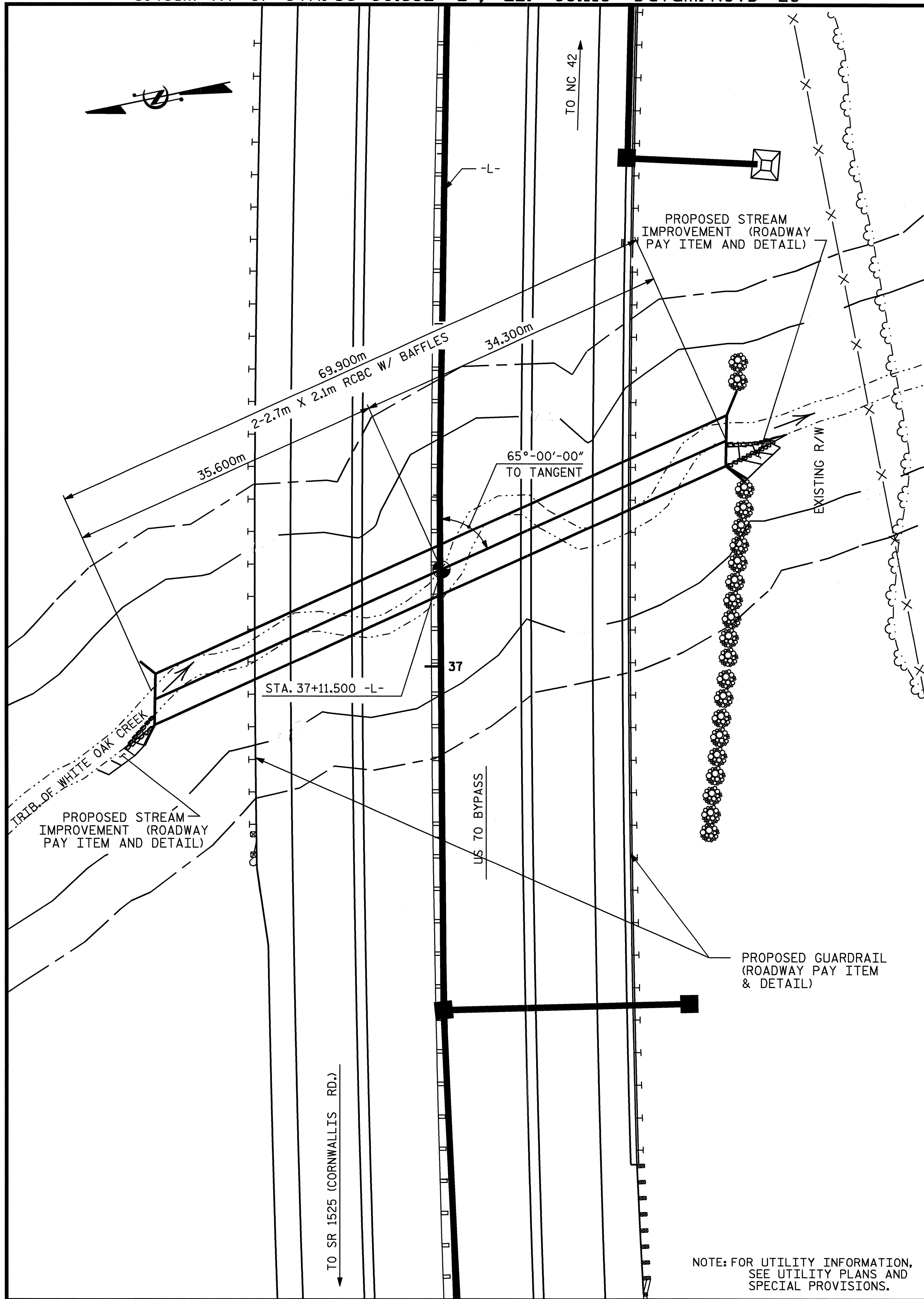


BENCH MARK #728: REBAR AND CAP,  
8.461m RT OF STA. 36+60.532 -L-, EL.= 68.118 Datum: NGVD '29



LOCATION SKETCH

DRAWN BY: KEITH D. LAYNE DATE: 11-18-04  
CHECKED BY: J. P. ADAMS DATE: 12/04

23-MAR-2005 14:22  
C:\temp\R2552A\1.DGN  
cyarbrough

NOTE: FOR UTILITY INFORMATION,  
SEE UTILITY PLANS AND  
SPECIAL PROVISIONS.

ROADWAY DATA

GRADE POINT EL. @ STA. 37+11.500 -L- = 67.789  
BED ELEVATION @ STA. 37+11.500 -L- = 60.870  
ROADWAY SLOPES = 2:1

HYDROGRAPHIC DATA

DESIGN DISCHARGE = 20.9 m<sup>3</sup>  
FREQUENCY OF DESIGN FLOOD = 50Yrs.  
DESIGN HIGH WATER ELEVATION = 63.57  
DRAINAGE AREA = 20 Ha  
BASIC DISCHARGE (Q100) = 24.3 m<sup>3</sup>  
BASIC HIGH WATER ELEVATION = 63.75

OVERTOPPING FLOOD DATA

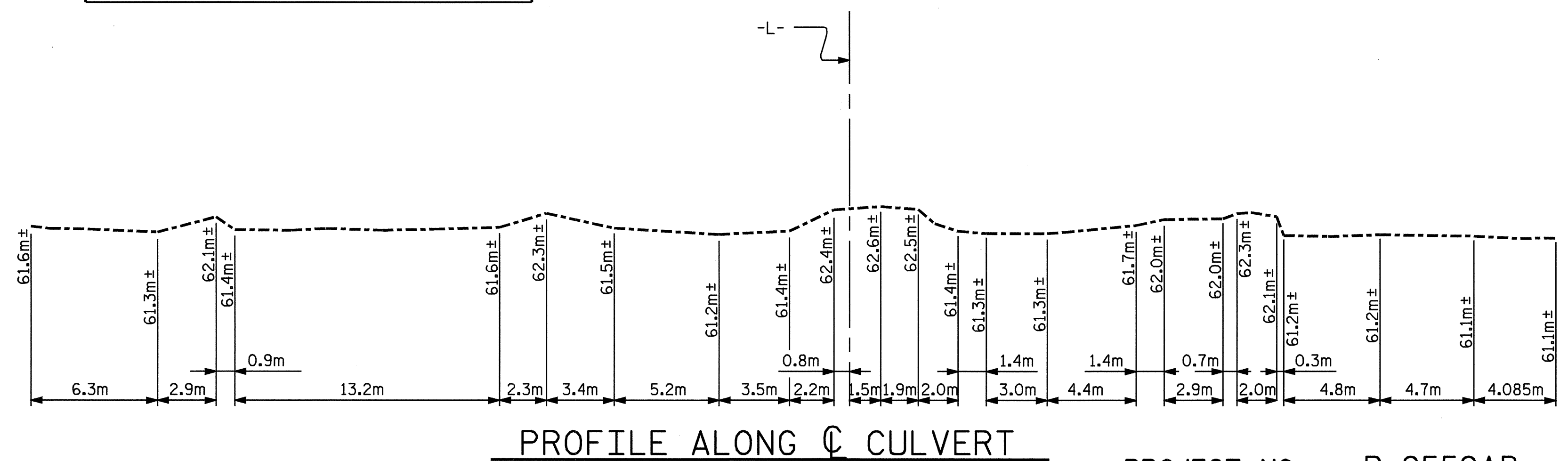
OVERTOPPING DISCHARGE = 59.4 m<sup>3</sup>  
FREQUENCY OF OVERTOPPING FLOOD = N/A  
OVERTOPPING FLOOD ELEVATION = 65.11

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE (CU. METERS)	
BARREL @ 5.35 Cu.m/m =	374.0
WINGS, HEADWALLS, ETC. =	16.1
SILLS =	5.4
TOTAL =	395.5
REINFORCING STEEL (kg)	
BARREL =	32349
4 WINGS ETC. =	577
TOTAL =	32926
CULVERT EXCAVATION =	LUMP SUM
FOUNDATION COND. MAT'L =	285 METRIC TONS
PLAIN RIP RAP CLASS B =	70 METRIC TONS

NOTES

- ALL ELEVATIONS ARE SHOWN IN METERS.
- ALL DIMENSIONS ARE SHOWN IN MILLIMETERS UNLESS OTHERWISE NOTED.
- ASSUMED LIVE LOAD -----MS18 OR ALTERNATE LOADING.
- DESIGN FILL----- 5.33m
- FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.
- 76mm Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
  1. WING FOOTINGS AND FLOOR SLAB INCLUDING 90mm 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 21.0m. LOCATION OF 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.
- NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.



PROJECT NO. R-2552AB  
JOHNSTON COUNTY  
STATION 37+11.500 -L-

SHEET 1 OF 4



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

DOUBLE 2.7m X 2.1m  
CONCRETE BOX CULVERT  
65° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			8

