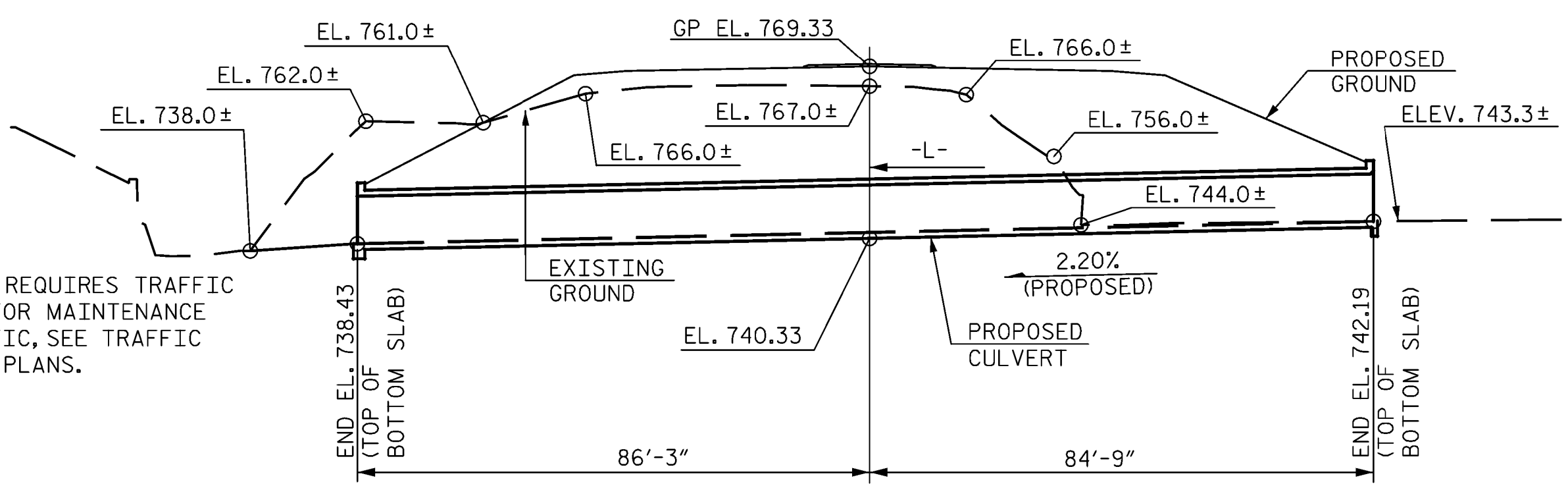
NOTES

- ASSUMED LIVE LOAD -----HL-93
- DESIGN FILL-----21.5'
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE STANDARD NOTE SHEET.
- 3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- FOR CONCRETE POUR ORDER/STAGING NOTES, SEE SHEET 6 OF 7.
- 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.
- THIS BARREL STANDARD TO BE USED ONLY ON CULVERT 75°SKEW AND TO BE USED WITH STANDARD WING SHEET WITH THE SAME SKEW AND VERTICAL CLEARANCE.
- 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 FEET. 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 48"Ø PIPE THROUGH THE SIDEWALL OF THE CULVERT SHALL BE LOCATED BY THE ENGINEER. THE REINFORCING STEEL SHALL BE FIELD BENT AS NECESSARY TO CLEAR PIPE.
- AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING 8'x7' REINFORCED CONCRETE BOX CULVERT, JUNCTION BOX & 96" CMP LOCATED APPROXIMATELY 15' UPSTATION FROM THE PROPOSED CULVERT SHALL BE REMOVED ONCE NO LONGER NEEDED. THE 100' LONG CULVERT IS NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE CULVERT DETERIORATE DURING CONSTRUCTION OF THE PROPOSED CULVERT, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- TRAFFIC ON US64 SHALL BE MAINTAINED. IN ORDER TO MAINTAIN TRAFFIC, THE CULVERT SHALL BE CONSTRUCTED IN SECTIONS AS DIRECTED BY THE ENGINEER AND TRAFFIC CONTROL PLANS.
- 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 SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT 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/RETAINING WALL COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- NO PRECAST REINFORCED CONCRETE BOX CULVERT OPTION WILL BE ALLOWED.
- DOWELS SHALL BE USED TO CONNECT THE STAGE II CULVERT TO STAGE I CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.
- FOR ADDITIONAL NOTES AND FOUNDATION NOTES, SEE SHEET 6 OF 7.
- FOR HEADWALL ELEVATIONS AT OUTLET END, SEE RETAINING WALL RW-1 AND RW-2 DRAWINGS.

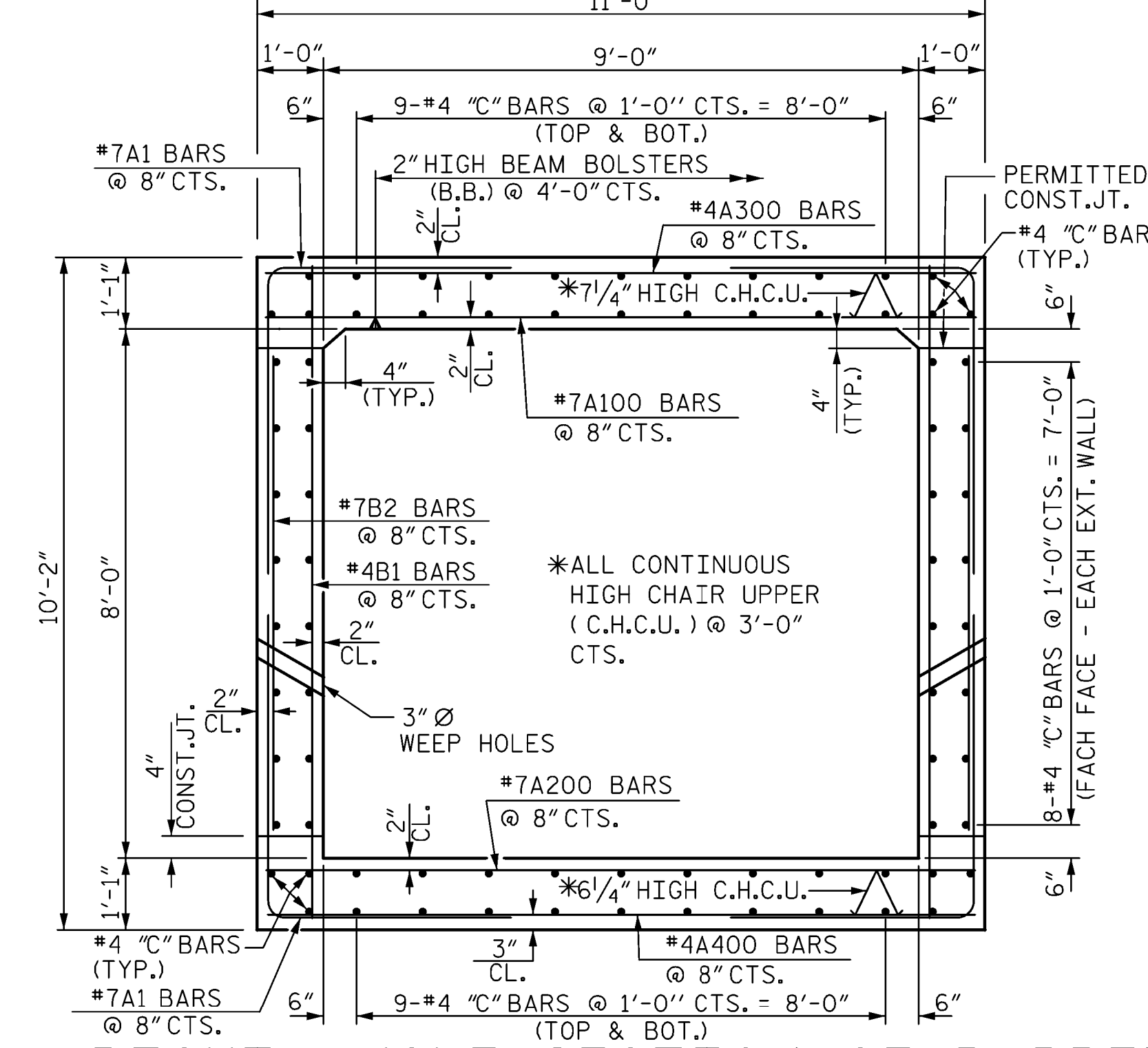


CONSTRUCTION SEQUENCE

NOTE: STAGING REQUIRES TRAFFIC SHIFTS. FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.



PROFILE ALONG CULVERT



RIGHT ANGLE SECTION OF BARREL

THERE ARE 80 "C" BAR RUNS IN SECTION OF BARREL

TOTAL STRUCTURE QUANTITIES	
REMOVAL OF EXISTING STRUCTURE AT STATION 53+99.00 -L-	LUMP SUM
CULVERT EXCAVATION AT STATION 53+99.00 -L-	LUMP SUM
FOUNDATION CONDITIONING MATERIAL, BOX CULVERT	
STAGE I	89.6 TONS
STAGE II	91.2 TONS
TOTAL:	180.8 TONS
CLASS A CONCRETE BARREL @ 1.48 CY/FT	
STAGE I BARREL	125.4 C.Y.
STAGE II BARREL	126.9 C.Y.
WING ETC.	16.5 C.Y.
STAGE I	13.1 C.Y.
STAGE II	3.4 C.Y.
TOTAL	268.8 C.Y.
REINFORCING STEEL	
BARREL	53,269 LBS.
STAGE I BARREL	26,235 LBS.
STAGE II BARREL	27,034 LBS.
WINGS ETC. (STAGE I)	774 LBS.
TOTAL	54,043 LBS.

HYDRAULIC DATA

DESIGN DISCHARGE	550 CFS
FREQUENCY OF DESIGN FLOOD	50 YR.
DESIGN HIGH WATER ELEV.	750.4 FT.
DRAINAGE AREA	0.54 SQ. MI.
BASE DISCHARGE (Q100)	600 CFS
BASE HIGH WATER ELEV.	752.1 FT.

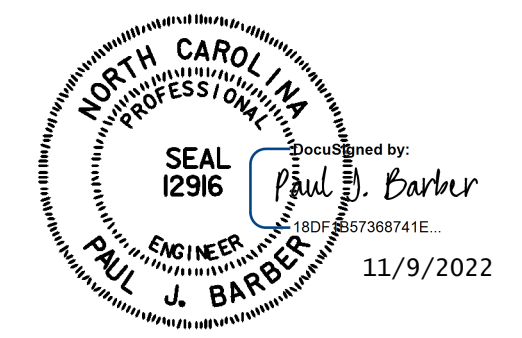
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	> 650+ CFS
FREQUENCY OF OVERTOPPING FLOOD	> 500+ YR.
OVERTOPPING FLOOD ELEV.	769.71 FT.
OVERTOPS AT -L- STA. 54+18.78	
CROWN OF ROADWAY	

SAMPLE BAR REPLACEMENT

SIZE	LENGTH
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

NOTE: SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND fy = 60ksi.



PROJECT NO. U-5813
 RANDOLPH COUNTY
 STATION: 53+99.00 -L-

SHEET 1 OF 7
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 LOCATION SKETCH/BARREL
 SECT. FOR SINGLE 9 FT. X
 8 FT. CONCRETE BOX
 US64 CULVERT OVER UT TO
 CEDAR FORK CREEK BETWEEN
 SR 3255 AND SR 1426

HNTB HNTB NORTH CAROLINA, P.C.
 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DESIGNED BY: M. WRIGHT DATE: 9/22
 CHECKED BY: P. BARBER DATE: 9/22
 DESIGN ENGINEER OF RECORD: P. BARBER DATE: 9/22

DWG. NO. 1

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

TOTAL SHEETS: 7

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	--

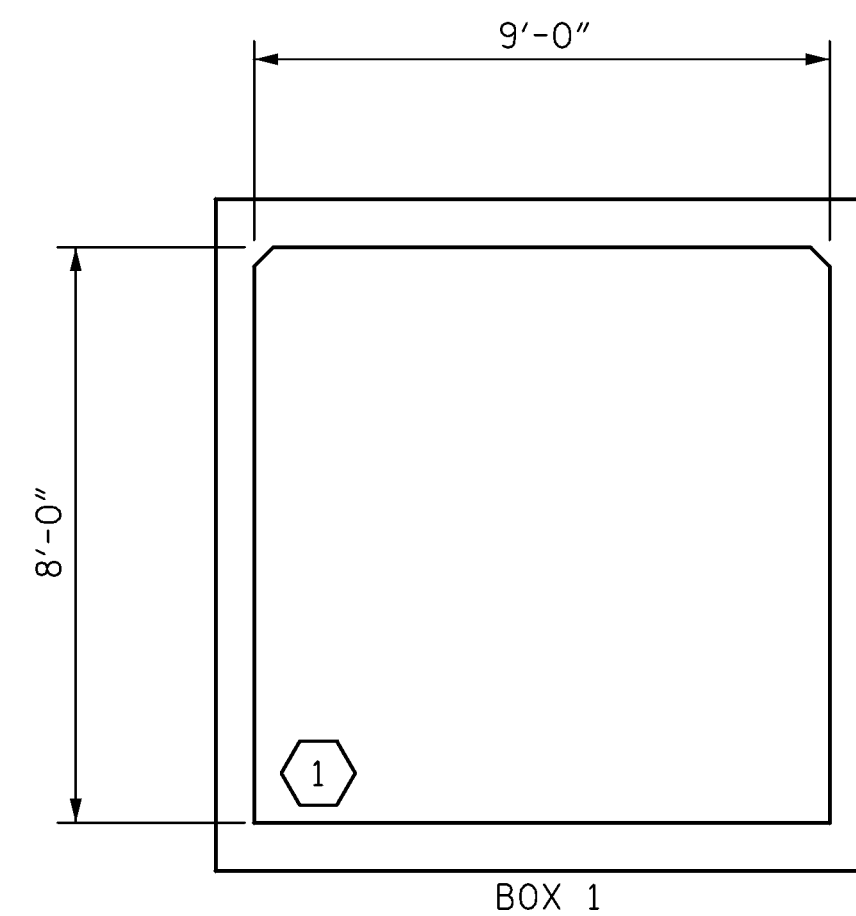
LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS										
	CONTROLLING LOAD RATING	MINIMUM RATING FACTOR (RF)	STRENGTH I LIMIT STATE							
			MOMENT				SHEAR			
			RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)
PERMANENT LOAD RATING	1	1.065	1.357	1	BOTTOM SLAB	4.50	1.065	1	BOTTOM SLAB	1.00

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.



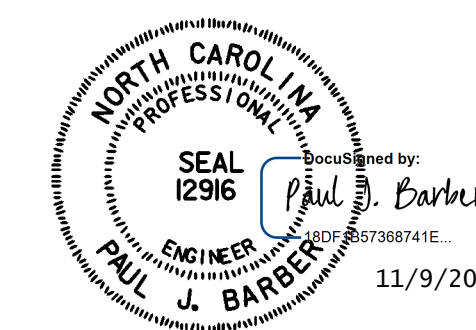
LRFR SUMMARY
(LOOKING DOWNSTREAM)

PROJECT NO. U-5813
RANDOLPH COUNTY
STATION: 53+99.00 -L-

SHEET 2 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
REINFORCED CONCRETE
BOX CULVERTS
(DEEP FILLS)



11/9/2022

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343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY: M. WRIGHT DATE: 1/22
CHECKED BY: P. BARBER DATE: 1/22
DESIGN ENGINEER OF RECORD: P. BARBER DATE: 9/22
DWG. NO. 2

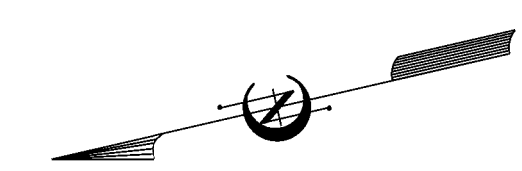
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2			4			7

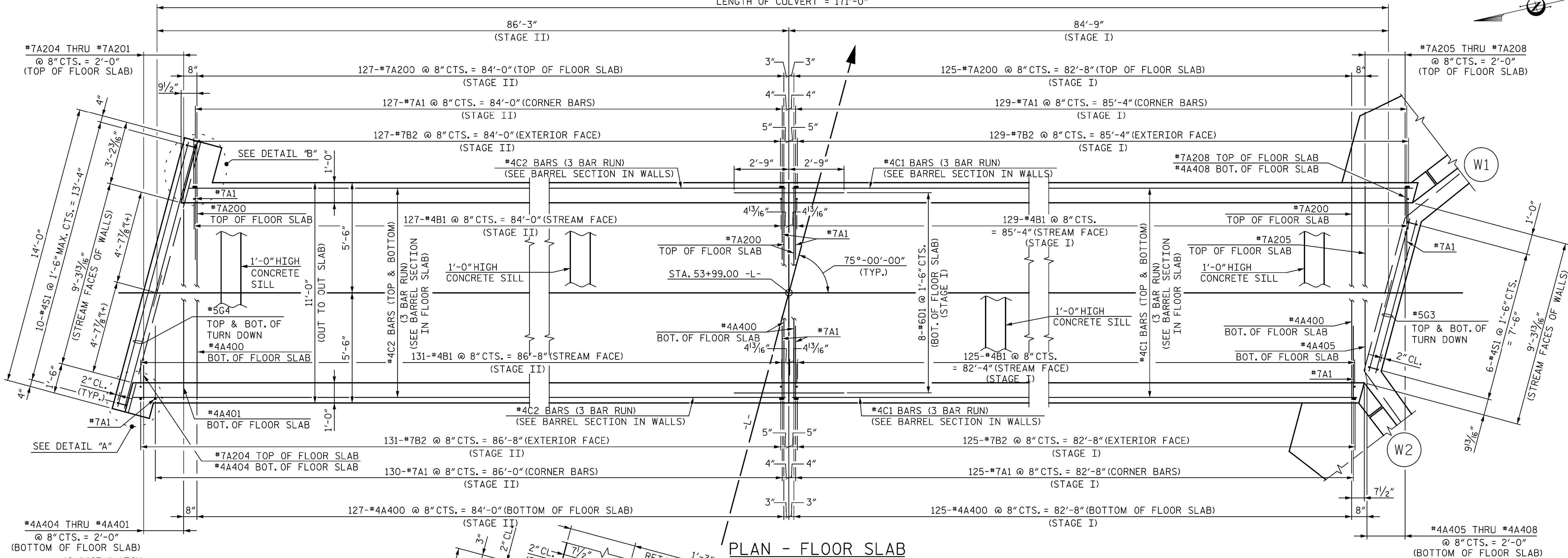
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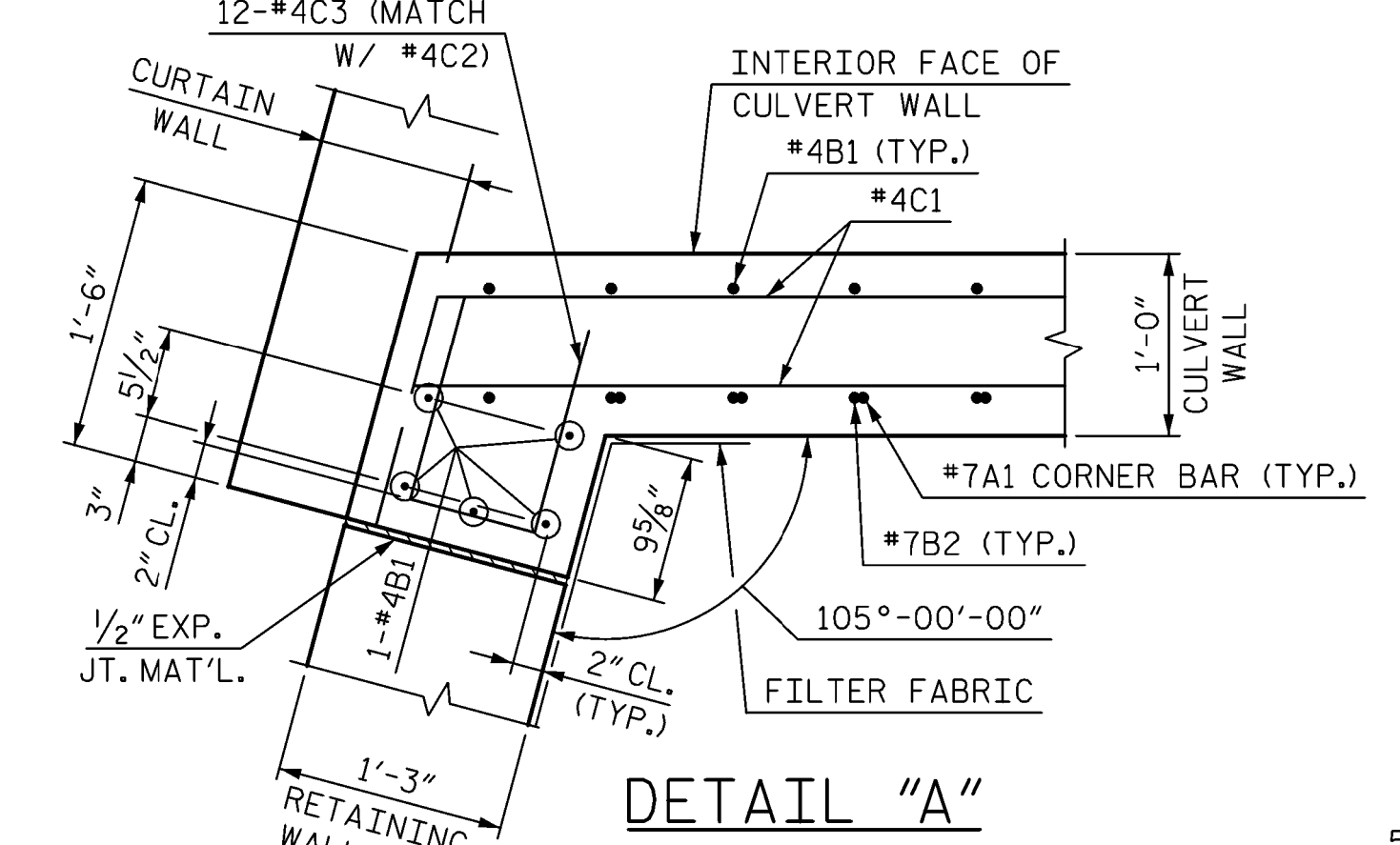
ASSEMBLED BY: M. WRIGHT DATE: 1/22
CHECKED BY: P. BARBER DATE: 1/22
DRAWN BY: BNB 6/19
CHECKED BY: THC 6/19



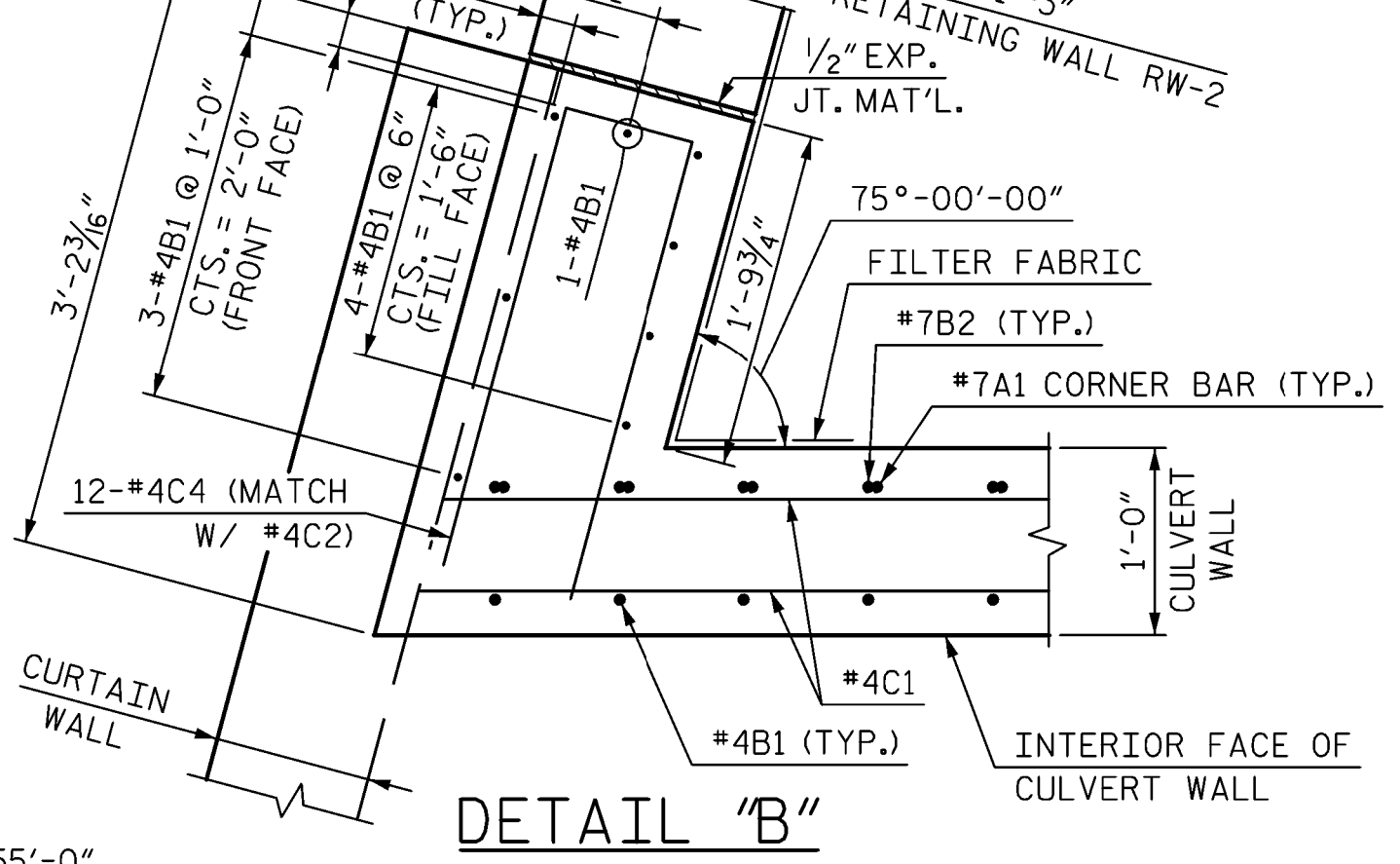
LENGTH OF CULVERT = 171'-0"



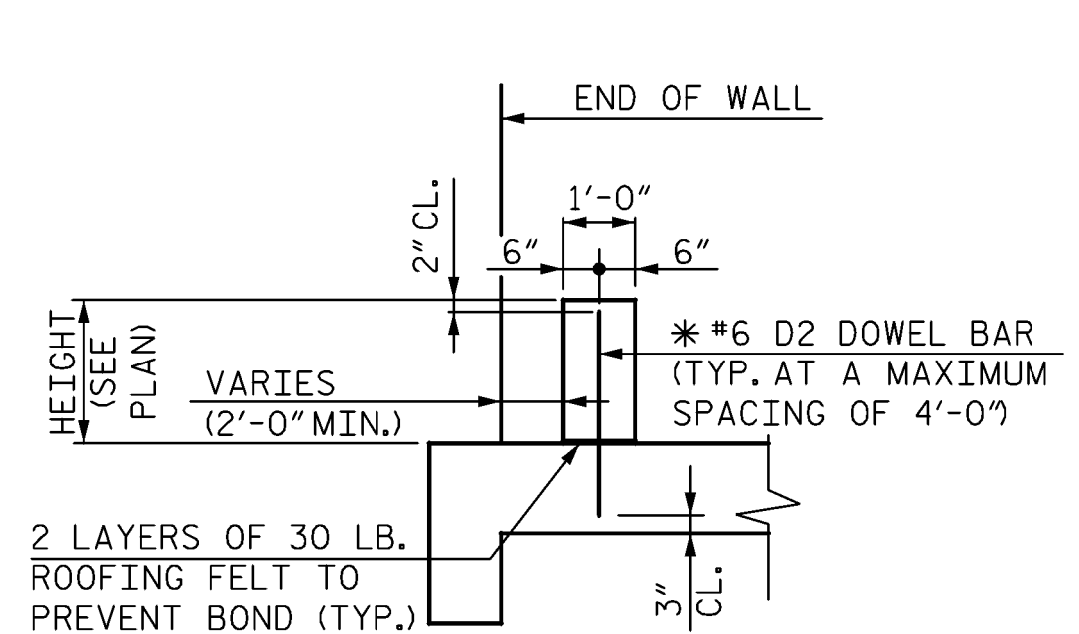
PLAN - FLOOR SLAB



DETAIL "A"

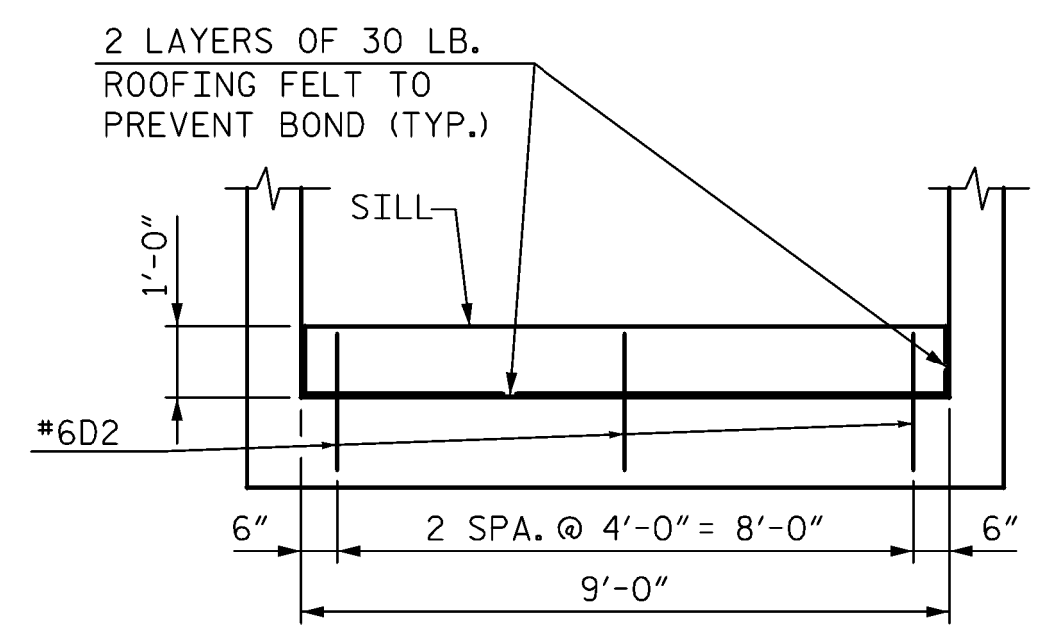


DETAIL "B"

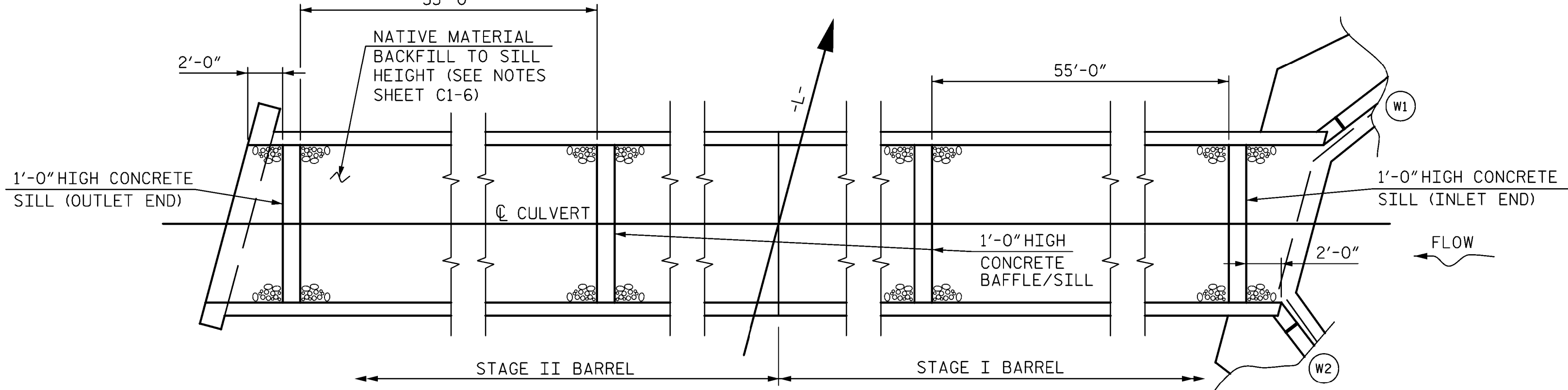


SECTION THROUGH SILL

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



SILL ELEVATION (LOOKING DOWN STREAM)



SILL LAYOUT PLAN

PROJECT NO. U-5813
 COUNTY RANDOLPH
 STATION: 53+99.00 -L-

SHEET 3 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BARREL PLAN FOR
 SINGLE 9 FT. x 8 FT.
 CONCRETE BOX CULVERT
 75° SKEW



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DRAWN BY	M. WRIGHT	DATE	9/22
CHECKED BY	P. BARBER	DATE	9/22
DESIGN ENGINEER OF RECORD	P. BARBER	DATE	9/22

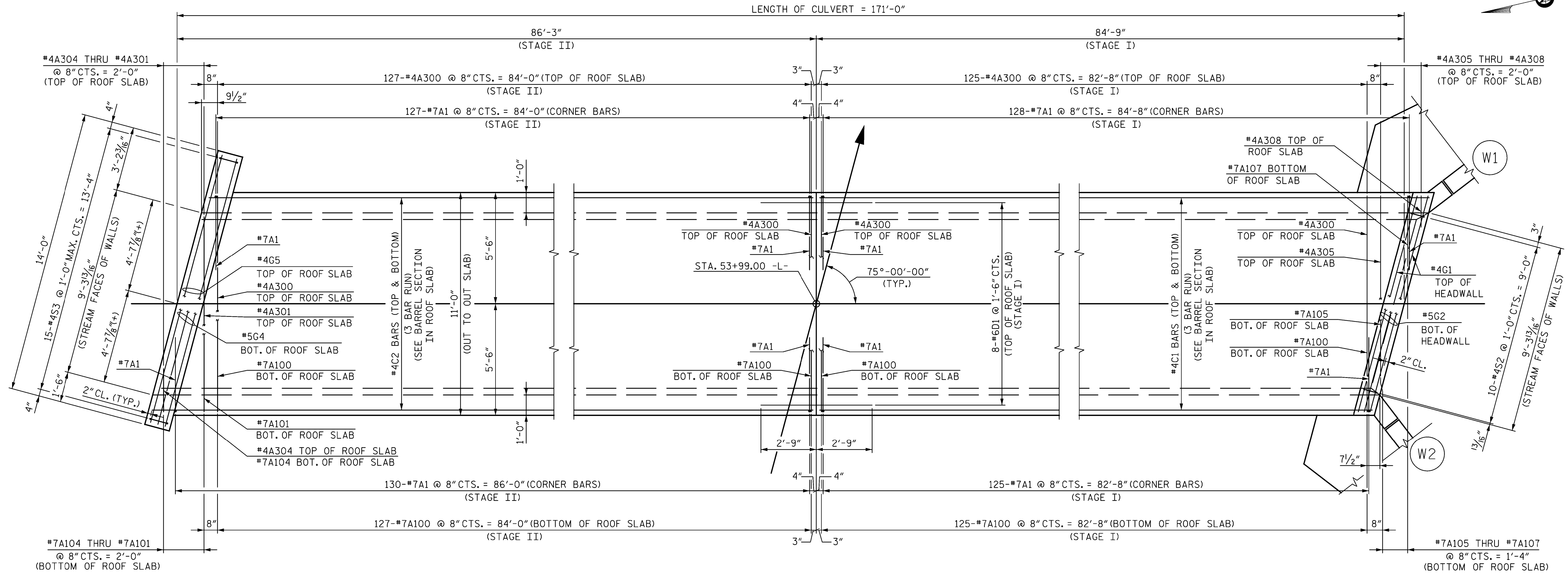
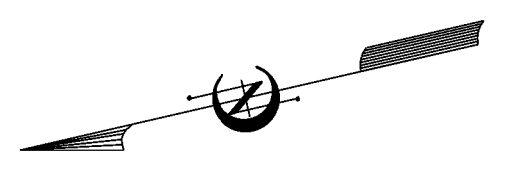
DWG. NO. 3

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TOTAL SHEETS: 7

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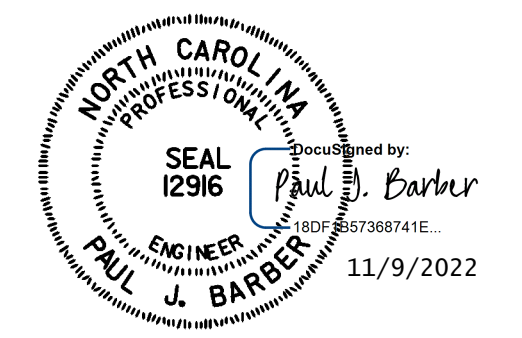
PLAN - ROOF SLAB

PROJECT NO. U-5813
RANDOLPH COUNTY
 STATION: 53+99.00 -L-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BARREL PLAN FOR
 SINGLE 9 FT. x 8 FT.
 CONCRETE BOX CULVERT
 75° SKEW



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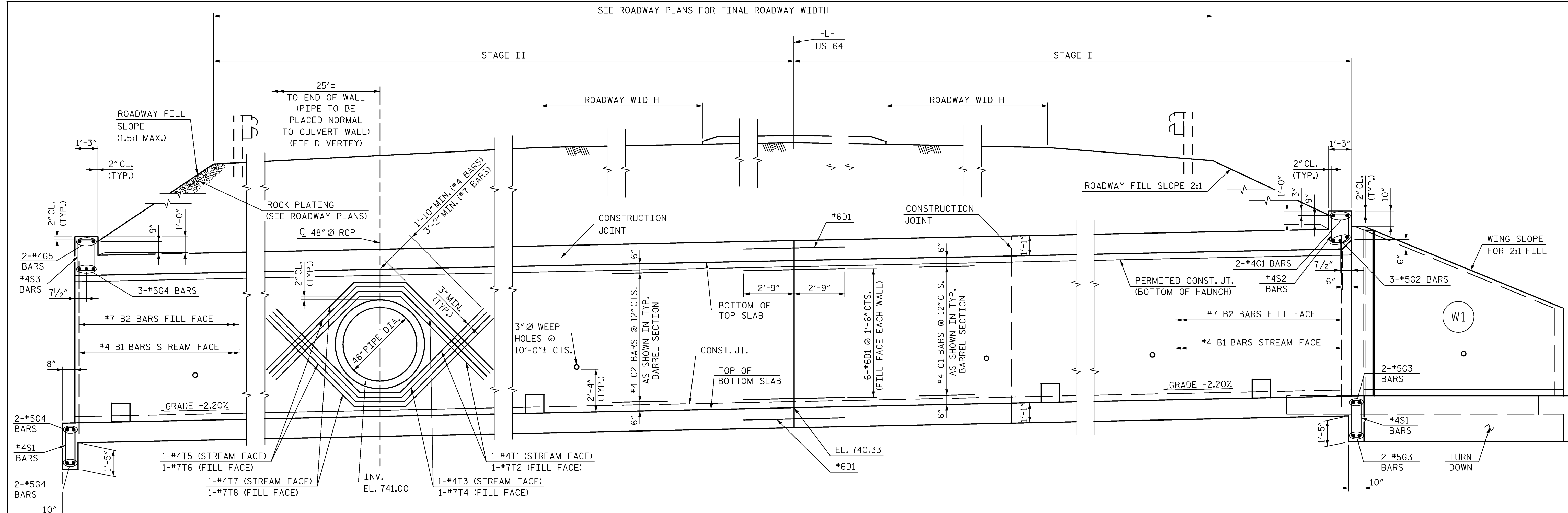
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 CHECKED BY: P. BARBER DATE: 9/22
 DESIGN ENGINEER OF RECORD: P. BARBER DATE: 9/22

DWG. NO. 4

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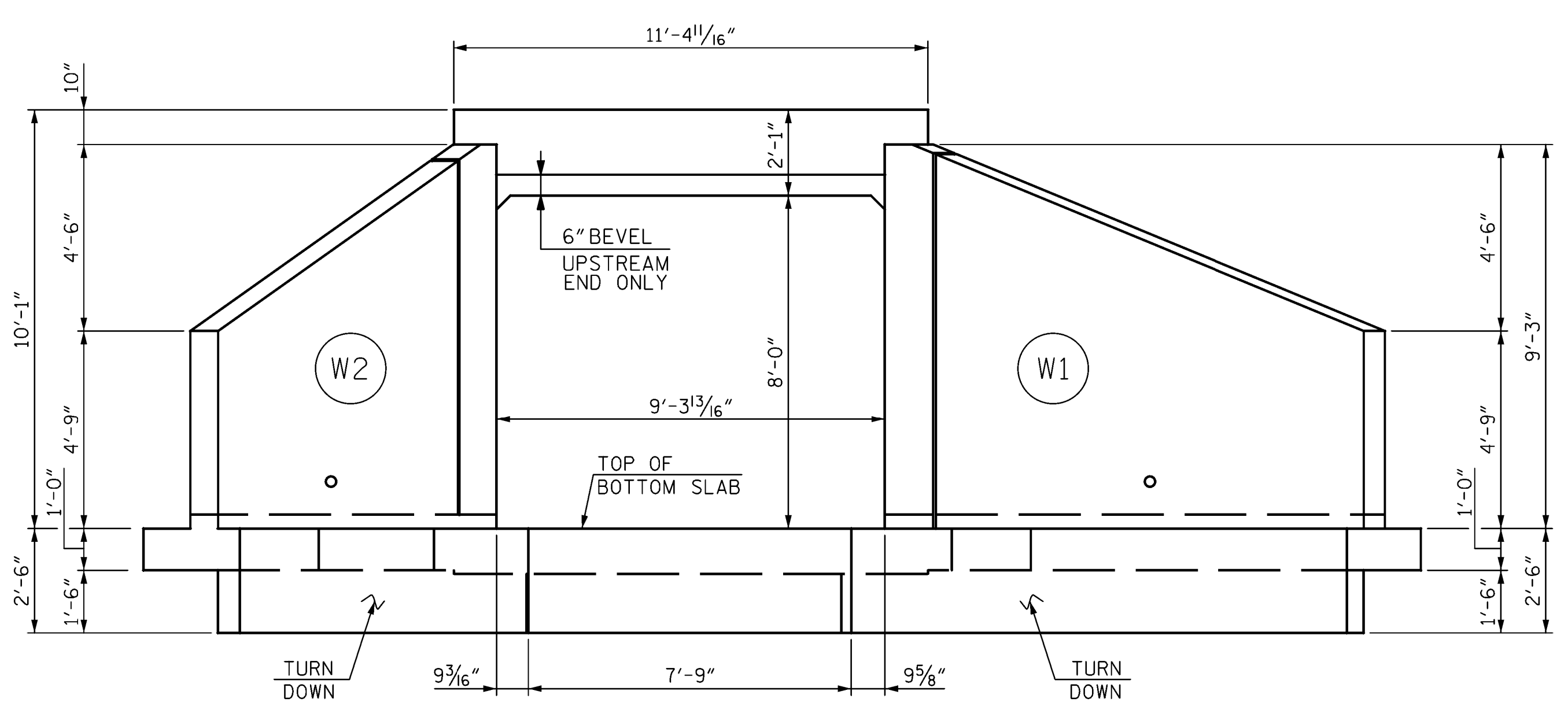
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EXTERIOR WALL - STAGE II

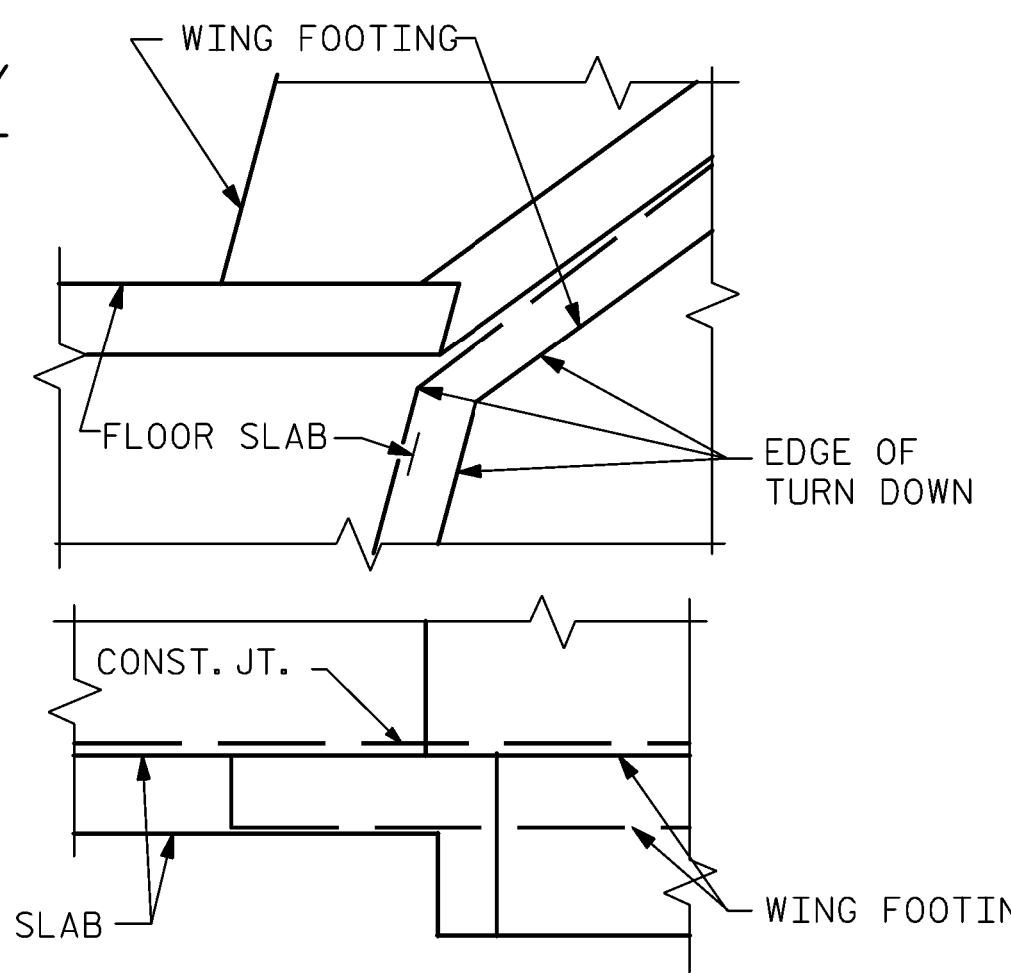
EXTERIOR WALL - STAGE I

CULVERT SECTION NORMAL TO ROADWAY
(LOOKING AHEAD STATION)

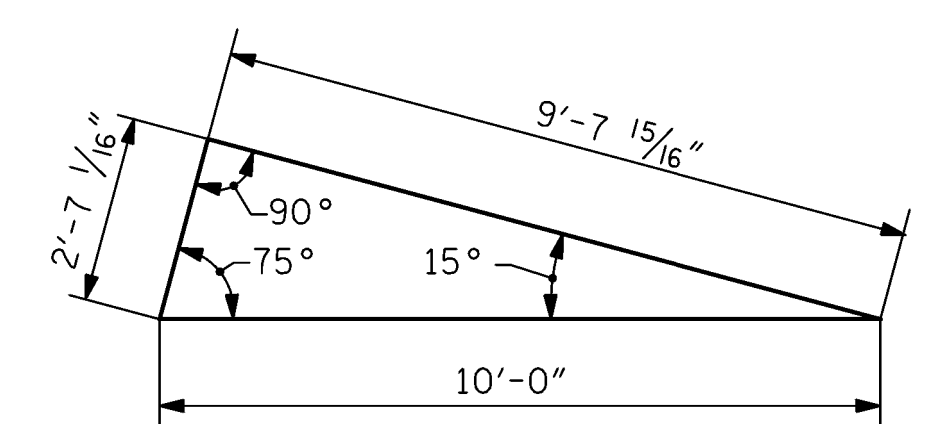


END ELEVATION NORMAL TO SKEW

(UPSTREAM END ELEVATION SHOWN. FOR DOWNSTREAM END ELEVATION, SEE SHEET "WALL ENVELOPE FOR RW-3 AND RW-4")



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



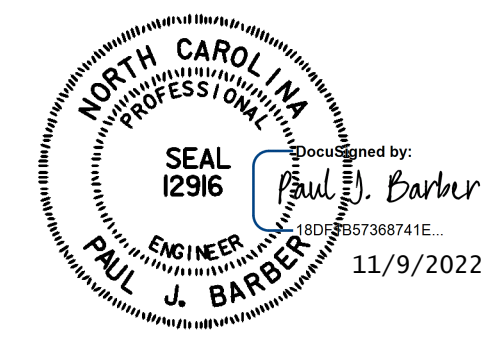
SKEW TRIANGLE

PROJECT NO. U-5813
RANDOLPH COUNTY
STATION: 53+99.00 -L-

SHEET 5 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL DETAILS FOR
SINGLE 9 FT. x 8 FT.
CONCRETE BOX CULVERT
75° SKEW



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DESIGNED BY	M. WRIGHT	DATE	1/22
CHECKED BY	P. BARBER	DATE	1/22
DESIGN ENGINEER OF RECORD	P. BARBER	DATE	9/22
DWG. NO. 5			

REVISIONS					SHEET NO.
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ADDITIONAL NOTES

SUBGRADE SHOULD BE VERIFIED BY ENGINEER OR THEIR REPRESENTATIVE PRIOR TO PLACING FOUNDATION CONDITIONING MATERIAL.

NO BACKFILLING OF EXTERIOR WALLS SHALL BE PERMITTED UNTIL ROOF SLAB HAS BEEN PLACED AND CURED. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BRACING WALLS UNTIL TOP SLAB IS COMPLETE.

AT THE DIRECTION OF THE ENGINEER, UNDERCUT SOFT/LOOSE SOILS THAT MAY BE ENCOUNTERED BENEATH THE BOTTOM OF THE FOUNDATION CONDITIONING MATERIAL. BACKFILL UNDERCUT AREAS WITH FOUNDATION CONDITIONING MATERIAL.

NATIVE MATERIAL IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY NATIVE MATERIAL SHALL BE USED TO LINE THE LOW FLOW CULVERT BARREL. NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

THE ENTIRE COST OF WORK TO EXCAVATE AND PLACE NATIVE MATERIALS WITHIN THE BOX AS SHOWN ON THE PLANS 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.

STAGING NOTES

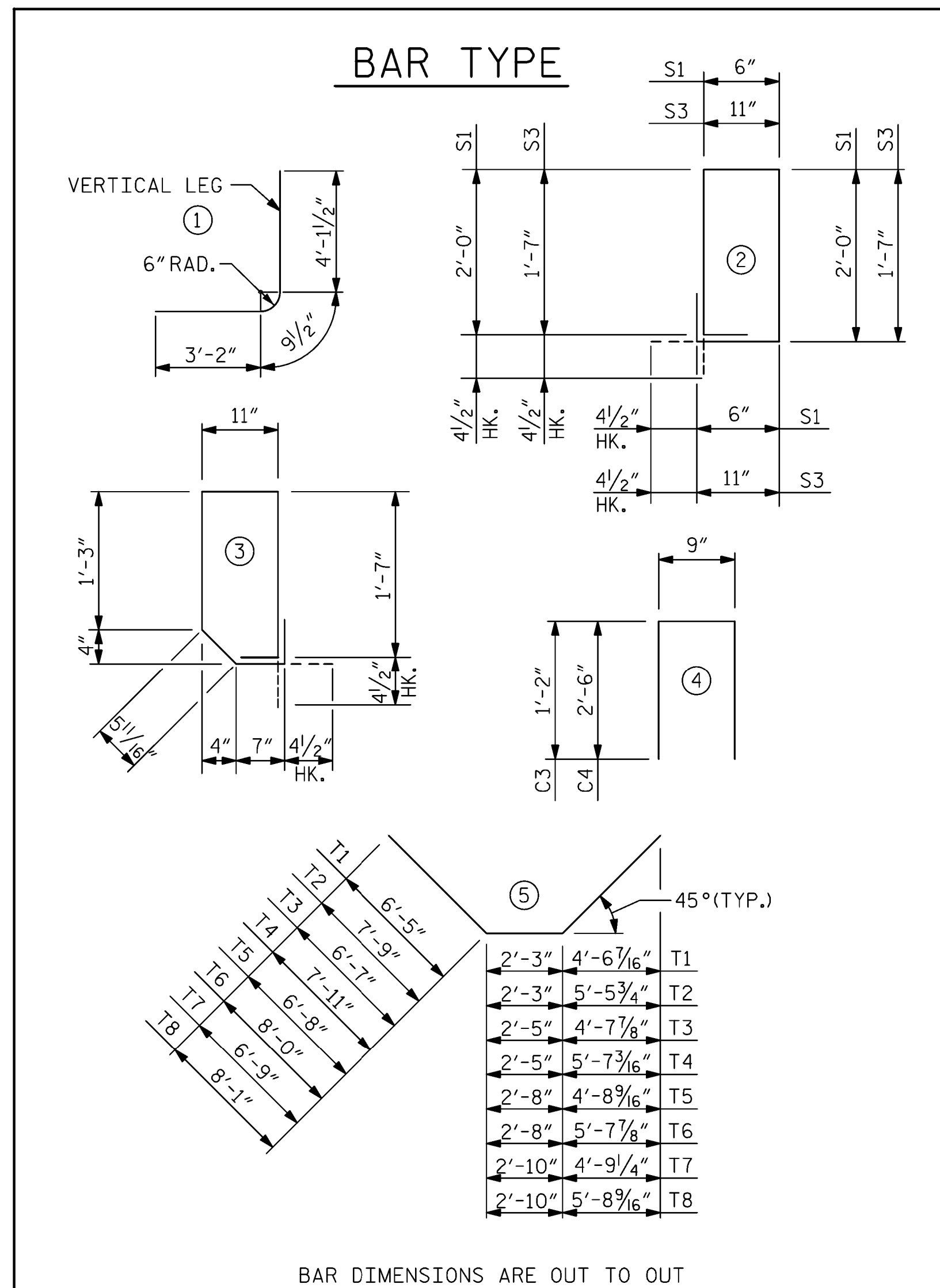
CONCRETE IN CULVERT TO BE POURED IN THE FOLLOWING ORDER:

STAGE I: AFTER DIVERTING EXISTING STREAM FLOW TO EXISTING CULVERT AND MOVING TRAFFIC TO NORTH SIDE, COMPLETE STAGE I.

1. CONSTRUCT STAGE I WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS.
2. CONSTRUCT REMAINING STAGE I PORTION OF WALL AND WINGS FULL HEIGHT FOLLOWED BY ENTIRE ROOF SLAB AND HEADWALL.

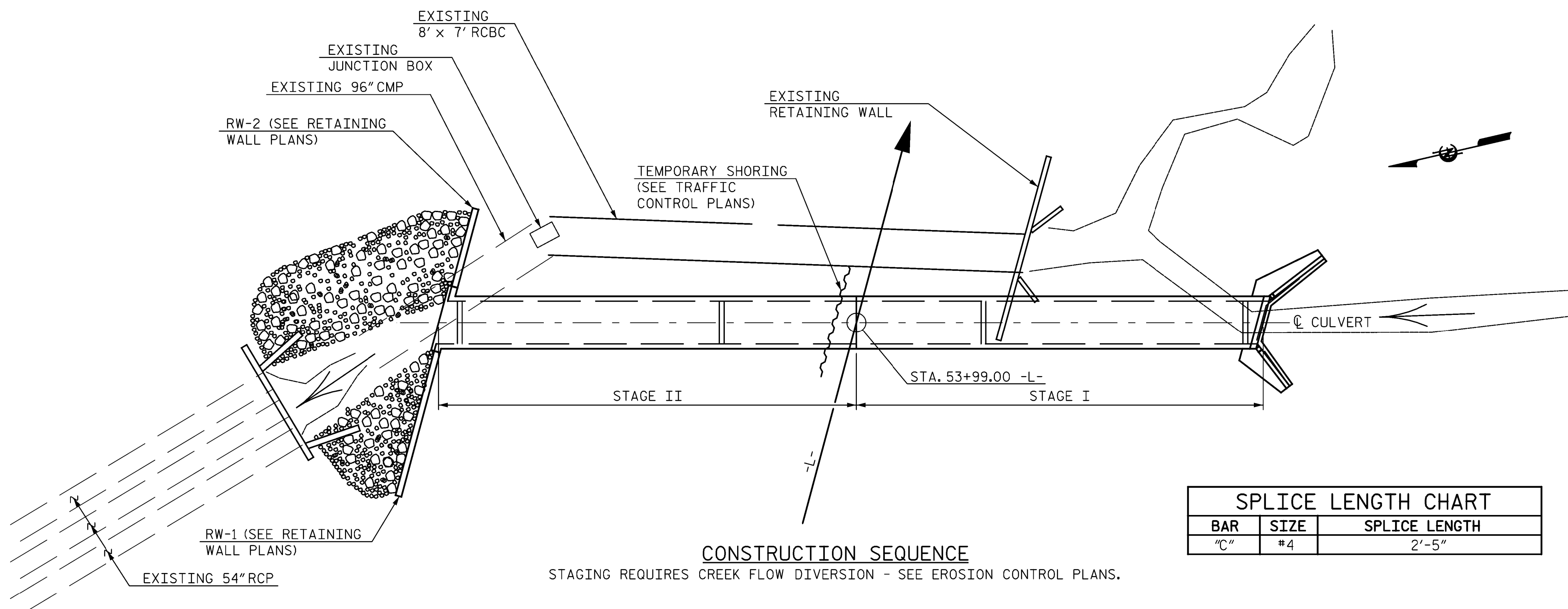
STAGE II: AFTER DIVERTING FLOW FROM COMPLETED STAGE I CULVERT BACK TO EXISTING CULVERT IN MEDIAN, INSTALLING TEMPORARY SHORING AND SHIFTING TRAFFIC SOUTH (SEE TRAFFIC CONTROL PLANS), CONSTRUCT STAGE II OF CULVERT. REMOVAL OF 96" CMP AND TEMPORARY STREAM DIVERSION AT NORTH END IS REQUIRED (SEE EROSION CONTROL PLANS).

1. CONSTRUCT STAGE II FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS.
2. CONSTRUCT REMAINING STAGE II PORTIONS OF THE WALLS FOLLOWED BY THE ENTIRE ROOF SLAB AND HEADWALL.



BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	507	7	1	8'-1"	8,377
A100	125	7	STR	10'-8"	2,725
A105	1	7	STR	7'-4"	15
A106	1	7	STR	4'-11"	10
A107	1	7	STR	2'-5"	5
A200	125	7	STR	10'-8"	2,725
A205	1	7	STR	8'-10"	18
A206	1	7	STR	6'-4"	13
A207	1	7	STR	4'-0"	8
A208	1	7	STR	1'-5"	3
A300	125	4	STR	10'-8"	891
A305	1	4	STR	8'-11"	6
A306	1	4	STR	6'-5"	4
A307	1	4	STR	3'-11"	3
A308	1	4	STR	1'-5"	1
A400	125	4	STR	10'-8"	891
A405	1	4	STR	8'-11"	6
A406	1	4	STR	6'-5"	4
A407	1	4	STR	3'-11"	3
A408	1	4	STR	1'-5"	1
B1	254	4	STR	9'-9"	1,654
B2	254	7	STR	7'-0"	3,634
C1	240	4	STR	30'-3"	4,850
D1	28	6	STR	5'-6"	231
D2	6	6	STR	1'-8"	15
G1	2	4	STR	11'-0"	15
G2	3	5	STR	11'-0"	34
G3	4	5	STR	7'-10"	33
S1	6	4	2	5'-9"	23
S2	10	4	3	5'-7"	37
REINFORCING STEEL				LBS. 26,235	

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	514	7	1	8'-1"	8,492
A100	127	7	STR	10'-8"	2,769
A101	1	7	STR	9'-6"	19
A102	1	7	STR	7'-0"	14
A103	1	7	STR	4'-6"	9
A104	1	7	STR	2'-0"	4
A200	127	7	STR	10'-8"	2,769
A201	1	7	STR	9'-6"	19
A202	1	7	STR	7'-0"	14
A203	1	7	STR	4'-6"	9
A204	1	7	STR	2'-0"	4
A300	127	4	STR	10'-8"	905
A301	1	4	STR	9'-6"	6
A302	1	4	STR	7'-0"	5
A303	1	4	STR	4'-6"	3
A304	1	4	STR	2'-0"	1
A400	127	4	STR	10'-8"	905
A401	1	4	STR	9'-6"	6
A402	1	4	STR	7'-0"	5
A403	1	4	STR	4'-6"	3
A404	1	4	STR	2'-0"	1
B1	271	4	STR	9'-9"	1,765
B2	258	7	STR	7'-0"	3,691
C2	240	4	STR	30'-9"	4,930
C3	12	4	4	3'-1"	25
C4	12	4	4	5'-9"	46
D2	6	6	STR	1'-8"	15
G4	7	5	STR	13'-8"	100
G5	2	4	STR	13'-8"	18
S1	10	4	2	5'-9"	38
S3	15	4	2	5'-9"	58
T1	2	4	5	15'-1"	20
T2	2	7	5	17'-9"	73
T3	2	4	5	15'-7"	21
T4	2	7	5	18'-3"	75
T5	2	4	5	16'-0"	21
T6	2	7	5	18'-8"	76
T7	2	4	5	16'-4"	22
T8	2	7	5	19'-0"	78
REINFORCING STEEL				LBS. 27,034	



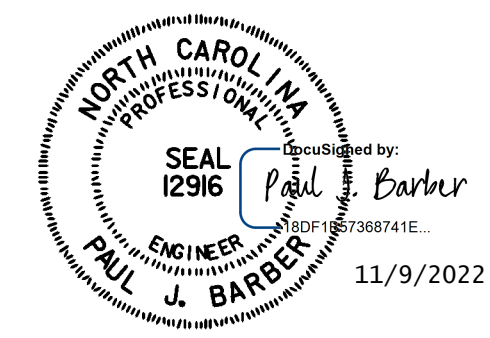
BAR	SIZE	SPLICE LENGTH
"C"	#4	2'-5"

FOUNDATION NOTES

USE A 12 INCH THICK PAD OF FOUNDATION CONDITIONING MATERIALS OVER AN AREA WITH LENGTH EQUAL TO THAT OF THE BOTTOM SLAB AND WIDTH EQUAL TO THE TOTAL CULVERT. FOR FOUNDATION CONDITIONING MATERIAL, SEE SECTIONS 414 AND 1016 OF THE STANDARD SPECIFICATIONS.

BACKFILL WITH SELECT MATERIAL, CLASS V OR VI MEETING THE REQUIREMENTS OF SECTION 1016 OF THE STANDARD SPECIFICATIONS.

UNDERCUT OF SOFT/LOOSE UNSUITABLE MATERIAL AND REPLACEMENT WITH SUITABLE MATERIAL PROPERLY COMPACTED TO SUBGRADE ELEVATION MAY BE REQUIRED PRIOR TO PLACEMENT OF FOUNDATION CONDITIONING MATERIAL. FOR BOX CULVERT EXCAVATION, SEE SECTION 414 OF THE STANDARD SPECIFICATIONS.



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DESIGNED BY: M. WRIGHT DATE: 9/22
 CHECKED BY: P. BARBER DATE: 9/22
 DESIGN ENGINEER OF RECORD: P. BARBER DATE: 9/22

DWG. NO. 6

PROJECT NO. U-5813
RANDOLPH COUNTY
 STATION: 53+99.00 -L-

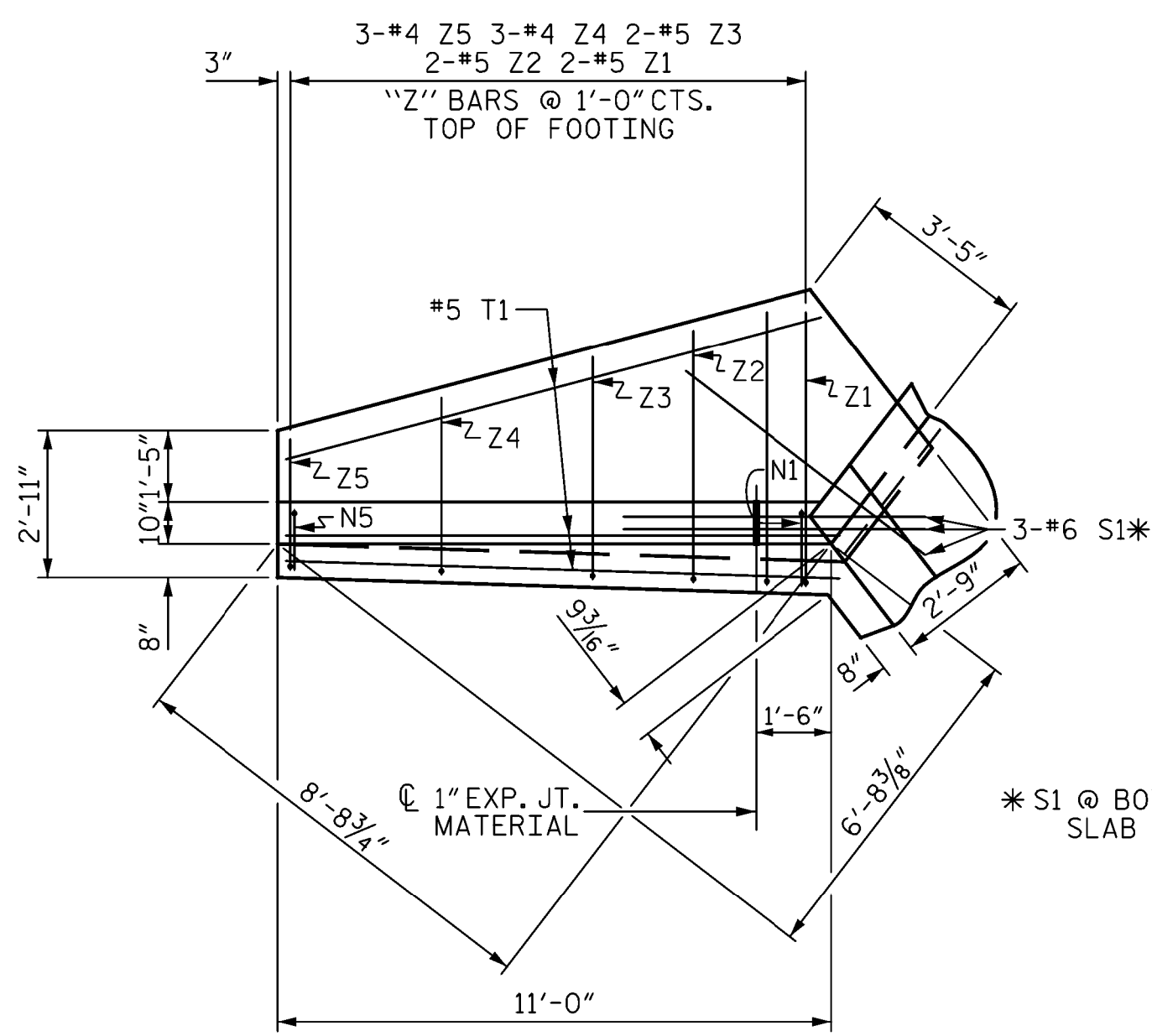
SHEET 6 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

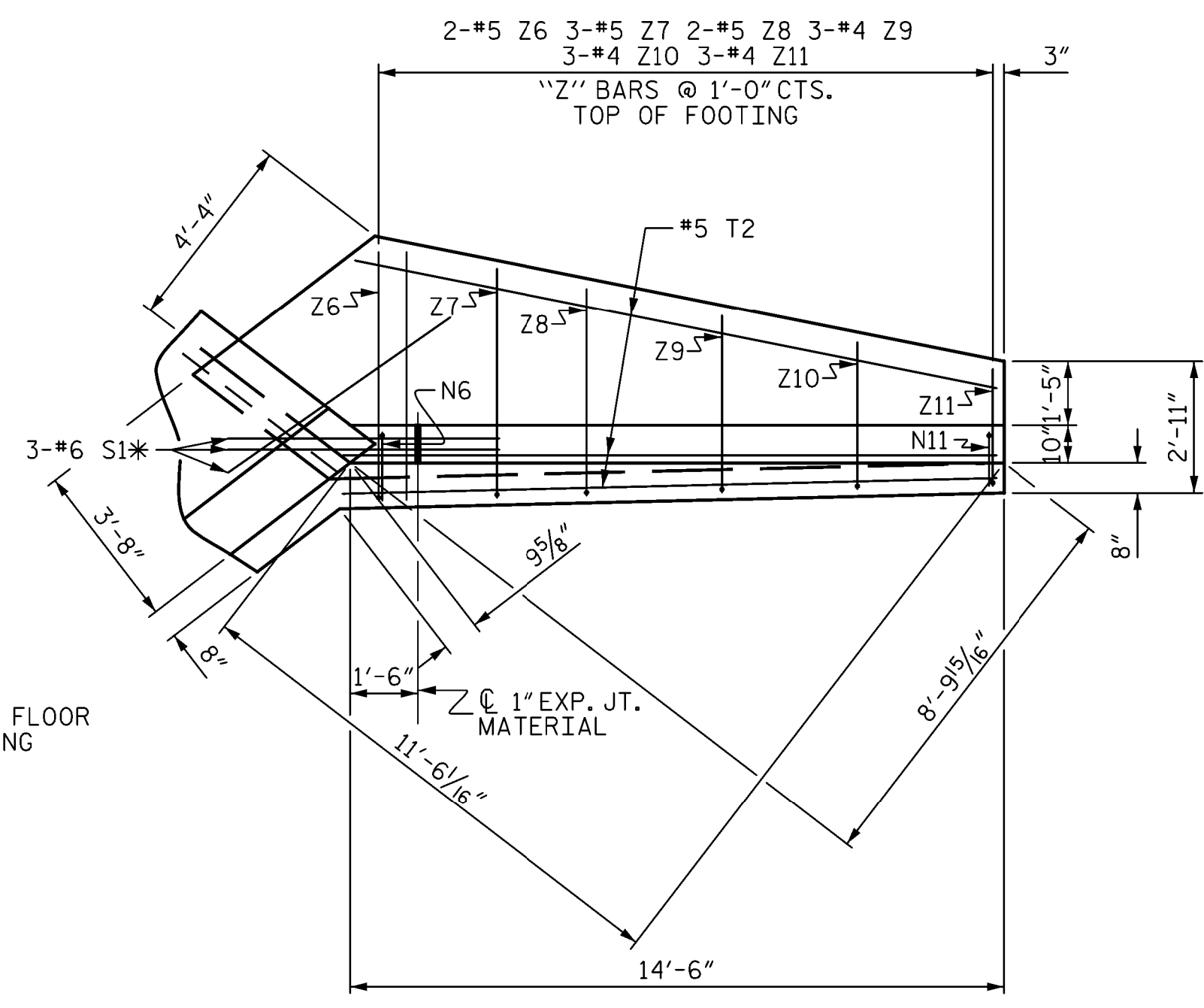
BILL OF MATERIAL
 FOR SINGLE
 9 FT. x 8 FT.
 CONCRETE BOX CULVERT

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

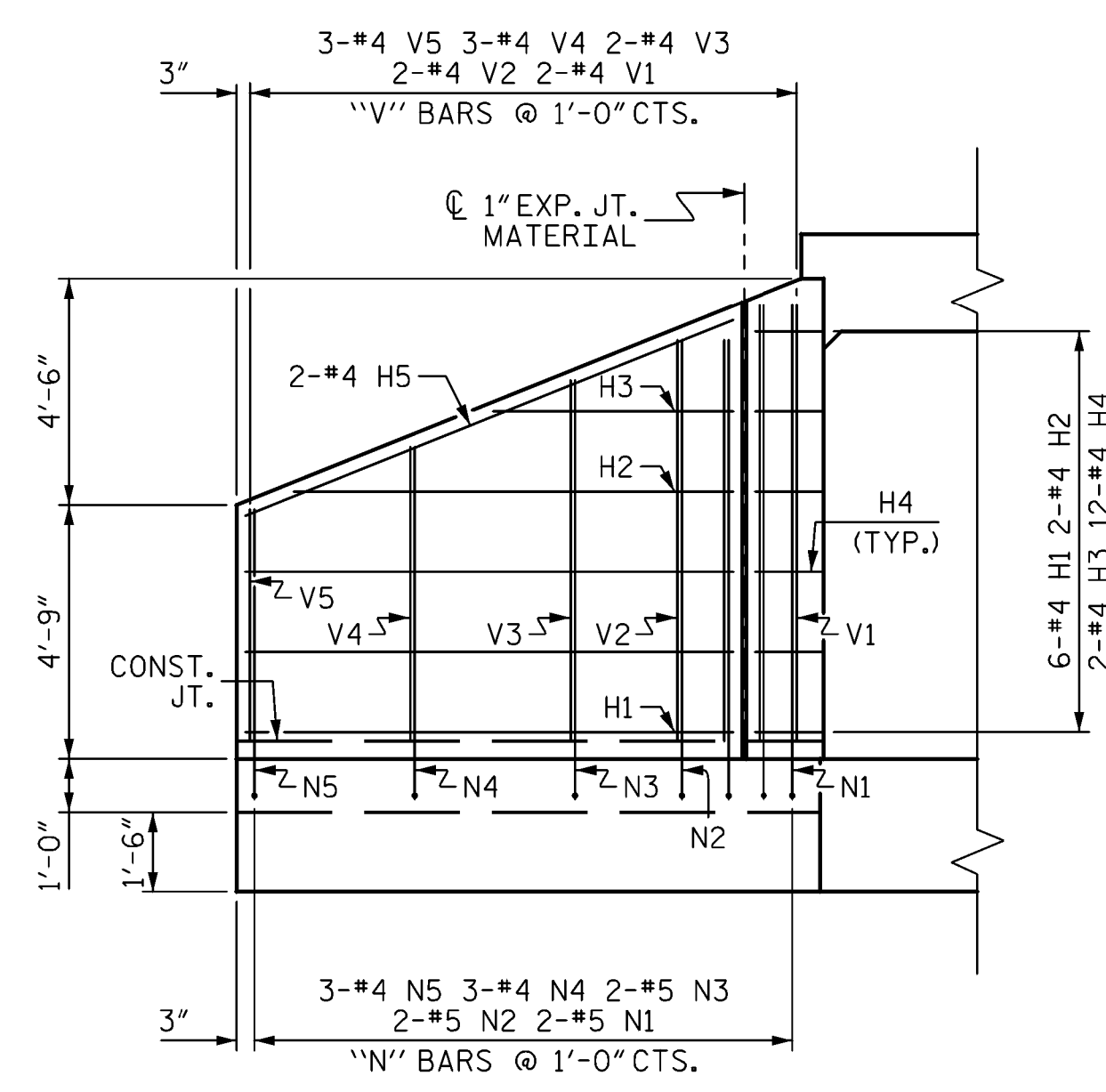
TOTAL SHEETS: 7



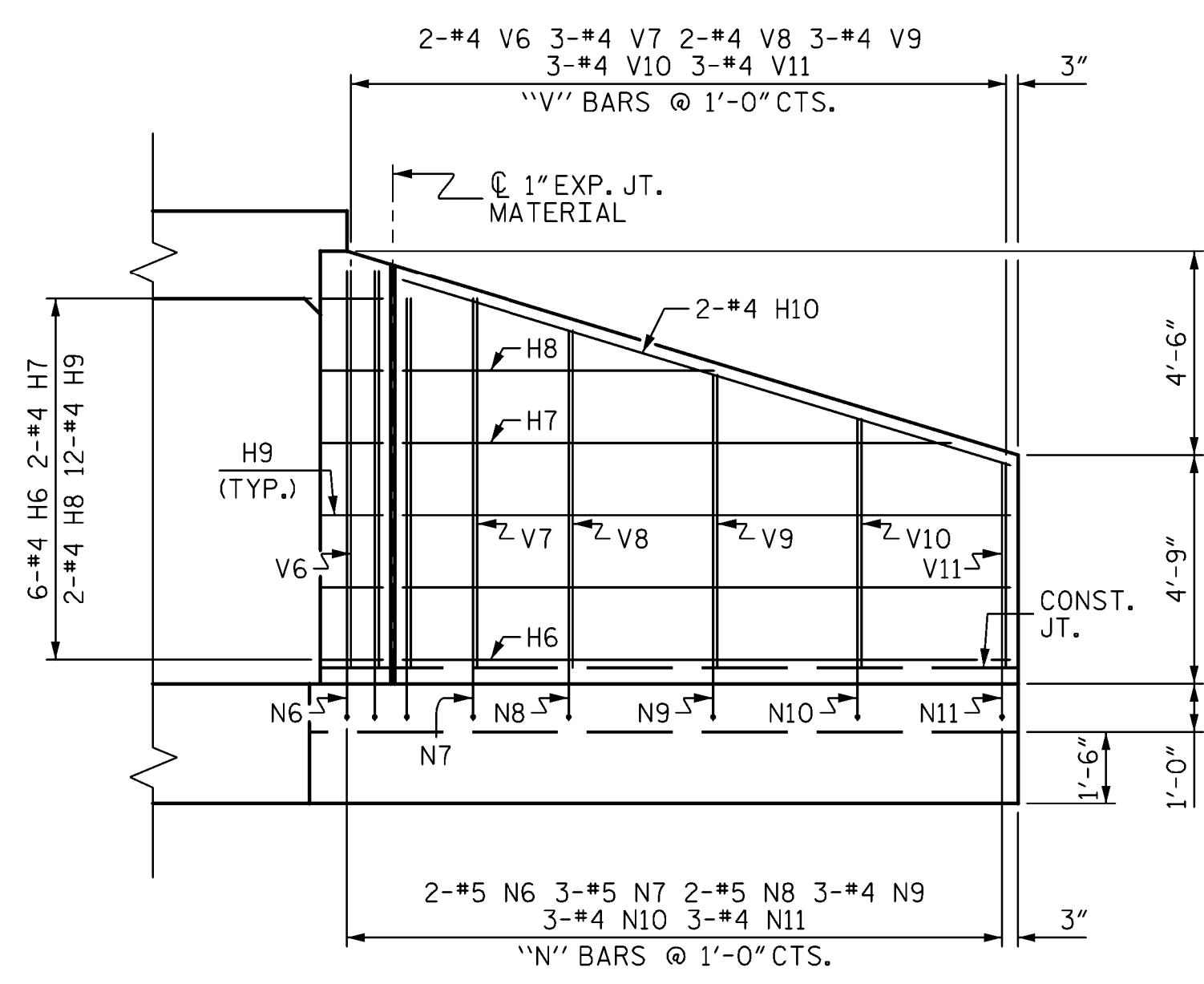
PLAN W2



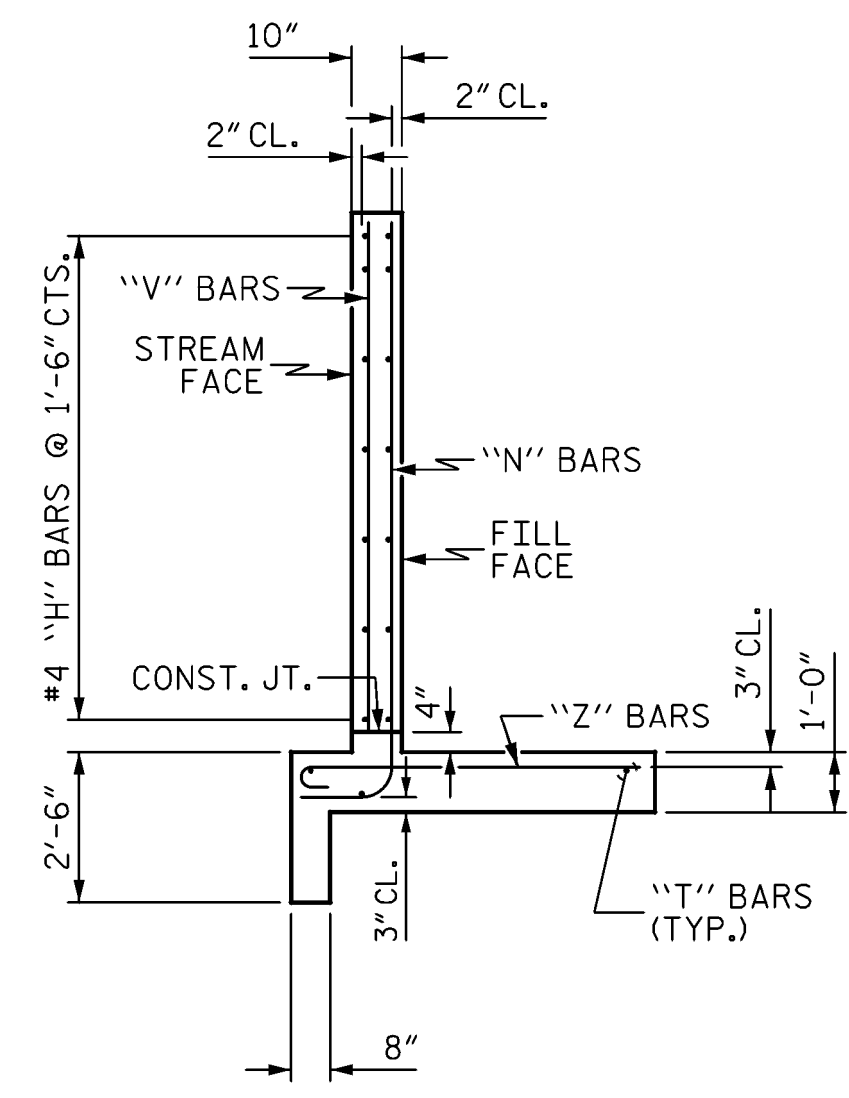
PLAN W1



ELEVATION W2



ELEVATION W1



TYPICAL WING SECTION

BAR TYPES		BILL OF MATERIAL				
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
H1	6	#4	STR	9'-1"	36	
H2	2	#4	STR	8'-2"	11	
H3	2	#4	STR	4'-5"	6	
H4	12	#4	1	3'-3"	26	
H5	2	#4	STR	9'-10"	13	
H6	6	#4	STR	12'-7"	50	
H7	2	#4	STR	11'-4"	15	
H8	2	#4	STR	6'-5"	9	
H9	12	#4	2	3'-3"	26	
H10	2	#4	STR	13'-2"	18	
N1	2	#5	3	10'-2"	21	
N2	2	#5	3	9'-7"	20	
N3	2	#5	3	8'-9"	18	
N4	3	#4	3	7'-7"	15	
N5	3	#4	3	6'-4"	13	
N6	2	#5	3	10'-3"	21	
N7	3	#5	3	9'-8"	30	
N8	2	#5	3	9'-1"	19	
N9	3	#4	3	8'-2"	16	
N10	3	#4	3	7'-3"	15	
N11	3	#4	3	6'-4"	13	
S1	6	#6	STR	6'-0"	54	
T1	3	#5	STR	11'-0"	34	
T2	3	#5	STR	14'-6"	45	
V1	2	#4	STR	8'-2"	11	
V2	2	#4	STR	7'-6"	10	
V3	2	#4	STR	6'-9"	9	
V4	3	#4	STR	5'-6"	11	
V5	3	#4	STR	4'-4"	9	
V6	2	#4	STR	8'-3"	11	
V7	3	#4	STR	7'-8"	15	
V8	2	#4	STR	7'-0"	9	
V9	3	#4	STR	6'-1"	12	
V10	3	#4	STR	5'-2"	10	
V11	3	#4	STR	4'-3"	9	
Z1	2	#5	4	6'-0"	13	
Z2	2	#5	4	5'-7"	12	
Z3	2	#5	4	5'-0"	10	
Z4	3	#4	4	4'-0"	8	
Z5	3	#4	4	3'-1"	6	
Z6	2	#5	4	6'-1"	13	
Z7	3	#5	4	5'-8"	18	
Z8	2	#5	4	5'-2"	11	
Z9	3	#4	4	4'-5"	9	
Z10	3	#4	4	3'-9"	8	
Z11	3	#4	4	3'-1"	6	

REINFORCING STEEL FOR 2 WINGS (STAGE I)		REINFORCING STEEL FOR 2 WINGS (STAGE II)	
CLASS A CONCRETE (STAGE I)		CLASS A CONCRETE (STAGE II)	
2 WINGS	11.3 CY	1 HEADWALL	0.6 CY
1 HEADWALL	0.5 CY	2 WALL BUMP OUTS	0.4 CY
1 END CURTAIN WALL	0.6 CY	1 END CURTAIN WALL	0.9 CY
2 1'-0" HIGH SILLS	0.7 CY	2 1'-0" HIGH SILLS	0.7 CY
TOTAL	13.1 CY	TOTAL	2.6 CY

PROJECT NO. U-5813
 COUNTY RANDOLPH
 STATION: 53+99.00 -L-

SHEET 7 OF 7
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
STANDARD WINGS FOR CONCRETE BOX CULVERT
 H = 8'-0" SLOPE = 2:1
 75° SKEW



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DESIGNED BY: M. WRIGHT DATE: 1/22
 CHECKED BY: P. BARBER DATE: 1/22
 DESIGN ENGINEER OF RECORD: P. BARBER DATE: 9/22

DWG. NO. 7

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

TOTAL SHEETS: 7

11/9/2022 2:45:02 PM
 ASSEMBLED BY: M. WRIGHT DATE: 1/22
 CHECKED BY: P. BARBER DATE: 1/22
 DRAWN BY: CCJ 01/00
 CHECKED BY: RWW 03/00
 REV. 6/19 MAA/THC

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED