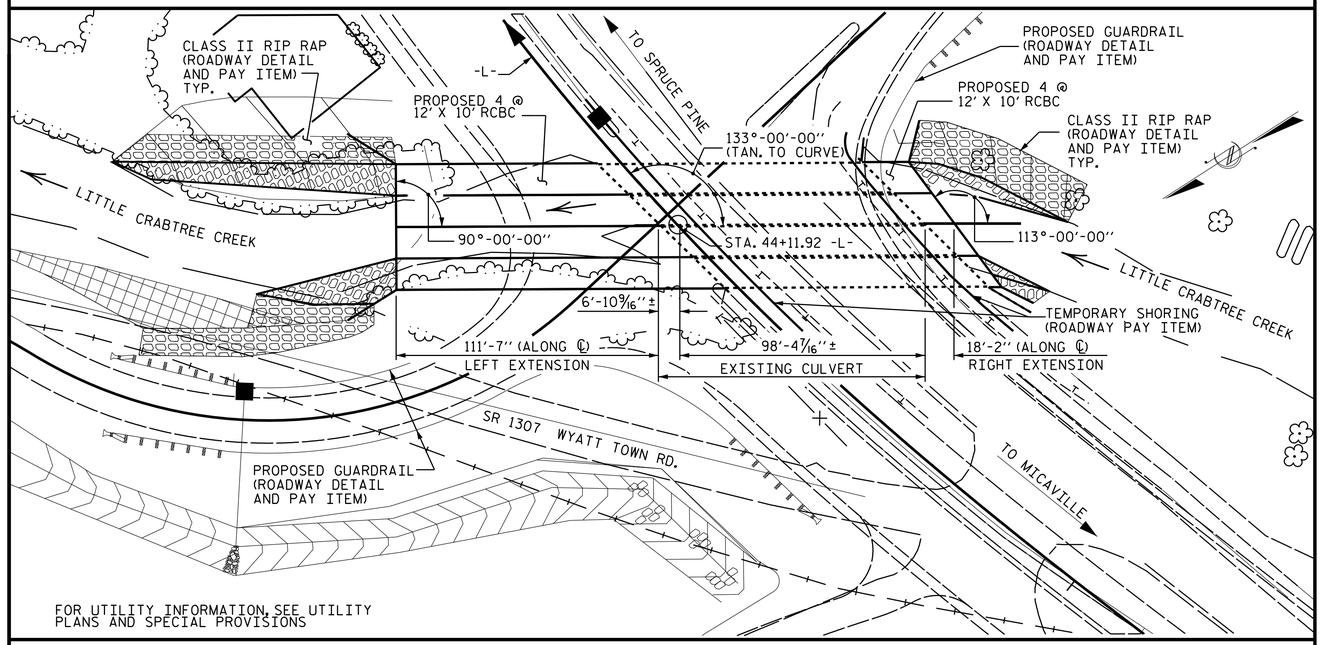
BENCHMARK #3: SPIKE SET IN 36" SYCAMORE, 109.88' RT. OF STA. 41+01.70 -L-, ELEV. 2449.61



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE = 4685 CFS

FREQUENCY OF DESIGN FLOOD = 50 YEARS

DESIGN HIGH WATER ELEVATION = 2450.1

DRAINAGE AREA = 21.7 SQ. MI.

BASE DISCHARGE (Q100) = 5800 CFS

BASE HIGH WATER ELEVATION = 2452.3

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE_____ 7400 CFS

FREQUENCY OF OVERTOPPING FLOOD_____ 100 YRS. +

OVERTOPPING FLOOD ELEVATION_____ 2454.4

ROADWAY DATA

GRADE POINT ELEV. @ STATION 44+11.92 -L- = 2457.21

BED ELEV. @ STATION 44+11.92 -L = 2439.13

ROADWAY SLOPES = 2 : 1

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
LEFT EXTENSION	739.8 C.Y.
RIGHT EXTENSION	137.5 C.Y.
TOTAL	877.3 C.Y.
REINFORCING STEEL	
LEFT EXTENSION	82,656 LBS.
RIGHT EXTENSION	18,996 LBS.
TOTAL	101,652 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MAT'L.	
LEFT EXTENSION	405 TONS
RIGHT EXTENSION	66 TONS
TOTAL	471 TONS

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

DESIGN FILL LEFT EXTENSION----------13.4 FT.
DESIGN FILL RIGHT EXTENSION----------9.3 FT.

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 SHEETS.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL. SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70'-0". LOCATION OF THE JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

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

AT THE CONTRACTOR'S OPTION HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL 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 CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

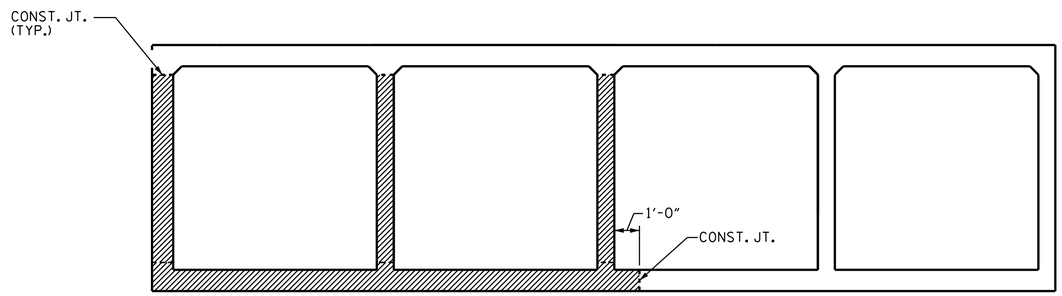
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, 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.

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.

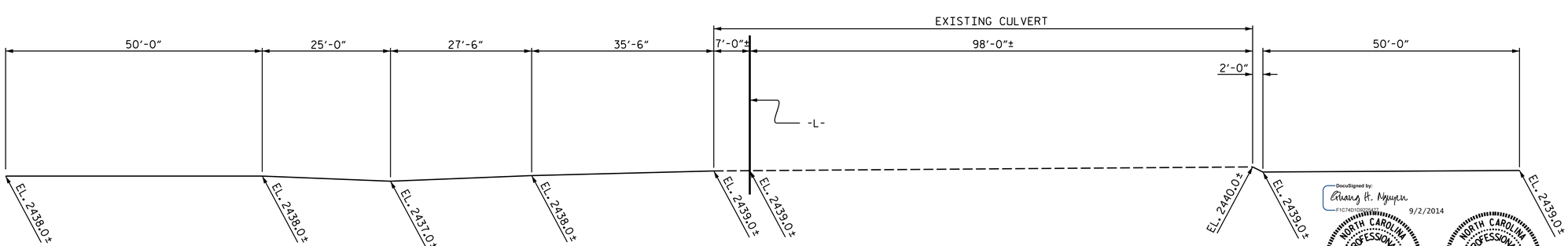


CONSTRUCTION PHASING

(LOOKING UPSTREAM)

PHASE I

PHASE II



PROFILE ALONG ℄ CULVERT

DocuSigned by: Quang H. Nguyen F1C74D1100000000 9/2/2014

NORTH CAROLINA PROFESSIONAL SEAL 13014 ENGINEER QUANG H. NGUYEN

DocuSigned by: Marshall Cureck Jr. 6549D6EBAA384D8... 8/27/2014

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL CURECK, JR.

PROJECT NO. R-2519B

YANCEY COUNTY

STATION: 44+11.92 -L-

SHEET 1 OF 17 CULVERT NO. C-42

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

QUADRUPLE 12 FT. X 10 FT. CONCRETE BOX CULVERT LEFT & RIGHT EXTENSIONS

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

DRAWN BY : M. POOLE/DAH DATE : 8/13

CHECKED BY : D. A. GLADDEN DATE : 10/13

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

STR. #7