

LOCATION SKETCH

GRADE POINT ELEVATION @ STA. 660+64.00-L- = 2997.58

BED ELEVATION @ STA. 660+64.00-L- = 2965.17

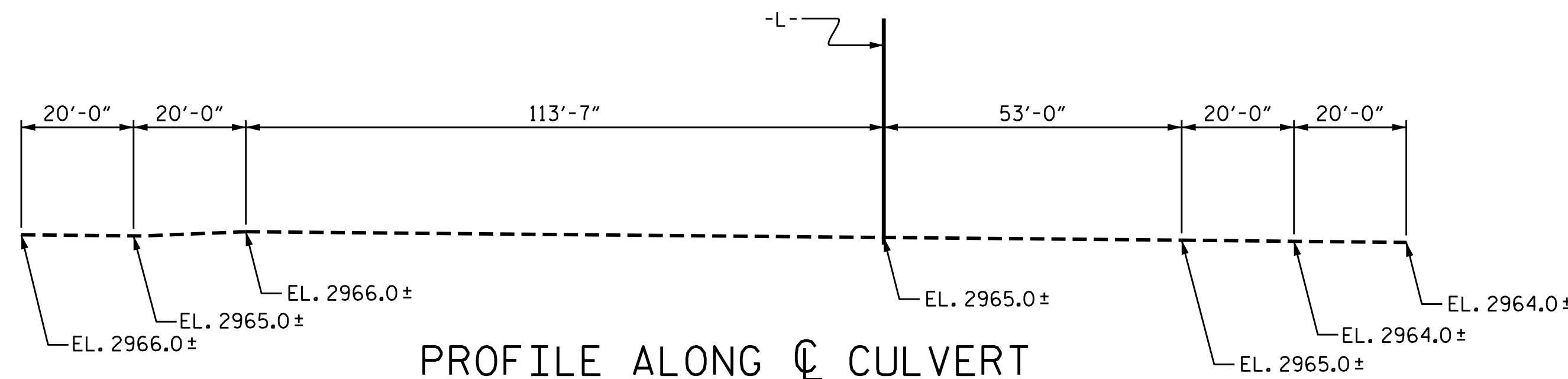
ROADWAY SLOPES 2:1

HYDRAULIC DATA

DESIGN DISCHARGE	1748 C.F.S.
FREQUENCY OF DESIGN FLOOD	50 YEARS
DESIGN HIGH WATER ELEVATION	2974.50
DRAINAGE AREA	4.7 SQ. MI.
BASE DISCHARGE (Q100)	2127 C.F.S.
BASE HIGH WATER ELEVATION	2976.10

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	< 2127 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	< 100 YEARS
OVERTOPPING FLOOD ELEVATION	2975.50



PROFILE ALONG CULVERT

DRAWN BY : H. T. BARBOUR DATE : 6-3-14
 CHECKED BY : B. N. GRADY DATE : 8-14
 DESIGN ENGINEER OF RECORD: RONG DEAN DATE : 11-14

NOTES

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

DESIGN FILL-----MAX. 25.11, MIN. 24.88

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:

STAGE I

1. WING 1 FOOTING AND FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS, CURTAIN WALL AND FLOOR SLAB EDGE BEAM TO CONSTRUCTION JOINT OF STAGE I.
2. THE REMAINING PORTIONS OF THE WALLS AND WING 1 FULL HEIGHT.

STAGE II

3. WING 2 FOOTING, FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS, THE REMAINING PORTIONS OF THE CURTAIN WALL, FLOOR SLAB EDGE BEAM AND WALLS AND WING 2 FULL HEIGHT.
4. THE ROOF SLAB, HEADWALLS AND EDGE BEAMS FOR STAGE I AND STAGE II.

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.

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 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.

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 WILL BE PAID FOR BY THE CONTRACTOR.

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

THE EXISTING 10' X 8' TRIPLE BARREL REINFORCED CONCRETE BOX CULVERT LOCATED AT THE PROPOSED SITE SHALL BE RETAINED AND EXTENDED TO THE LIMITS SHOWN.

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 BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSIONS. 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.

ONE PERMITTED CONSTRUCTION JOINT WILL BE ALLOWED IN THE END CURTAIN WALL.

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 COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT A BEVEL ADDITION IS TO BE ADDED TO THE INLET END OF THE EXISTING CULVERT. FOR DETAILS OF THE BEVEL ADDITION, SEE SHEET 5 OF 6.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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.

FOR DOWELS IN BEVEL ADDITION, NO FIELD TESTING REQUIRED.

DETAILED DRAWINGS FOR FALSEWORK AND FORMS FOR THIS CULVERT EXTENSION SHALL BE SUBMITTED. SEE SHEET SN.

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
BARREL @ 4.873 CY/FT	370.4 C.Y.
WINGS ETC.	17.8 C.Y.
BEVEL ADDITION	4.5 C.Y.
TOTAL	392.7 C.Y.

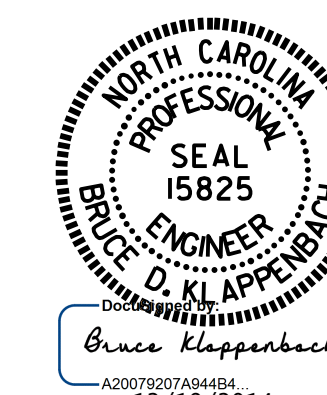
REINFORCING STEEL	
BARREL	42838 LBS.
WINGS ETC.	774 LBS.
BEVEL ADDITION	233 LBS.
TOTAL	43845 LBS.

CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	177 TONS

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. R-2915D
ASHE COUNTY
 STATION: 660+64.00-L-

SHEET 1 OF 6 EXTENDS CULVERT C511



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**BARREL STANDARD
 TRIPLE 10 FT. X 8 FT.
 CONCRETE BOX CULVERT**

AUGUST		1989	
REVISIONS			
NO.	BY:	DATE:	NO.
1			3
2			4
SHEET NO.			C-1
TOTAL SHEETS			6