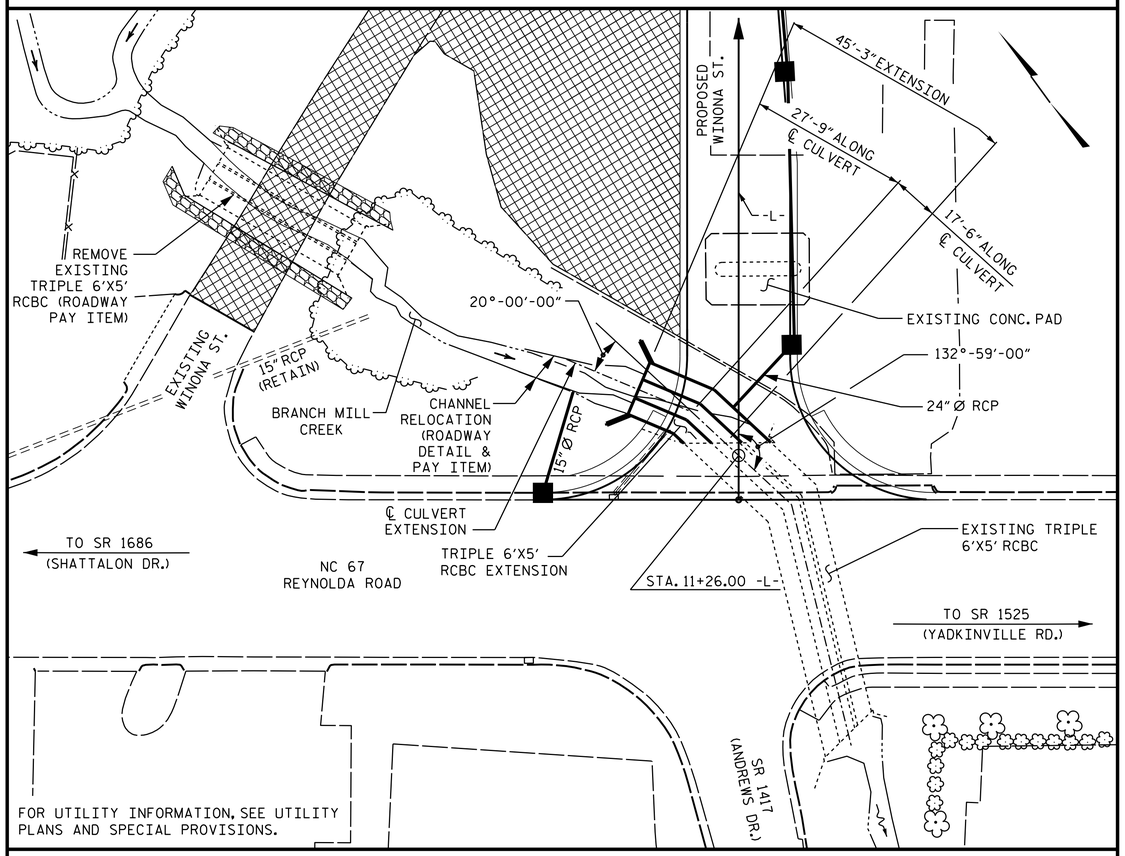
F. A. PROJECT NO. HSIP-0067(5)

BENCH MARK: BL-5 STATION 16+02.25 20.33' RIGHT, EL. 804.45



LOCATION SKETCH

ROADWAY DATA

GRADE PT. ELEV. @ STA. 11+26.00 -L-	=795.11
BED ELEV. @ STA. 11+26.00 -L-	=786.76
ROADWAY SLOPES	=2:1

HYDRAULIC DATA

DESIGN DISCHARGE	=480 C.F.S.
FREQUENCY OF DESIGN FLOOD	=10 YEARS
DESIGN HIGH WATER ELEVATION	=794.9
DRAINAGE AREA	=0.7 SQ. MI.
BASE DISCHARGE (Q100)	=900 C.F.S.
BASE HIGH WATER ELEVATION	=797.65

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=480+ C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	=10+ YEARS
OVERTOPPING HIGH WATER ELEVATION	=794.9+

NOTES

ASSUMED LIVE LOAD ---------- HS-20

DESIGN FILL---------- 2.29 FT. (MIN.)
3.17 FT. (MAX.)

FOR OTHER DESIGN DATA AND NOTES, SEE SHEET SN.

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

CONCRETE IN CULVERT TO BE POURED IN THE FOLLOWING ORDER:

1. WING FOOTING, FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS, AND BOTTOM EDGE BEAM IN STAGE I.
2. THE REMAINING PORTIONS OF THE WALLS, SILL AND WING FULL HEIGHT, IN STAGE I.
3. WING FOOTING AND FLOOR SLAB INCLUDING 4" OF VERTICAL WALL, AND BOTTOM EDGE BEAM IN STAGE II.
4. THE REMAINING PORTIONS OF THE WALL, SILL AND WING FULL HEIGHT IN STAGE II.
5. THE ENTIRE ROOF SLAB, HEADWALL AND TOP EDGE BEAM.

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.

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.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

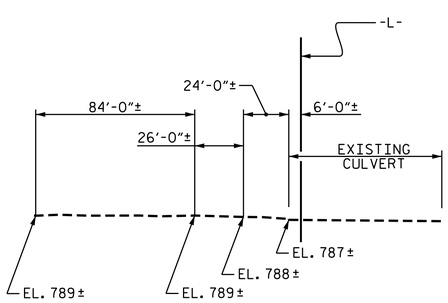
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

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.



PROFILE ALONG ℄ CULVERT

TOTAL STRUCTURE QUANTITIES

	TOTAL	
CLASS A CONCRETE		
BARREL @ 1.9430 CY/FT	87.9	C.Y.
WING, ETC.	11.1	C.Y.
TOTALS	99.0	C.Y.
REINFORCING STEEL		
BARREL	15,012	LBS.
WING, ETC.	344	LBS.
TOTALS	15,356	LBS.
FOUNDATION CONDITIONING MATERIAL	68.0	TONS
CULVERT EXCAVATION	LUMP SUM	

PROJECT NO. W-5209F
FORSYTH COUNTY
STATION: 11+26.00 -L-

SHEET 1 OF 6 WIDENING OF BRIDGE NO. 551

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 6 FT. X 5 FT. CONCRETE BOX CULVERT EXTENSION

132°-59'-00" SKEW

NORTH CAROLINA PROFESSIONAL SEAL 21638 ENGINEER LAURA E. SUTTON
DocuSigned by: Laura E. Sutton AE35E3E6727640E...
11/19/2014

NORTH CAROLINA PROFESSIONAL SEAL 10730 ENGINEER D. ANDRÉ DAVENPORT, JR.
DocuSigned by: D. André Davenport, Jr. 895DC284F664495...
11/19/2014

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			C-1
1			3					TOTAL SHEETS
2			4					6

DRAWN BY : J. P. MCCARTHA DATE : 1-27-14
CHECKED BY : R.P. PATEL DATE : 2-7-14
DESIGN ENGINEER OF RECORD: J. P. MCCARTHA DATE : 3-19-14

19-NOV-2014 14:11
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dadavenport