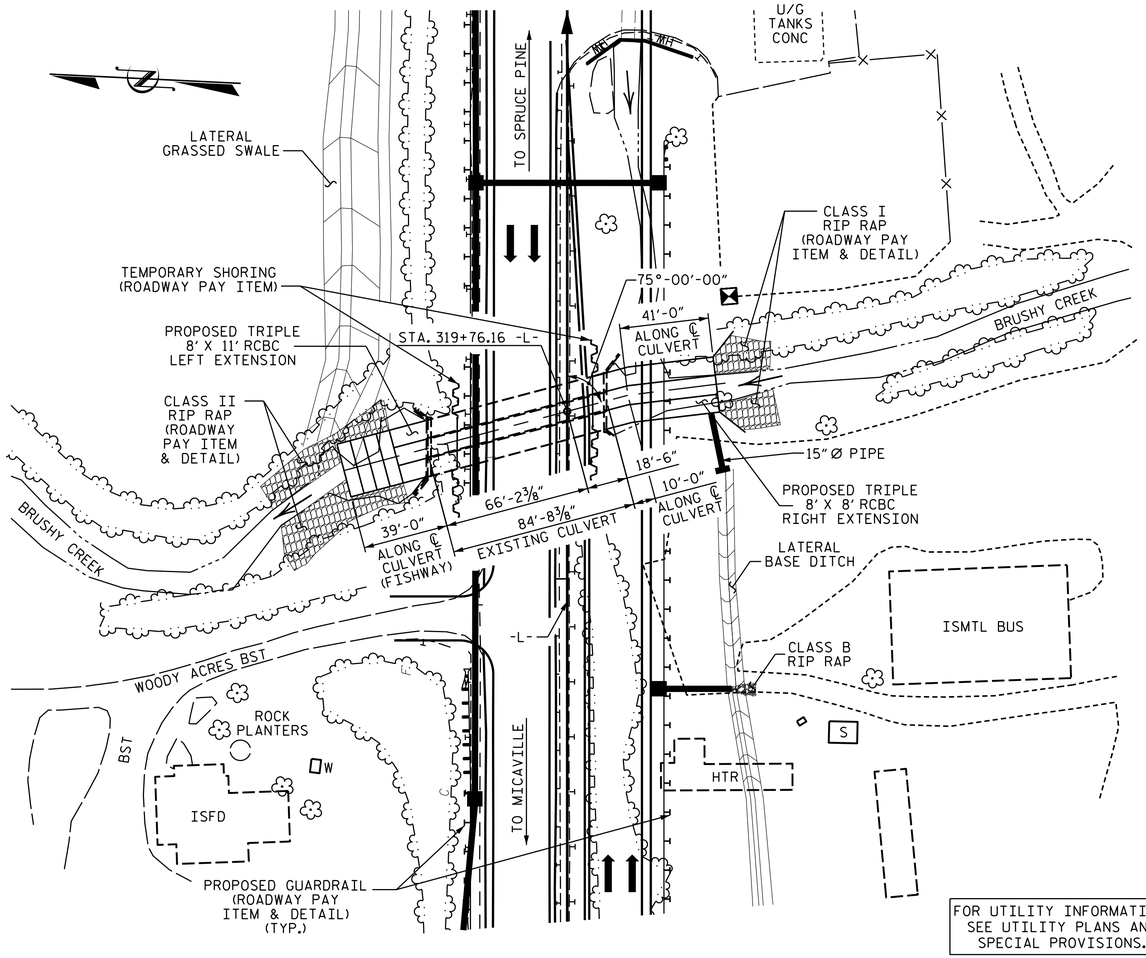
BENCHMARK #23: SPIKE SET IN LIGHT POLE, STA. 320+28.48 -L-, 73.62' RT., ELEV=2628.74



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE	= 940 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS.
DESIGN HIGH WATER ELEVATION	= 2617.18
DRAINAGE AREA	= 2.03 SQ. MI.
BASE DISCHARGE (Q100)	= 1160 CFS
BASE HIGH WATER ELEVATION	= 2618.02

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1780+ CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500 YRS. +
OVERTOPPING FLOOD ELEVATION	= 2626.15

GRADE DATA

GRADE POINT ELEVATION @ STA. 319+76.16 -L-	= 2633.13
BED ELEVATION @ STA. 319+76.16 -L-	= 2611.34
ROADWAY FILL SLOPES	= 2:1

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
LEFT EXTENSION	118.7	C.Y.
RIGHT EXTENSION	145.2	C.Y.
TOTAL	263.9	C.Y.
REINFORCING STEEL		
LEFT EXTENSION	11,982	LBS.
RIGHT EXTENSION	18,084	LBS.
TOTAL	30,066	LBS.
FOUNDATION CONDITIONING MATERIAL		
LEFT EXTENSION	27	TONS
RIGHT EXTENSION	96	TONS
TOTAL	123	TONS
CULVERT EXCAVATION	LUMP	SUM

NOTES

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

DESIGN FILL---------- 13.7 FT. (LEFT), 13.9 FT. (RIGHT)

FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.

3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:

1. PHASE I WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF PHASE I VERTICAL WALLS.
2. THE REMAINING PORTIONS OF PHASE I WALLS AND PHASE I WINGS FULL HEIGHT.
3. PHASE II WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF PHASE II VERTICAL WALLS.
4. THE REMAINING PORTIONS OF PHASE II WALLS AND PHASE II WINGS FULL HEIGHT.
5. 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.

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.

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 SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

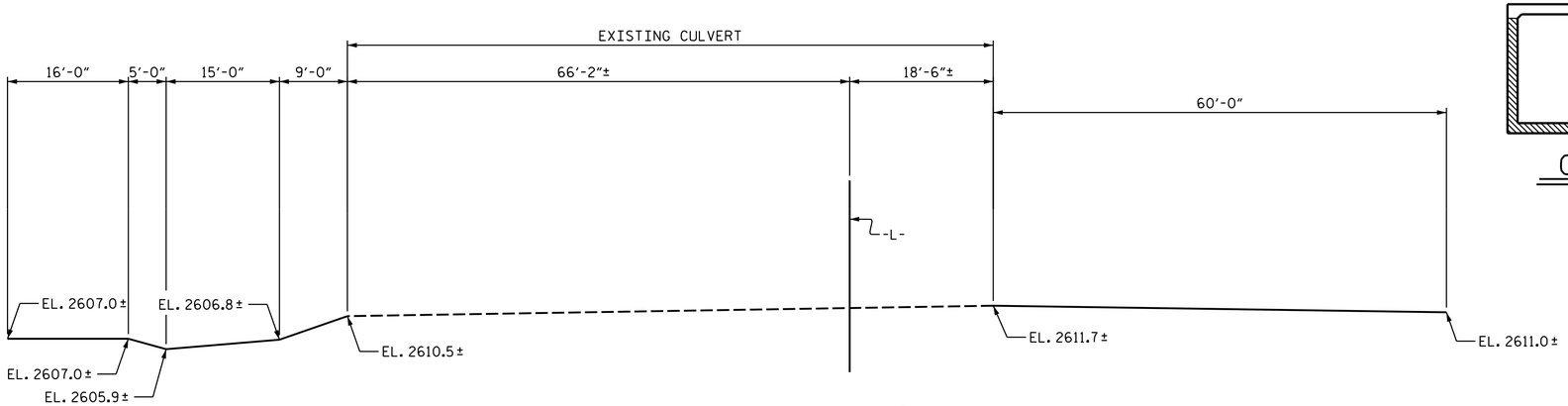
FOR CULVERT DIVERSION DETAILS, SEE EROSION CONTROL PLANS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

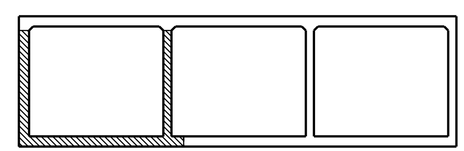
FOR LIMITS OF TEMPORARY SHORING, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING, SEE ROADWAY PLANS.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAILED 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.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



PROFILE ALONG ℄ CULVERT



CONSTRUCTION PHASING

(LOOKING DOWNSTREAM)

PHASE I CONSTRUCTION

PHASE II CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 13014 ENGINEER QUANG H. NGUYEN
8/27/2014 Quang H. Nguyen

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL C. CHEEK, JR.
8/27/2014 Marshall C. Cheek, Jr.

PROJECT NO. R-2519B

MITCHELL COUNTY

STATION: 319+76.16 -L-

SHEET 1 OF 13 CULVERT C241

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 8 FT. X 11 FT.
LEFT EXTENSION
TRIPLE 8 FT. X 8 FT.
RIGHT EXTENSION
CONCRETE BOX CULVERT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-41
1			3			TOTAL SHEETS
2			4			87

DRAWN BY : M.A. LEBLANC DATE : 8/13
CHECKED BY : B.C. HUNT DATE : 10/13

STR#10