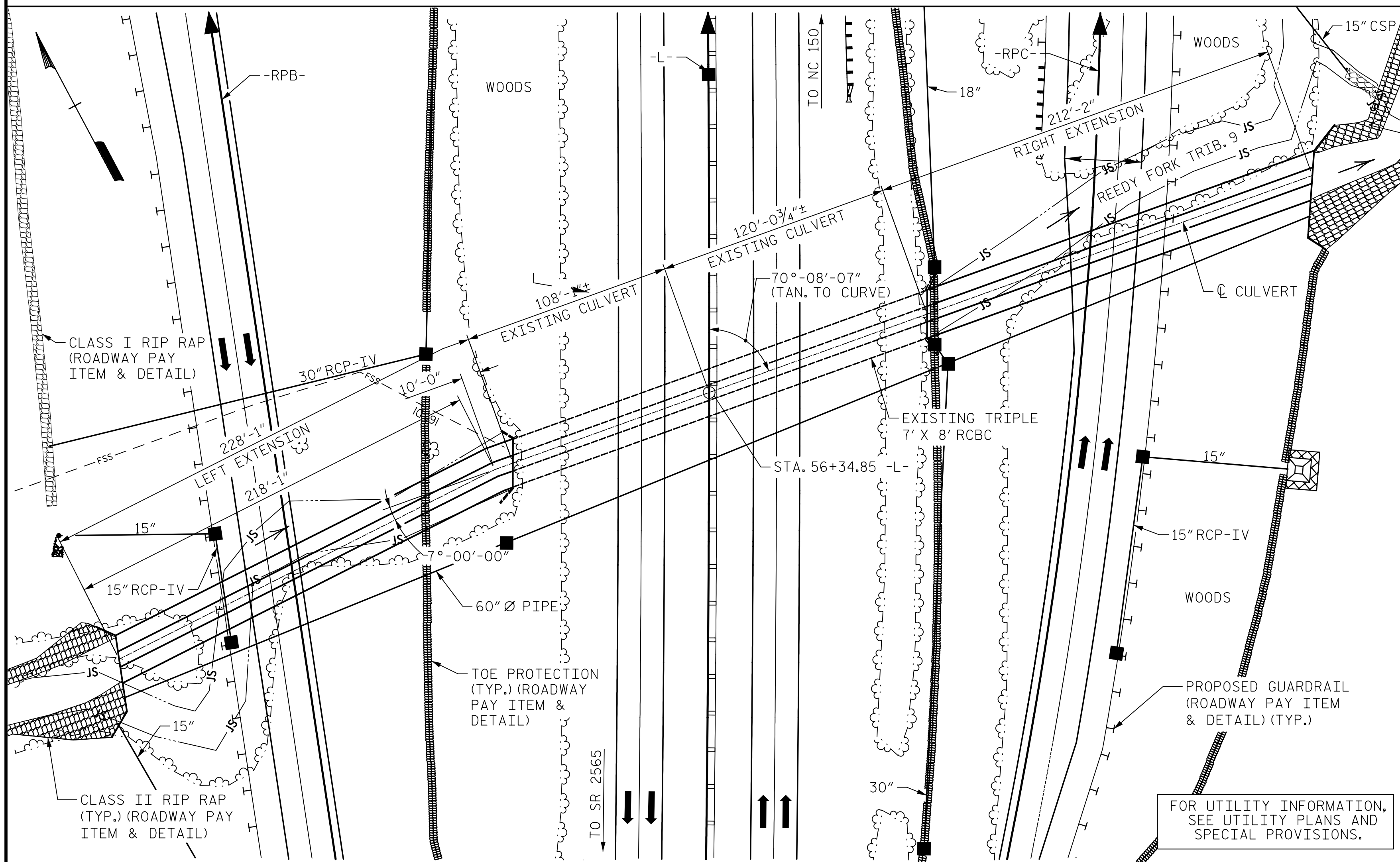


BM #3: R/R SPIKE IN 32" Ø GUM TREE, 162.15' RT OF STA. 48+52.28 -L-, EL. 747.31



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE = 1,700 C.F.S.
 FREQUENCY OF DESIGN FLOOD = 50 YRS.
 DESIGN HIGH WATER ELEVATION = 691.4'
 DRAINAGE AREA = 3.16 SQ. MI.
 BASE DISCHARGE (Q100) = 2,100 C.F.S.
 BASE HIGH WATER ELEVATION = 695.1

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 3,870 C.F.S.
 FREQUENCY OF OVERTOPPING FLOOD = 500+ YRS.
 OVERTOPPING FLOOD ELEVATION = 720.2'

ROADWAY DATA

G.P. ELEV. @ STA. 56+34.85 -L- (-L- SB) = 719.37
 BED ELEV. @ STA. 56+34.85 -L- = 681.7
 ROADWAY FILL SLOPES= 2:1

NOTES

- ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
 MAX. DESIGN FILL (RIGHT EXTENSION) ----- 36.90 FT.
 MAX. DESIGN FILL (LEFT EXTENSION) ----- 30.22 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 CULVERT EXTENSIONS TO BE POURED IN THE FOLLOWING ORDER:
 PHASE I:
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF PHASE I WALLS.
 PHASE II:
 3. FLOOR SLAB INCLUDING 4" OF VERTICAL WALL.
 4. THE REMAINING PORTION OF PHASE II WALL FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALL.
 CONCRETE IN 60" Ø PIPE WINGS, FOOTINGS, AND HEADWALL SHALL BE POURED IN THE FOLLOWING ORDER:
 1. WINGS AND HEADWALL FOOTING UP TO CONSTRUCTION JOINT.
 2. REMAINING PORTION OF WINGS AND HEADWALL FULL HEIGHT.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
 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.
 AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALLS 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.

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.

EXCAVATE A MINIMUM OF 1 FOOT BELOW CULVERT BEARING ELEVATION AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL PER SECTION 414 OF THE STANDARD SPECIFICATIONS.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

UNDERCUT ANY SOFT/LOOSE ALLUVIAL SOILS THAT MAY BE ENCOUNTERED BENEATH THE BOTTOM OF THE FOUNDATION CONDITIONING MATERIAL. BACKFILL UNDERCUT AREAS WITH FOUNDATION CONDITIONING MATERIAL (SELECT MATERIAL CLASS VI; NO. 57 STONE). INCLUDE 200 CUBIC YARDS OF UNDERCUT AND 300 TONS OF FOUNDATION CONDITIONING MATERIAL AS CONTINGENCY ITEMS IN THE CONTRACT FOR LEFT CULVERT EXTENSION AND 185 CUBIC YARDS OF UNDERCUT AND 275 TONS OF FOUNDATION CONDITIONING MATERIAL FOR RIGHT CULVERT EXTENSION. THE COST OF THE CONTINGENCY QUANTITY OF FOUNDATION CONDITIONING MATERIAL SHALL BE PAID FOR AT THE CONTRACT UNIT BID PRICE. THE COST OF THE CONTINGENCY UNDERCUT SHALL BE CONSIDERED INCIDENTAL TO THE CULVERT EXCAVATION LUMP SUM.

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

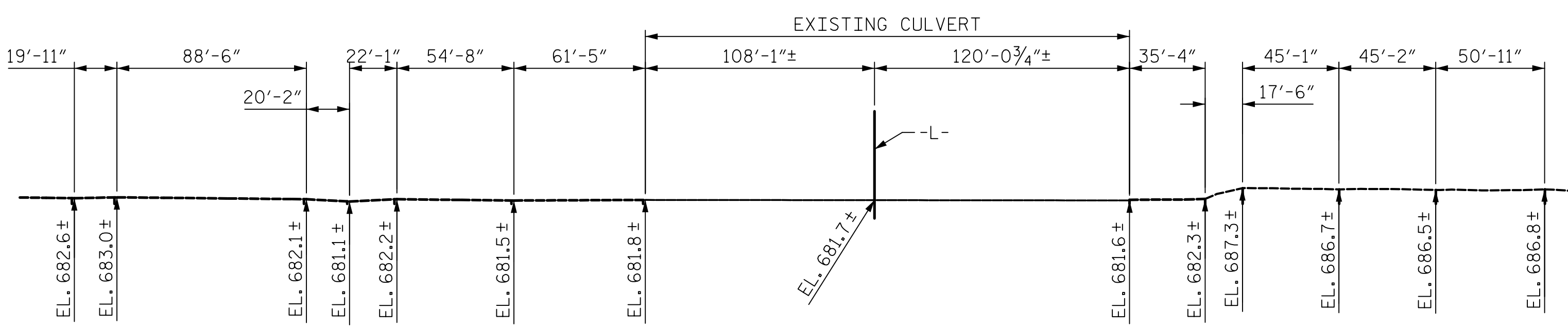
INSTALL TYPE V GEOTEXTILE AT THE BOTTOM OF EXCAVATION PRIOR TO PLACING FOUNDATION CONDITIONING MATERIAL. THE GEOTEXTILE SHOULD BE PLACED AT THE BOTTOM OF THE EXCAVATION AND WRAPPED UP THE SIDE WALLS OF THE EXCAVATION. INCLUDE 1,200 SQ. YDS. OF TYPE V GEOTEXTILE IN THE CONTRACT FOR LEFT CULVERT EXTENSION AND 1,100 SQ. YDS FOR RIGHT CULVERT EXTENSION. THE COST OF TYPE V GEOTEXTILE SHALL BE CONSIDERED INCIDENTAL TO FOUNDATION CONDITIONING MATERIAL.

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 GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
 FOR CULVERT DIVERSION DETAILS AND PAY ITEMS, SEE EROSION CONTROL PLANS.
 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
 FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



PROFILE ALONG CULVERT

TOTAL STRUCTURE QUANTITIES		
CULVERT EXCAVATION		LUMP SUM
FOUNDATION COND. MAT'L		
LEFT EXTENSION	451	TONS
RIGHT EXTENSION	419	TONS
TOTAL	870	TONS
CLASS A CONCRETE		
LEFT EXTENSION	853.2	C.Y.
RIGHT EXTENSION	877.9	C.Y.
TOTAL	1,731.1	C.Y.
REINFORCING STEEL		
LEFT EXTENSION	102,286	LBS.
RIGHT EXTENSION	96,215	LBS.
TOTAL	198,501	LBS.
CONCRETE REPAIRS	1.2	CU. FT.
SHOTCRETE REPAIRS	11.5	CU. FT.
EPOXY RESIN INJECTION	420.0	LIN. FT.

Mead & Hunt
 111 E. Hargett Street
 Suite 300
 Raleigh, NC 27601
 919-714-8670
 meadhunt.com
 NC License No. F-1235



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. R-4707
GUILFORD COUNTY
 STATION: 56+34.85 -L-
 EXTENDS CULVERT NO. 355

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 TRIPLE 7 FT. x 8 FT. CONCRETE BOX CULVERT
 LEFT EXTENSION AND
 RIGHT EXTENSION WITH
 60" Ø PIPE

DRAWN BY : J.S. HOBSON DATE : 04/12/19
 CHECKED BY : J.A. LEE DATE : 04/24/19
 DESIGN ENGINEER OF RECORD : J.S. HOBSON DATE : 04/26/19

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C1-01
1			3			TOTAL SHEETS
2			4			24