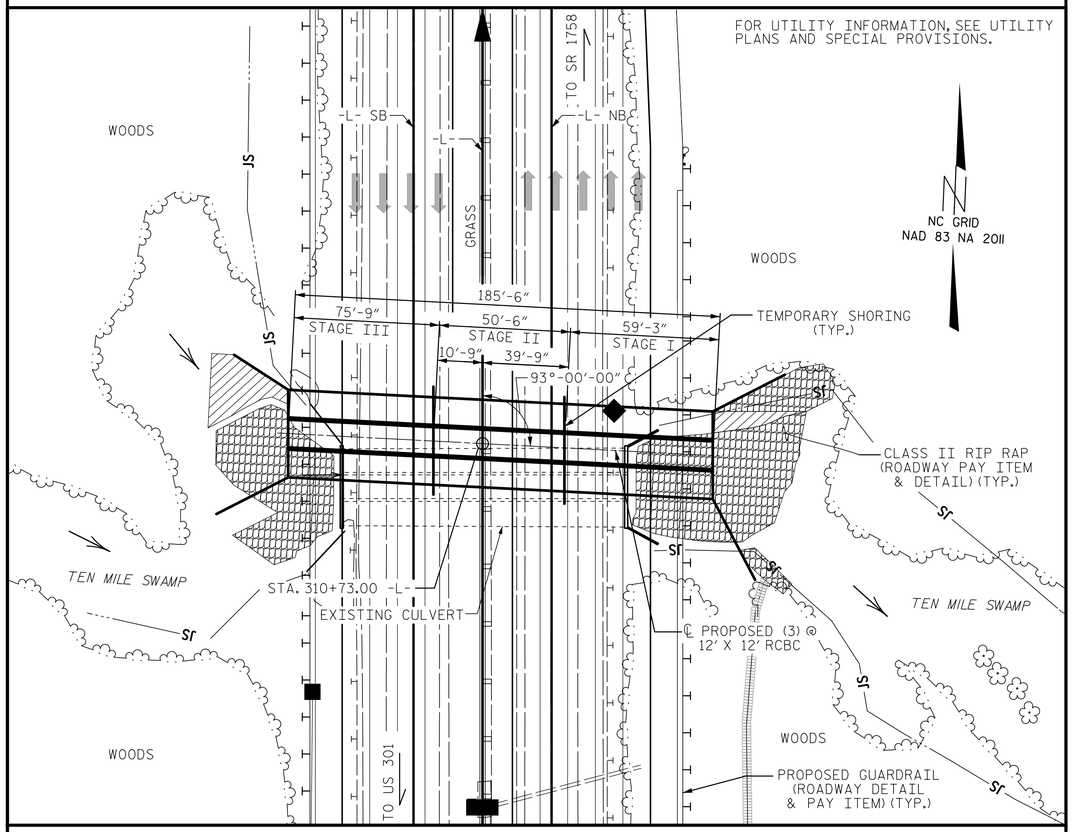
BENCH MARK #16: RR SPIKE SET IN 12" PINE; STA. 326+77 -L-; 357' RT.; ELEV. 155.96'

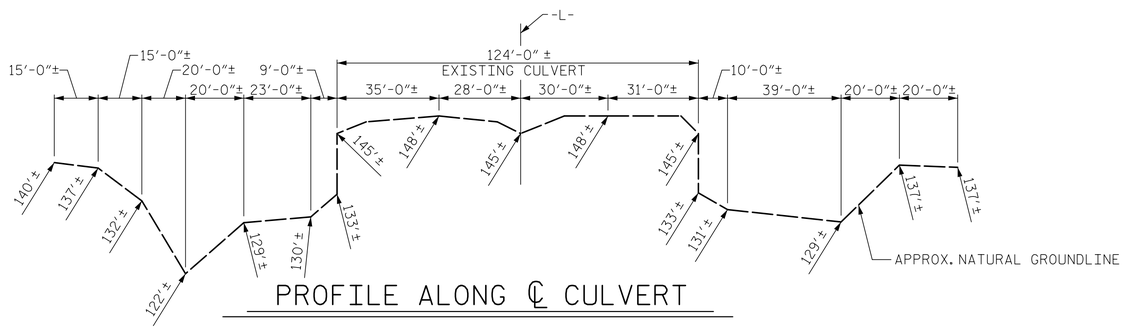


LOCATION SKETCH

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		REINFORCING STEEL		FOUNDATION COND. MAT'L.	
STAGE I	288.0 C.Y.	STAGE I	38,425 LBS.	STAGE I	180 TONS
STAGE II	201.5 C.Y.	STAGE II	29,493 LBS.	STAGE II	153 TONS
STAGE III	348.6 C.Y.	STAGE III	47,815 LBS.	STAGE III	230 TONS
TOTAL	838.1 C.Y.	TOTAL	115,733 LBS.	TOTAL	563 TONS

REMOVAL OF EXISTING STRUCTURE	LUMP SUM	CULVERT EXCAVATION	LUMP SUM



PROFILE ALONG ℄ CULVERT

DRAWN BY : ZCS DATE : 10/21
CHECKED BY : MGC DATE : 1/22
DESIGN ENGINEER OF RECORD: ZCS DATE : 1/22

NOTES:

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

DESIGN FILL---------- 5.0 FT.

FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.

3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN EACH STAGE 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.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. 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.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.

FOR TRAFFIC PHASING, SEE TRAFFIC CONTROL PLANS.

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.

SEE SECTION 414 OF THE STANDARD SPECIFICATIONS FOR CULVERT EXCAVATION AND BACKFILLING. EXCAVATE 1 FOOT BELOW CULVERT FOOTING AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414-4 OF THE STANDARD SPECIFICATIONS.

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

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

DOWELS SHALL BE USED TO CONNECT THE STAGE II CULVERT TO STAGE I AND STAGE III TO II AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

ROADWAY DATA

G.P. ELEV. @ STA. 310+73.00 -L- SB	= 149.58'
G.P. ELEV. @ STA. 310+73.00 -L- NB	= 149.74'
BED ELEV. @ STA. 310+73.00 -L-	= 132.0'
ROADWAY SLOPES	= 3 : 1

HYDRAULIC DATA

DESIGN DISCHARGE	= 2600 CFS
FREQUENCY OF DESIGN FLOOD	= 100 YRS
DESIGN HIGH WATER ELEVATION	= 144.3'
DRAINAGE AREA	= 17.5 SQ. MI.
BASE DISCHARGE (Q100)	= 2600 CFS
BASE HIGH WATER ELEVATION	= 144.3'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 4915 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YRS
OVERTOPPING FLOOD ELEVATION	= 148.6' ✳

✳ OVERTOPPING OCCURS AT LOW POINT AT STA. 314+65 -L- SB

PROJECT NO. I-5987A
ROBESON COUNTY
STATION: 310+73.00 -L-

SHEET 1 OF 14 REPLACES CULVERT #511

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CLECK, JR.
DocuSigned by: Marshall G. Cleck, Jr.
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5/10/2022 | 10:02 AM EDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 12 FT. X 12 FT. CONCRETE BOX CULVERT 93° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C11-1
1			3			TOTAL SHEETS
2			4			14

FILE NAME: 413_001_I-5987A_Site_11_SMU_CU_001.dgn SITE 11