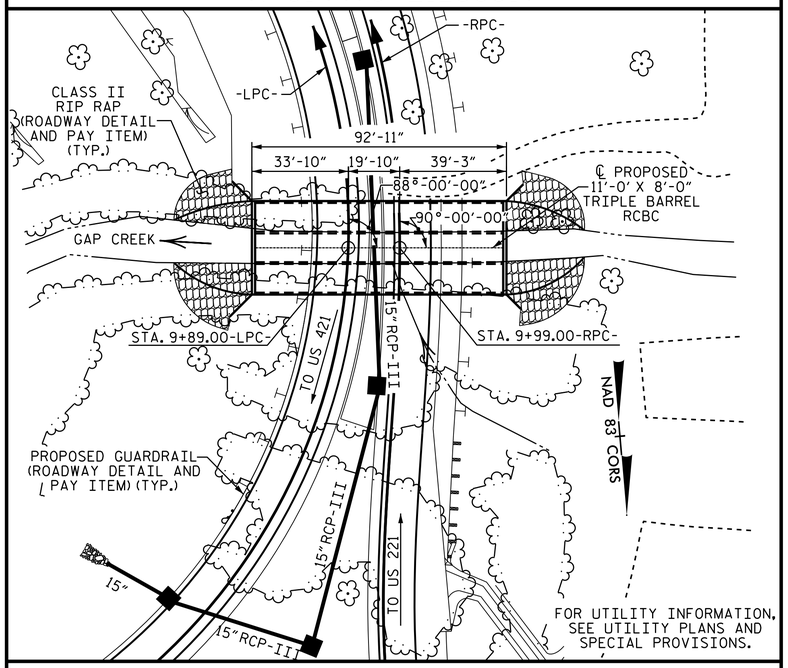
B. M. #1: CHISLED SQUARE ON TOP OF HEADWALL
STA. 13+20.00-L-, 287 FT. LEFT, EL. 2986.63
N 914470 E1259917



LOCATION SKETCH

ROADWAY DATA

GRADE POINT EL. @ STA. 9+89-LPC- = 2993.64
BED EL. @ STA. 9+89-LPC- --------- = 2980.11

GRADE POINT EL. @ STA. 9+99-RPC- = 2994.82
BED EL. @ STA. 9+99-RPC- --------- = 2980.17

ROADWAY SLOPES ---------- = 2:1

HYDRAULIC DATA

DESIGN DISCHARGE ---------- = 900 C.F.S.

FREQUENCY OF DESIGN FLOOD ----- = 50 YEARS

DESIGN HIGH WATER ELEVATION --- = 2987.10

DRAINAGE AREA ---------- = 2.35 SQ. MI.

BASE DISCHARGE (Q100) ---------- = 1100 C.F.S.

BASE HIGH WATER ELEVATION ------ = 2987.66

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE ---------- = 1130 C.F.S.

FREQUENCY OF OVERTOPPING FLOOD -= 100+ YEARS

OVERTOPPING FLOOD ELEVATION ----= 2989.20

NOTES

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

DESIGN FILL----------MAX. = 7.93 FT., MIN. = 3.6 FT.

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:

1. WING FOOTINGS, FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS AND CURTAIN WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB, HEADWALL AND SILLS.

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.

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.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.

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.

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.

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.

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.

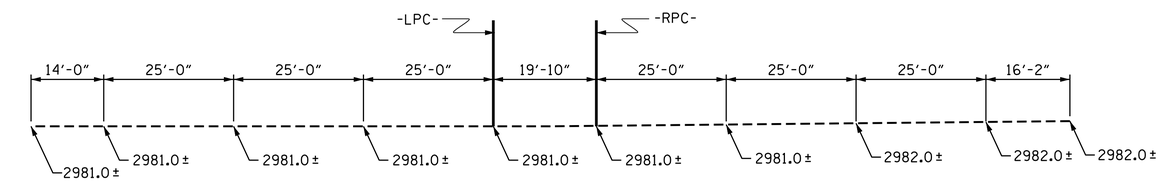
FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

F. A. PROJECT No.: STP-0221 (39)

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
BARREL @ 3.389 CY/FT	314.9 C.Y.
WING ETC.	28.7 C.Y.
SILLS	3.3 C.Y.
TOTAL	346.9 C.Y.
REINFORCING STEEL	
BARREL	39863 LBS.
WINGS ETC.	1453 LBS.
TOTAL	41316.0 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MAT'L.	260 TONS

I HEREBY CERTIFY THESE PLANS ARE THE AS BUILT PLANS



PROFILE ALONG ℄ CULVERT

NORTH CAROLINA PROFESSIONAL SEAL 14855 ENGINEER DOUGLAS R. CALHOUN
DocuSigned by: Douglas R. Calhoun 430196F9D5E0429...
7/23/2015

NORTH CAROLINA PROFESSIONAL SEAL 17230 ENGINEER WAEL S. ARAFAT
DocuSigned by: Wael Arafat 4139C12A32AB406...
7/23/2015

PROJECT NO. R-2915A
WATAUGA/ASHE COUNTY
STATION: 9+89.00-LPC-/
9+99.00-RPC-

SHEET 1 OF 6 CULVERT NO. 387

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 11 FT. X 8 FT. CONCRETE BOX CULVERT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-10
1			3			TOTAL SHEETS
2			4			20

STR. #3

DRAWN BY : H. T. BARBOUR DATE : 2-12-15
CHECKED BY : M. K. BEARD DATE : 3-16-15
DESIGN ENGINEER OF RECORD: J. P. McCARTHA DATE : 4-15

23-JUL-2015 12:45
R:\Structures\FinalPlans\STR#3\R2915A_SD_CU_02.dgn
warafat