

HYDRAULICS DATA

DESIGN DISCHARGE = 650 CFS
 FREQUENCY OF DESIGN FLOOD = 50 YRS.
 DESIGN HIGH WATER ELEVATION = 677.500
 DRAINAGE AREA = 1.22 SQ MI
 BASIC DISCHARGE (Q100) = 800 CFS
 BASIC HIGH WATER ELEVATION = 679.600

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 1242 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 100 YRS+
 OVERTOPPING FLOOD ELEVATION = 687.700

ROADWAY DATA

GRADE POINT ELEV. @ STATION 254+73.03 -LRT- = 687.160
 BED ELEV. @ STATION 254+73.03 -LRT- = 668.070
 ROADWAY SLOPES 2:1

ASSUMED LIVE LOAD ----- HS20-44 OR ALTERNATE LOADING.
 DESIGN FILL----- 12.13'
 FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET SN.
 3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:

1. STAGE 1 FLOOR SLAB INCLUDING FOOTING FOR OUTLET WING WITH 4" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF STAGE 1 WALLS AND WING TO FULL HEIGHT.
3. STAGE 2 FLOOR SLAB INCLUDING FOOTING FOR OUTLET WING WITH 4" OF VERTICAL WALLS.
4. THE REMAINING PORTIONS OF STAGE 2 WALL AND WINGS TO 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 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 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.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

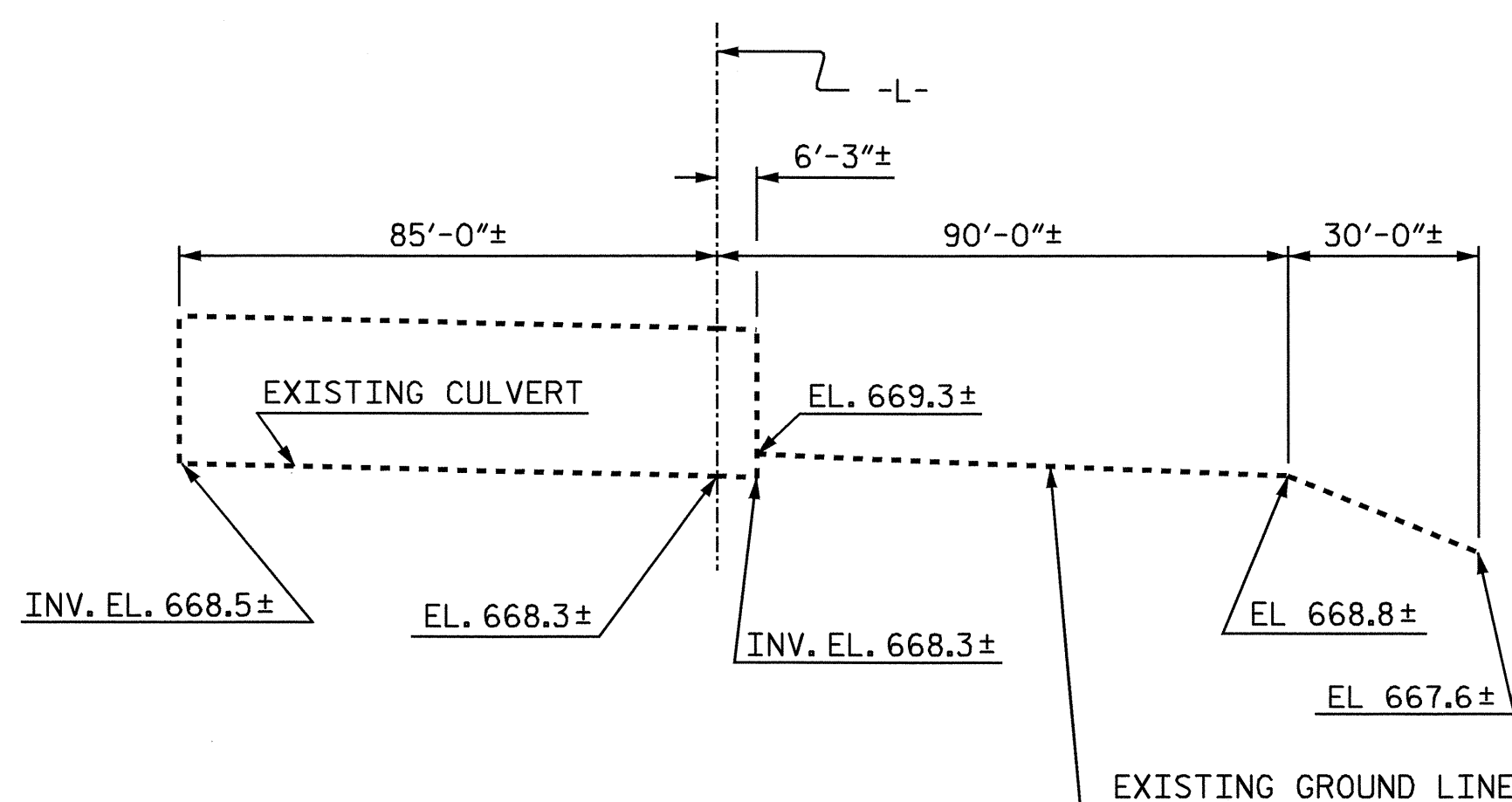
IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSIONS. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE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

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

FOR CONSTRUCTION SEQUENCE, SEE EROSION 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 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.

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.



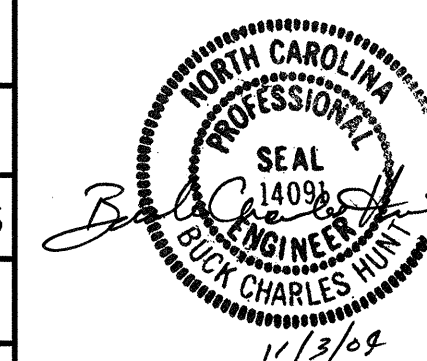
PROFILE ALONG CULVERT

STRUCTURE QUANTITIES (RIGHT EXTENSION)		STRUCTURE QUANTITIES (HEADWALL & WINGWALL EXTENSION)	
CLASS A CONCRETE		CLASS A CONCRETE	
STAGE 1		HEADWALL	1.9 C.Y.
BARREL @ 0.522 CY/FT	46.5 C.Y.	WINGS	1.6 C.Y.
WING ETC.	3.7 C.Y.	TOTAL	3.5 C.Y.
TOTAL	50.2 C.Y.		
STAGE 2		REINFORCING STEEL	
BARREL @ 0.579 CY/FT	51.5 C.Y.	TOTAL	196 LBS.
WING ETC.	7.5 C.Y.		
TOTAL	59.0 C.Y.	PLAIN CLASS I RIP RAP	10 TONS
REINFORCING STEEL		FILTER FABRIC FOR DRAINAGE	14.8 S.Y.
BARREL	14030 LBS.		
WINGS ETC.	660 LBS.		
TOTAL	14690 LBS.		
FOUNDATION COND. MAT'L	75 TONS		
CULVERT EXCAVATION	LUMP SUM		
TOTAL STRUCTURE QUANTITIES			
CLASS A CONCRETE	112.7 C.Y.	PLAIN CLASS I RIP RAP	10 TONS
REINFORCING STEEL	14886 LBS.	FILTER FABRIC FOR DRAINAGE	14.8 S.Y.
FOUNDATION COND. MAT'L	75 TONS	CULVERT EXCAVATION	LUMP SUM

PROJECT NO. R-2911D
ROWAN COUNTY
 STATION: 254+51.60 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 DOUBLE 5 FT. X 7 FT.
 EXTENSION
 RCBC
 60° SKEW



REVISIONS						SHEET NO. C - 1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 13
2			4			

DRAWN BY: A. CHAN DATE: 2/16/04
 CHECKED BY: S.H. SOCKWELL DATE: 7/13/04