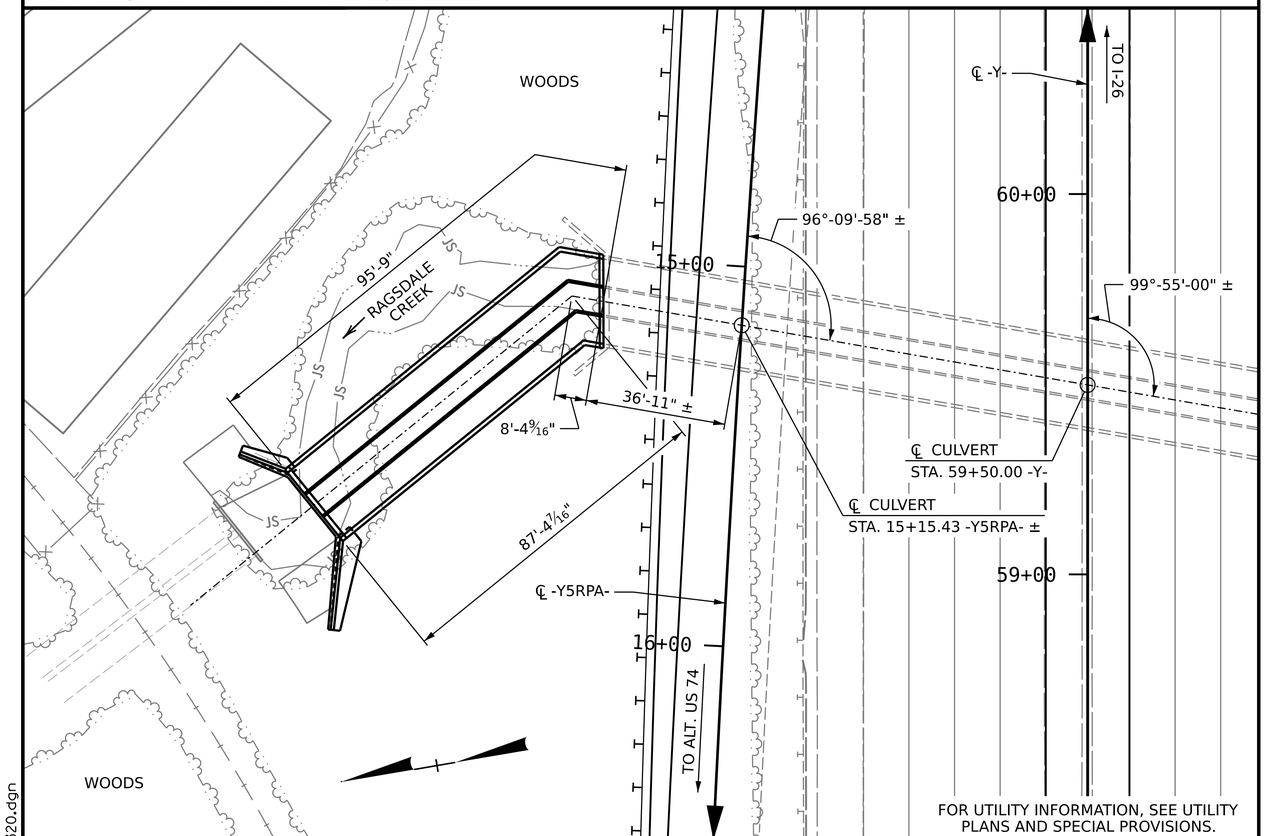
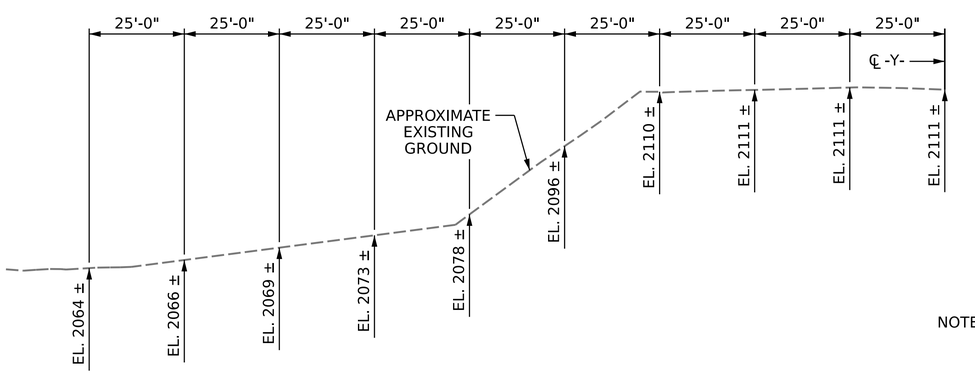
BL3-147598, STA 19+24.64 -Y5RPA-. 29.29' LT, EL. 2118.17

F.A. PROJECT NO. 0026024-0026025



LOCATION SKETCH



PROFILE ALONG ℄ CULVERT

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 = 60 ksi.

HYDRAULIC DATA:

DESIGN DISCHARGE	= 1400 CFS
FREQUENCY OF DESIGN FLOOD	= 100 YEAR
DESIGN HIGH WATER ELEVATION	= 2081.80
DRAINAGE AREA	= 3.43 SQ. MI.
BASE DISCHARGE (Q 100)	= 1400 CFS
BASE HIGH WATER ELEVATION	= 2081.80

OVERTOPPING FLOOD DATA:

OVERTOPPING DISCHARGE	= 1900+ CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YEAR
OVERTOPPING FLOOD ELEVATION	= 2097.10 * *

* * OVERTOPPING OCCURS AT EL. 2097.1 ± INTO NEXT DRAINAGE AREA AT STA. 64+50.00 -Y- RT.

HORIZONTAL CURVE DATA

PI STA. 18+02.20 -Y5RPA-
Δ = 4°-44'-02.6 (LT.)
D = 0°-40'-26.6"
L = 702.31'
T = 351.35'
R = 8500.00'

GRADE DATA:

GRADE POINT EL. @ STA. 15+15.43 -Y5RPA- = EL. 2107.53
BED EL. @ STA. 15+15.43 -Y5RPA- = EL. 2065.45
ROADWAY SLOPE 2:1

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE

BARREL @	3.603 CY/FT	345.0 C.Y.
HEADWALL, EDGE BEAMS		2.9 C.Y.
SILL		0.5 C.Y.
WINGS, CURTAIN WALL		20.8 C.Y.
TOTAL		369.2 C.Y.

REINFORCING STEEL

BARRELS, ETC.	42,952 LBS.
WINGS, ETC.	1,373 LBS.
TOTAL	44,325 LBS.

BOX CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	191 TONS

NOTES:

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

DESIGN FILL ---------- 35'-0"

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

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

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
1. EDGE BEAM AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS FULL HEIGHT FOLLOWED BY ROOF SLAB, HEADWALL AND EDGE BEAM.

THE ENGINEER SHALL CHECK THE LENGTH OF THE CULVERT EXTENSION BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF 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 THE JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

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.

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.

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

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.

CULVERT MUST BE CAST-IN-PLACE; PRECAST OPTION WILL NOT BE ALLOWED.

DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSION. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

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.

A 3 FOOT STRIP OF FILTER FABRIC 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 BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

FOUNDATION NOTES:

EXCAVATE FOUNDATION A MINIMUM OF 12" BELOW CULVERT BEARING ELEVATION. PLACE 12" OF CLASS VI FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH SECTION 414 OF THE STANDARD SPECIFICATIONS.

OVEREXCAVATE ADDITIONAL LOOSE/SOFT OR ORGANIC MATERIAL IF PRESENT TO SUITABLE BEARING MATERIALS AND REPLACE WITH ADDITIONAL CLASS IV FOUNDATION CONDITIONING MATERIAL.

WRAP TYPE 4 GEOTEXTILE AROUND THE COLD JOINT BETWEEN THE EXISTING AND NEW CULVERT. OVERLAP GEOTEXTILE A MINIMUM OF 1 FOOT IN BOTH DIRECTIONS FROM JOINT.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

DRAWN BY : S.D. COOPER DATE : 5-23
CHECKED BY : J.A. BATTS DATE : 5-23
DESIGN ENGINEER OF RECORD: J.A. BATTS DATE : 5-23

WGI
5640 Dillard Drive, Suite 200
Cary, NC 27518
LICENSURE NO. C-4434

NORTH CAROLINA PROFESSIONAL SEAL 18056 ENGINEER JOHN A. BATTS
2/6/2024 | 6:40 AM PST

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. I-2513AA/AB
BUNCOMBE COUNTY
STATION: 59+50.00 -Y-

SHEET 1 OF 7 EXTENDS CULVERT #100320

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 7 FT. X 9 FT. CONCRETE BOX CULVERT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C1-1
1			3			TOTAL SHEETS
2			4			7

2/6/2024 9:25:46 AM c:\pwworking\aecom_ds21_na_2020\d0131607\I-2513AA_SMU_CU1_100320.dgn