

BENCHMARK: BM #2 -L- STA. 20+01.81 (148.96'LT) R/R SPIKE IN BASE OF 14" POPLAR @ EL. 670.14'

F.A. PROJECT NO. BRZ-2331(2)

NOTES

- ASSUMED LIVE LOAD -----HS20-44 OR ALTERNATE LOADING.
 DESIGN FILL-----16.34'
 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. INLET WING 2, OUTLET WING 1 FOOTINGS AND FLOOR SLAB INCLUDING 4 INCHES VERTICAL EXTERIOR AND INTERIOR WALLS FOR BARREL 1
 2. THE REMAINING PORTIONS OF BARREL 1 WALL AND INLET WING 2 & OUTLET WING 1 TO FULL HEIGHT.
 STAGE II :
 1. INLET WING 1 & OUTLET WING 2 FOOTINGS AND FLOOR SLAB INCLUDING 4 INCHES VERTICAL EXTERIOR WALL FOR BARRELS 2 & 3.
 2. THE REMAINING PORTIONS OF BARRELS 2 & 3 WALL AND INLET WING 1 & OUTLET WING 2 TO FULL HEIGHT FOLLOWED BY ROOF SLAB FOR BARRELS 1, 2 & 3 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.

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.

THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 40'-6" WITH TIMBER DECK ON I-BEAMS WITH A CLEAR ROADWAY WIDTH OF 22'-0", SUPPORTED BY TIMBER CAP AND TIMBER PILE END BENTS LOCATED AT THE PLACE OF THE PROPOSED CULVERT SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT, SEE SPECIAL PROVISION.

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.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

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.

BURY INVERT AT BOTH ENDS OF CULVERT APPROXIMATELY 1'-0" BELOW NATURAL BED ELEVATION.

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.

ROADWAY DATA

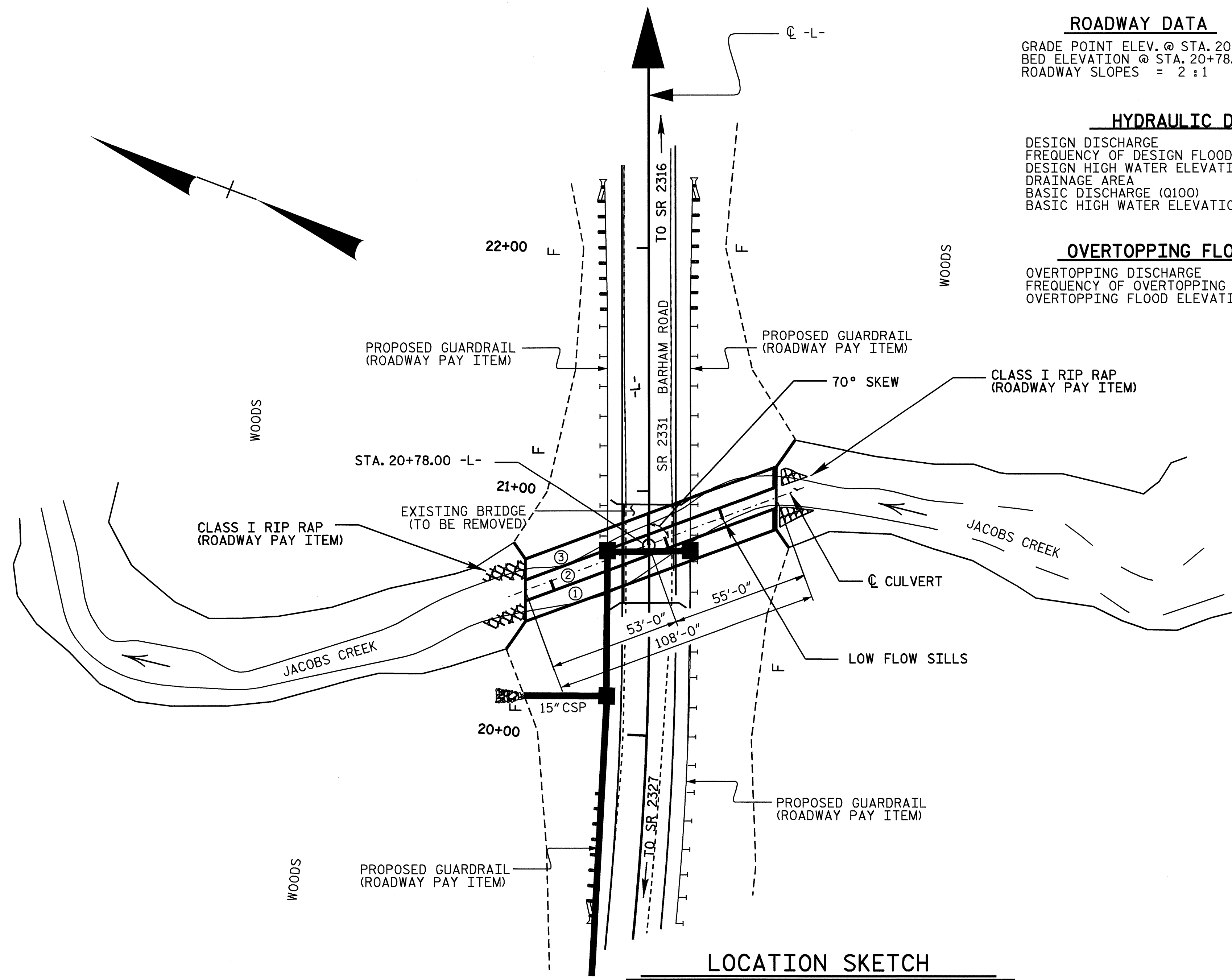
GRADE POINT ELEV. @ STA. 20+78.00 -L- = 683.880
 BED ELEVATION @ STA. 20+78.00 -L- = 659.800
 ROADWAY SLOPES = 2 : 1

HYDRAULIC DATA

DESIGN DISCHARGE = 1000 c.f.s.
 FREQUENCY OF DESIGN FLOOD = 25 yr.
 DESIGN HIGH WATER ELEVATION = 668.100
 DRAINAGE AREA = 3.30 +/- sq. mile
 BASIC DISCHARGE (Q100) = 1600 c.f.s.
 BASIC HIGH WATER ELEVATION = 669.600

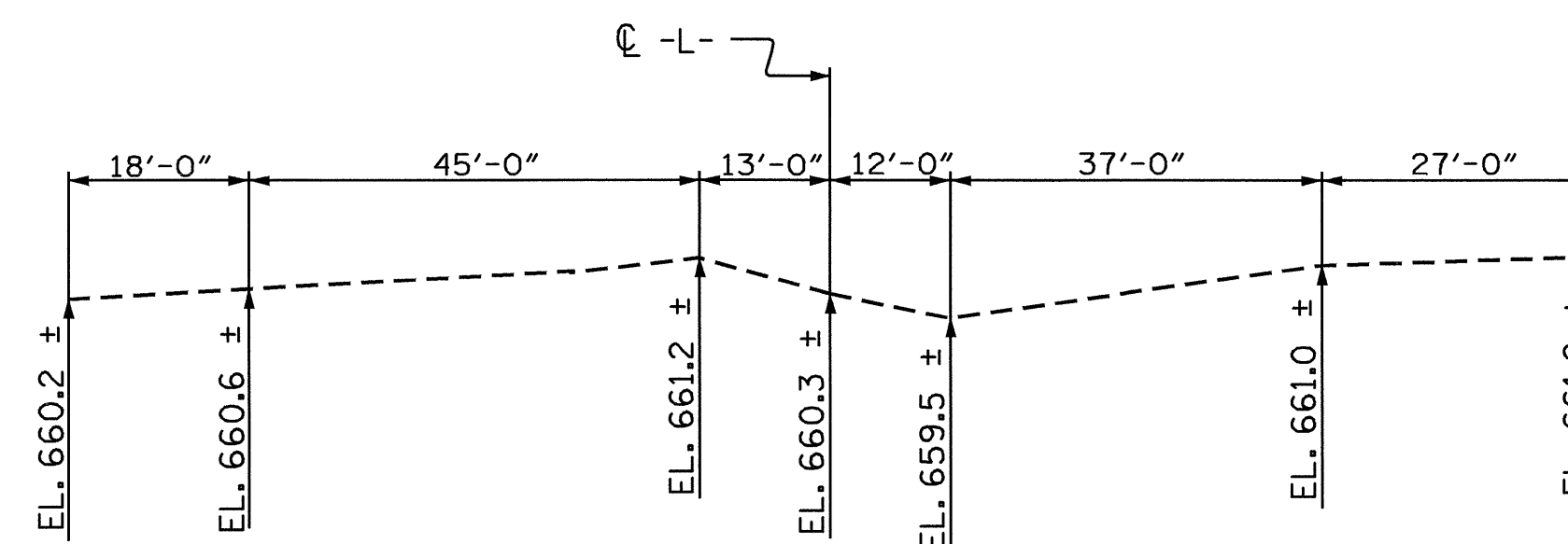
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 4000 c.f.s.
 FREQUENCY OF OVERTOPPING FLOOD = 500 yr. +
 OVERTOPPING FLOOD ELEVATION = 684.600



LOCATION SKETCH

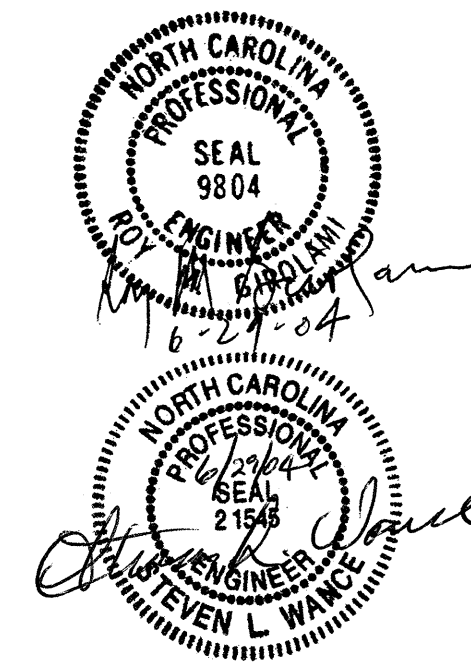
FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS



PROFILE ALONG CULVERT

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
BARRELS 1, 2, & 3	300.1 C.Y.
WINGS ETC.	28.3 C.Y.
TOTAL	328.4 C.Y.
REINFORCING STEEL	
BARRELS 1, 2, & 3	50,727 LBS.
WINGS ETC.	1547 LBS.
TOTAL	52,274 LBS.
CULVERT EXCAVATION -----	LUMP SUM
FOUNDATION COND. MATERIAL	205.0 TONS
REMOVAL OF EXISTING STRUCTURE -	LUMP SUM



PROJECT NO. B-3695
ROCKINGHAM COUNTY
 STATION: 20+78.00 -L-

SHEET 1 OF 7 REPLACES BRIDGE No. 34

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

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

ASSEMBLED BY : <u>SWANcPE</u> DATE : <u>FEB. 2004</u>	SPECIAL
CHECKED BY : <u>N.Q. TRAN</u> DATE : <u>FEB. 2004</u>	
DRAWN BY : <u>R.W. WRIGHT</u> DATE : <u>OCT. 1989</u>	STANDARD
CHECKED BY : <u>C.R.K.</u> DATE : <u>OCT. 1989</u>	

ADDED NOV.1990