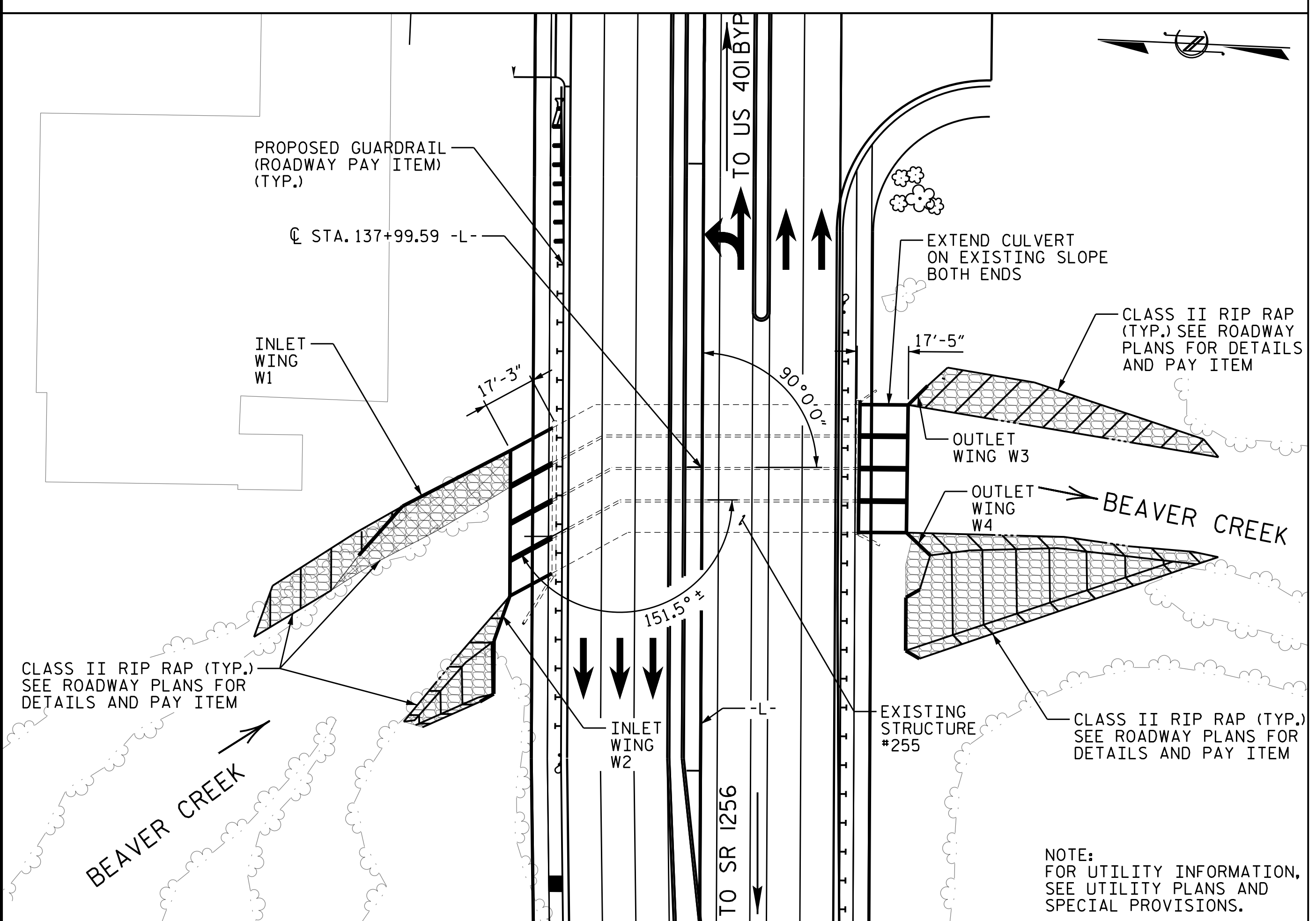
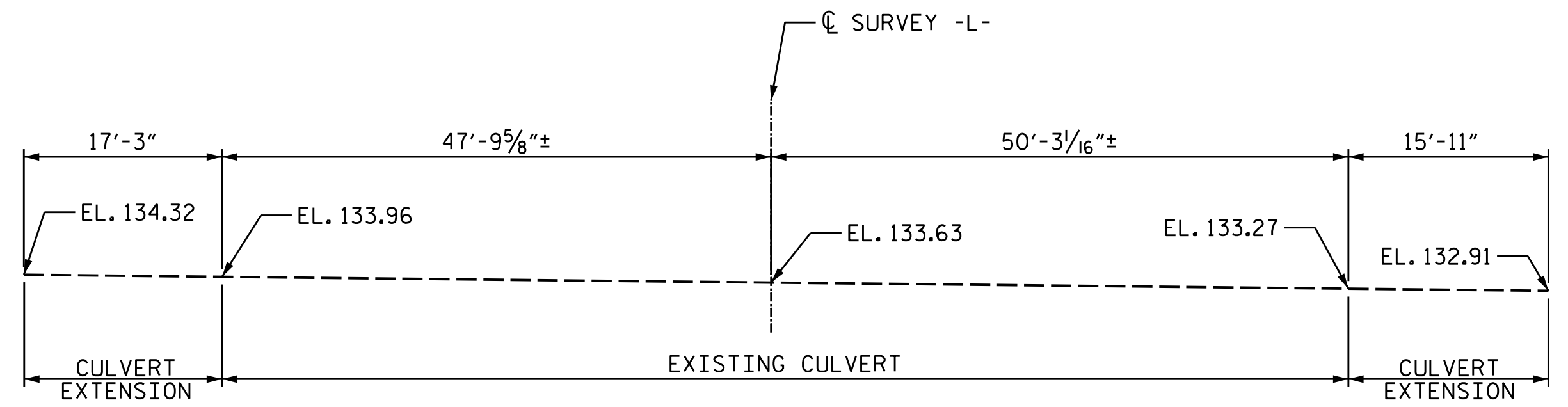


BM7 ELEVATION = 192.81, N 470648 E 2005724, -L- STATION 128+40.00, 366 RIGHT BENCH TIE IN POWER POLE



LOCATION SKETCH



PROFILE ALONG CL CULVERT

KCA 4800 SIX FORKS ROAD SUITE 120
 KISINGER CAMPO & ASSOCIATES RALEIGH, NC 27609
 (919) 882-7839

DRAWN BY : DIEGO A. AGUIRRE DATE : 5-18-18
 CHECKED BY : JACOB H. DUKE DATE : 5-22-18
 DESIGN ENGINEER OF RECORD : JACOB H. DUKE DATE : 5-25-18

SPlice CHART	
BAR SIZE	SPlice LENGTH
#4	1'-11"
#5	2'-4"
#6	2'-9"

HYDROGRAPHIC DATA	
GRADE POINT ELEV. @ STA. 137+99.59 -L-	= 150.07
BED ELEV. @ STA. 137+99.59 -L-	= 133.58
ROADWAY SLOPES	= 3:1
DESIGN DISCHARGE	= 4720 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS
DESIGN HIGH WATER ELEVATION	= 150.0'
DRAINAGE AREA	= 25 SQ. MI.
BASE DISCHARGE (Q100)	= 5250 CFS
BASE HIGH WATER ELEVATION	= 150.7'

OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	= 4540 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 50 +/- YRS
OVERTOPPING FLOOD ELEVATION	= 150.0'
OVERTOPPING LOCATION	= SAG AT STA. 136+32 -L- CL

CULVERT EXTENSION - TOTAL QUANTITIES	
CLASS A CONCRETE	
PHASE I	79.2 C.Y.
PHASE II	82.4 C.Y.
PHASE III	57.6 C.Y.
TOTAL	219.2 C.Y.

REINFORCING STEEL	
PHASE I	11,067 LBS.
PHASE II	9,728 LBS.
PHASE III	8,404 LBS.
TOTAL	29,199 LBS.

FOUNDATION CONDITIONING MATERIAL	
PHASE I	62 TONS
PHASE II	55 TONS
PHASE III	- TONS
TOTAL	117 TONS

CULVERT EXCAVATION	LUMP SUM
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CHANNEL EXCAVATION	LUMP SUM
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REMOVAL OF EXISTING STRUCTURE	LUMP SUM
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ANCHORED SHEET PILE WALL	
PHASE I	2,363 SQ. FT.
TOTAL	2,363 SQ. FT.

CONCRETE VALLEY GUTTER	
PHASE III	64.0 LIN. FT.
TOTAL	64.0 LIN. FT.

CHAIN LINK FENCE, 72" FABRIC	
PHASE III	199 LIN. FT.
TOTAL	199 LIN. FT.

METAL LINE POSTS FOR 72" CHAIN LINK FENCE	
PHASE III	21 EA.
TOTAL	21 EA.

METAL TERMINAL POSTS FOR 72" CHAIN LINK FENCE	
PHASE III	13 EA.
TOTAL	13 EA.

NOTES:

- ASSUMED LIVE LOAD HL-93.
- INLET DESIGN FILL IS 2.9 FEET.
- OUTLET DESIGN FILL IS 4.0 FEET.
- FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTES SHEET.
- INSTALL INLET WING W1 (ANCHORED SHEET PILE WALL) PRIOR TO POURING CONCRETE IN CULVERTS.
- CONCRETE IN CULVERTS TO BE CAST IN THE FOLLOWING ORDER:
 - PHASE I:
 - OUTLET WING W3 FOOTING AND FLOOR SLAB OF BARRELS #1 AND #2, INCLUDING 4" OF EXTERIOR WALL OF BARREL #1, AND INTERIOR WALLS OF BARREL #2.
 - THE REMAINING PORTIONS OF OUTLET WING W3 WALL, EXTERIOR WALL OF BARREL #1, AND INTERIOR WALLS OF BARREL #2.
 - PHASE II:
 - INLET WING W2 FOOTING AND FLOOR SLAB OF BARRELS #3 AND #4, INCLUDING 4" OF EXTERIOR WALL OF BARREL #4, AND INTERIOR WALL OF BARREL #4.
 - THE REMAINING PORTIONS OF INLET WING W2 WALL, EXTERIOR WALL OF BARREL #4, AND INTERIOR WALL OF BARREL #4.
 - PHASE III:
 - INLET AND OUTLET ROOF SLAB AND HEADWALLS ACROSS ALL BARRELS.
- 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 PROVIDED AS 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.

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

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 AMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING WALLS COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINTS.

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 EXTENSIONS 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.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR CONSTRUCTION SEQUENCE, SEE SHEETS C-2 THRU C-4.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR ANCHORED SHEET PILE WALL, SEE SPECIAL PROVISIONS.

PROJECT NO. U-4405
 CUMBERLAND COUNTY
 STATION: 137+99.59 -L-

SHEET 1 OF 18 CULVERT No. 255

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



DocuSigned by:
 Jacob H. Duke
 6/13/2018 12:14:58 PM PDT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CULVERT EXTENSION
 QUADRUPLE 10 FT. X 12 FT.
 CONCRETE BOX CULVERT
 LEFT AND RIGHT EXTENSION
 TITLE SHEET

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C1-1
1			3			TOTAL SHEETS
2			4			18

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED