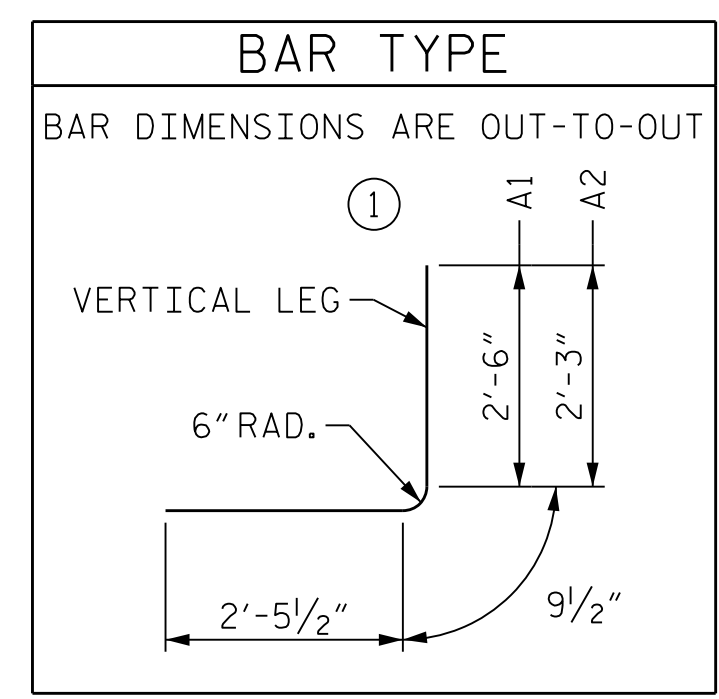


LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS

REINFORCING STEEL BAR SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	242	4	1	5'-9"	930
A2	242	4	1	5'-6"	889
A100	121	5	STR	7'-11"	999
A200	121	6	STR	7'-11"	1439
A300	61	4	STR	7'-11"	323
A400	61	4	STR	7'-11"	323
B1	242	5	STR	8'-11"	2251
B2	242	5	STR	7'-0"	1767
C1	136	4	STR	31'-2"	2831
G1	4	4	STR	8'-0"	22
REINFORCING STEEL					11,774 LBS
CLASS A CONCRETE CULVERT					48.8 C.Y.
TOTAL					48.8 C.Y.



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 $f_y = 60$ ksi.

SPLICE LENGTH CHART

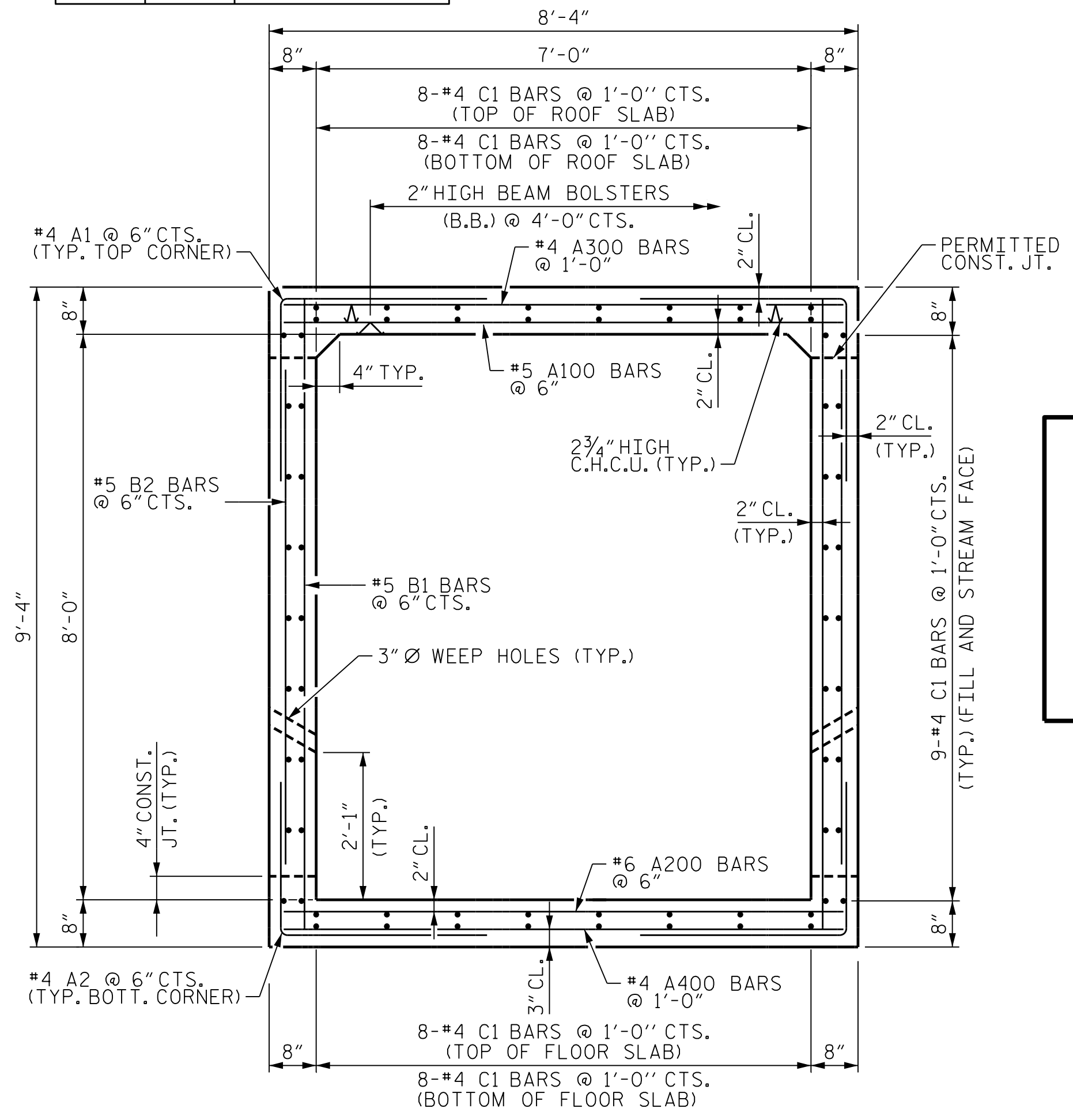
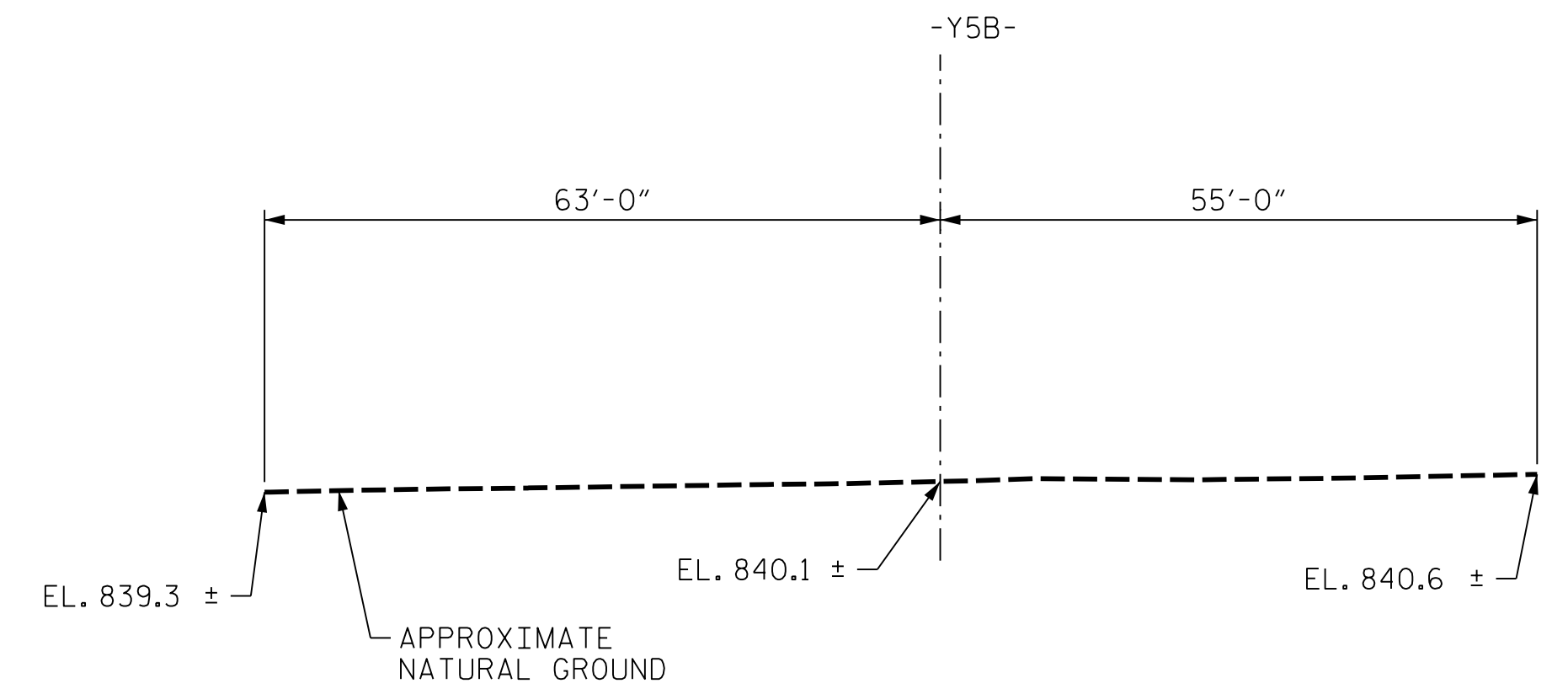
BAR	SIZE	SPLICE LENGTH
B1	#5	2'-4"
C1	#4	2'-5"

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
BARREL @ 0.811 C.Y./FT.	48.8 C.Y.
WINGS ETC.	31.6 C.Y.
TOTAL	80.4 C.Y.
REINFORCING STEEL	
BARREL, HEADWALLS	11,774 LBS.
WINGS	2,975 LBS.
TOTAL	14,749 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	105 TONS
RIP RAP, CLASS A	15 TONS
RIP RAP, CLASS B	15 TONS

HYDRAULIC DATA

DESIGN DISCHARGE	= 1020 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YR.
DESIGN HIGH WATER ELEVATION	= 847.4
DRAINAGE AREA	= 0.44 SQ. MI.
BASE DISCHARGE (Q100)	= 1190 CFS
BASE HIGH WATER ELEVATION	= 847.9
OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	= 2465 CFS
FREQUENCY OF OVERTOPPING FLOOD	= >500 YR.
OVERTOPPING FLOOD ELEVATION	= 849.9



RIGHT ANGLE SECTION OF BARREL

THERE ARE 68 "C" BARS IN SECTION OF BARREL

NOTES

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- DESIGN FILL = 6.75'
- FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTE SHEET.
- 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN THE 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 THE WING SHEETS.
- 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 PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCING CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.
- A 3 FOOT STRIP OF GEOTEXTILE SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- 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 THE VARIOUS PAY ITEMS.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

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.

FOR CULVERT EXCAVATION, SEE SECTION 414 OF THE STANDARD SPECIFICATIONS.

THE REINFORCED CONCRETE BOX CULVERT SHALL BE PLACED ON THE STANDARD 2.0 FOOT BLANKET OF FOUNDATION CONDITIONING MATERIAL SEE SECTION 414 OF THE STANDARD SPECIFICATIONS

IF SOFT/VERY LOOSE SOILS ARE ENCOUNTERED BENEATH THE BOTTOM OF THE FOUNDATION CONDITIONING MATERIALS, REMOVE AS MUCH MATERIAL AS NECESSARY AND WORK IN CLASS A OR CLASS B RIPRAP TO STABILIZE THE SUBGRADE. REFER TO OPERATIONS ENGINEER FOR SPECIFIC RECOMMENDATIONS. RIPRAP ESTIMATED QUANTITY = 30 TONS.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 19+75.11 -Y5B-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SINGLE BARREL
 7 FT. X 8 FT.
 CONCRETE BOX CULVERT
 76° SKEW**

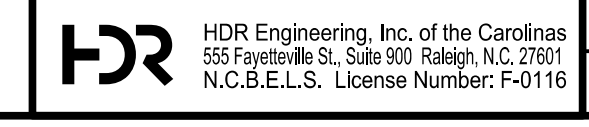
REVISIONS

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

SHEET NO. C6-1
 TOTAL SHEETS 5

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DES BY: T. MCALEENAN	DATE: 08/19	DWG BY: T. MCALEENAN	DATE: 08/19
DES CHK: R. TURNAGE	DATE: 08/19	CHK BY: R. TURNAGE	DATE: 08/19



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 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

10/11/2021

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