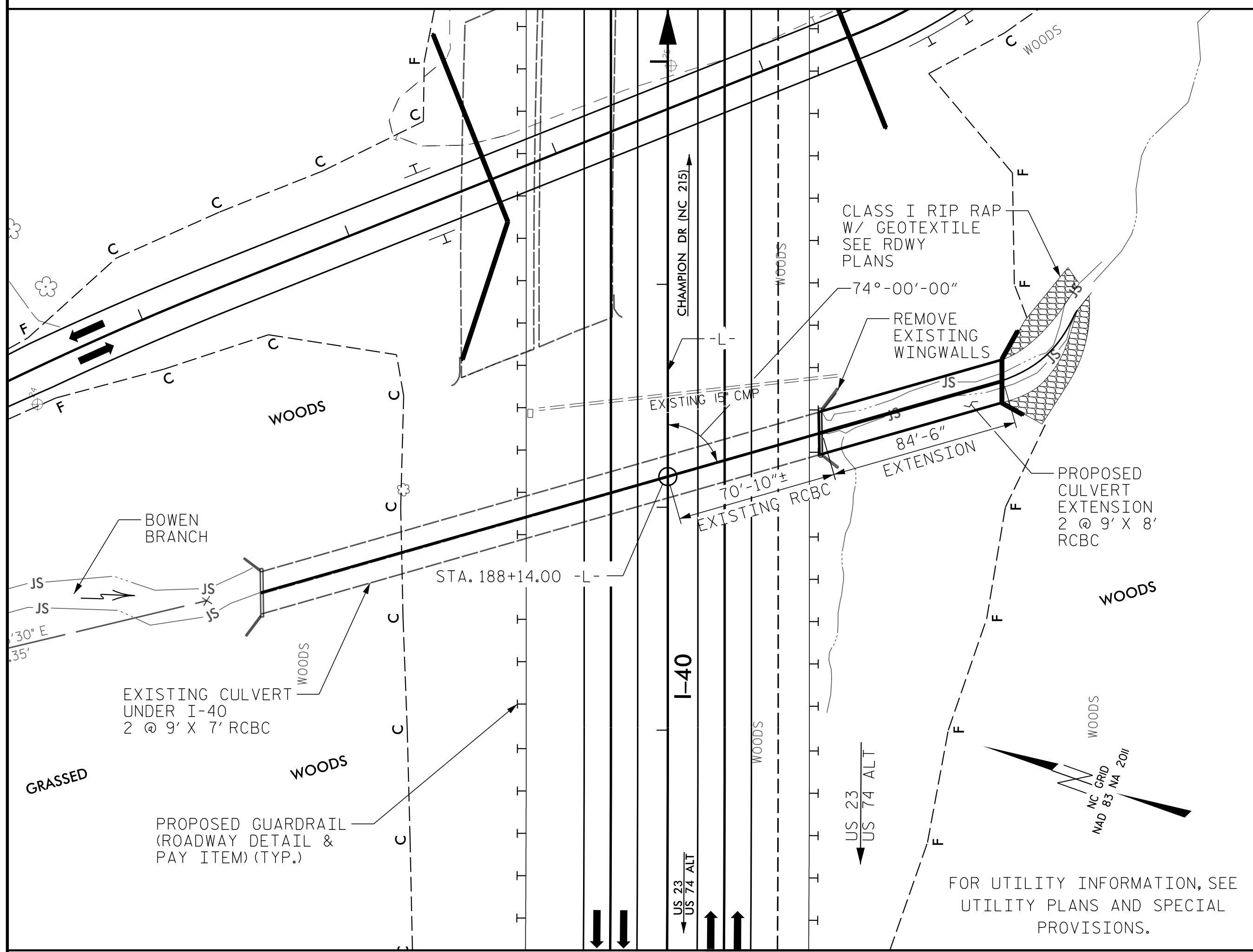


BM #2, SPIKE SET IN FENCE POST, STA. 10+94 -Y1-, 20.4' LT, EL. 2626.87 N678530.5050 E 848302.9860



LOCATION SKETCH

ROADWAY DATA

GRADE POINT ELEV. @ STA 188+14.00 -L- EB	= 2653.86
BED ELEV. @ STATION 188+14.00 -L-	= 2603.88
ROADWAY SLOPES	= 2:1

HYDRAULIC DATA

DESIGN DISCHARGE	= 750 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 2614.6
DRAINAGE AREA	= 1.87 SQ. MI.
BASE DISCHARGE (Q100)	= 900 CFS
BASE HIGH WATER ELEVATION	= 2615.4

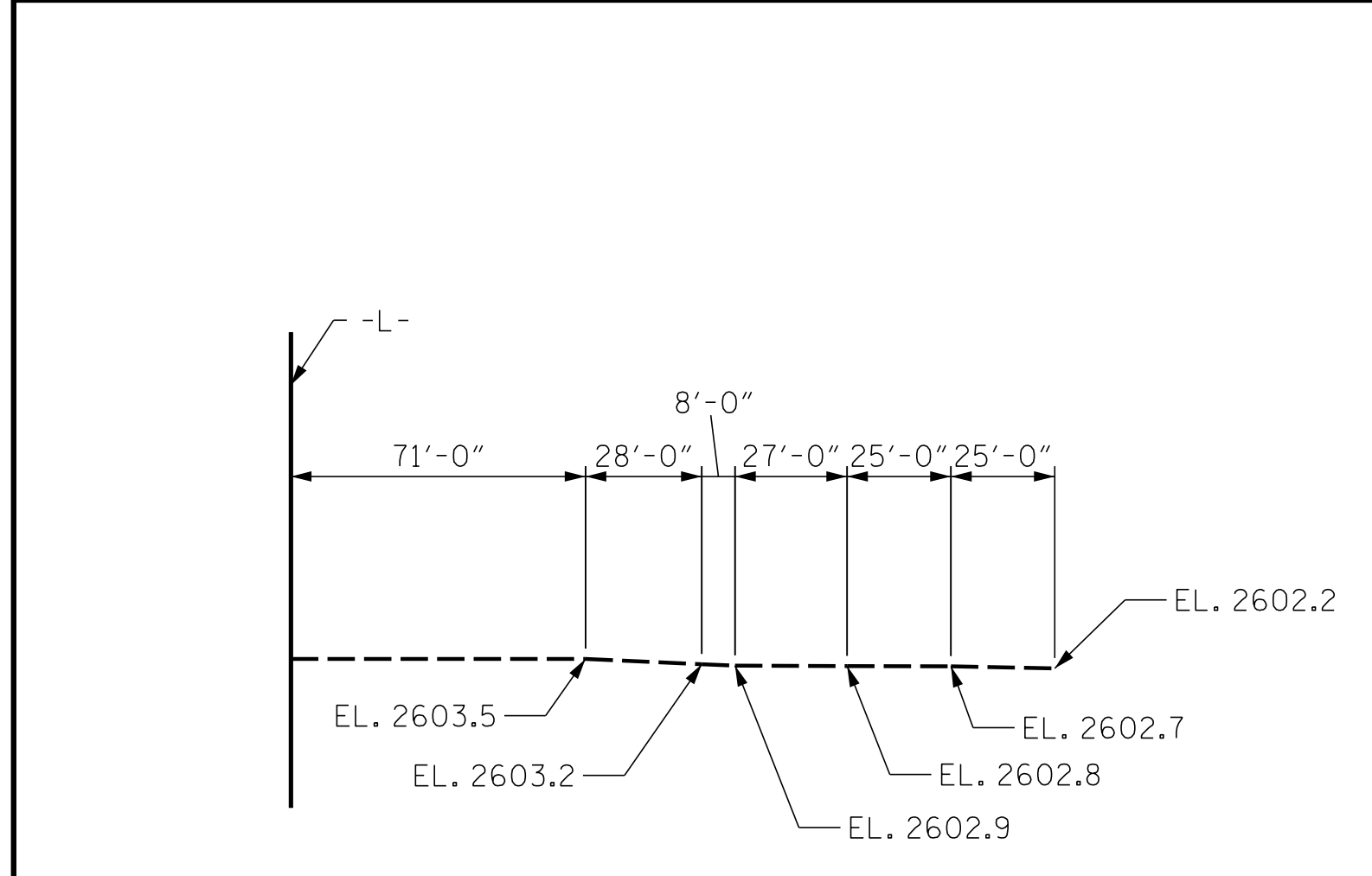
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1200+ C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YEARS
OVERTOPPING FLOOD ELEVATION	= 2624 *

* SR 1550 STA. 07+35
WS EL. TAKEN @ RIVER STATION 1570

TOTAL BILL OF MATERIAL

MATERIAL	ELEMENT	LUMP SUM		
		STAGE I	STAGE II	
FOUNDATION COND. MAT'L (TONS)		83	67	
	TOTAL	150		
	CLASS A CONCRETE (CU. YDS.)	BARREL	122.4	216.7
		EDGE BEAMS	0.5	1.2
		HEADWALL	---	1.0
		SILLS	0.7	0.3
		WINGS	4.9	6.8
END CURTAIN WALL		0.7	0.5	
TOTAL	129.2	226.5		
TOTAL		355.7		
REINFORCING STEEL (LBS.)	BARREL	21,894	27,142	
	WINGS, ETC.	339	435	
	TOTAL	22,233	27,577	
TOTAL		49,810		



PROFILE ALONG CULVERT

SAMPLE BAR REPLACEMENT

SIZE	LENGTH
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

FOUNDATION NOTES

FOR CULVERT EXCAVATION, SEE SECTION 414 OF THE STANDARD SPECIFICATIONS.

THE REINFORCED CONCRETE BOX CULVERT SHALL BE PLACED ON THE STANDARD 1.0 FOOT BLANKET OF FOUNDATION CONDITIONING MATERIAL.

UNDERCUT SOFT/VERY LOOSE SOILS THAT MAY BE ENCOUNTERED BENEATH THE BOTTOM OF THE FOUNDATION CONDITIONING MATERIAL. BACKFILL UNDERCUT AREAS WITH FOUNDATION CONDITIONING MATERIAL. IF MORE THAN 1 FT. OF ADDITIONAL UNDERCUT IS REQUIRED, CONTACT THE OPERATIONS ENGINEER FOR APPROVAL.

INSTALL TYPE 2 GEOTEXTILE ON THE SIDES AND TOP OF THE CULVERT. EXTEND GEOTEXTILE 10 FEET IN EACH DIRECTION OF THE JOINT. OVERLAP GEOTEXTILES A MINIMUM OF 18 INCHES. ESTIMATED TYPE 2 GEOTEXTILE QUANTITY - 100 SYDS.

NOTES

ASSUMED LIVE LOAD = HL-93.
DESIGN FILL TO BOTTOM OF TOP SLAB 41.0' (MAX).
FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE STANDARD NOTES SHEET SN.
3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
STAGE I:
1. WING FOOTINGS AND FLOOR SLAB AND FLOOR EDGE BEAM AND INCLUDING 4" OF VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT.

STAGE II:
1. WING FOOTINGS AND FLOOR SLAB AND FLOOR EDGE BEAM AND INCLUDING 4" OF VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY THE ENTIRE ROOF SLAB, ROOF EDGE BEAM AND HEADWALL.

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.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

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 SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

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

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.

DETAILED DRAWINGS FOR FALSEWORK AND FORMS FOR THIS CULVERT EXTENSION SHALL BE SUBMITTED. SEE STANDARD NOTES SHEET SN.

THE EXISTING STRUCTURE CONSISTING OF A DOUBLE 9' X 7' REINFORCED CONCRETE BOX CULVERT 262.0'± LONG ALONG CENTERLINE OF CULVERT AND LOCATED AT PROPOSED STRUCTURE SHALL BE RETAINED AND EXTENDED. THE EXISTING CULVERT IS PRESENTLY NOT POSTED FOR LOAD LIMIT.

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.

RCBC EXTENSION FLOOR SLAB INVERT TO BE CONSTRUCTED 1'-0" BELOW THE INVERT OF THE EXISTING CULVERT FLOOR SLAB. RCBC EXTENSION BOTTOM OF ROOF SLAB SHALL MATCH EXISTING CULVERT BOTTOM OF ROOF SLAB. SEE DETAIL "A" ON SHEET C-3.

PROJECT NO. HB-0003
HAYWOOD COUNTY
STATION: 188+14.00 -L-

P:\2023\2312801-HB-0003\Structures\CONCULVERT_EXT_12-2023\C-1_HB-003_SMU_CU_GENERAL_INFORMAT_IOM.dgn 6/4/2024 10:05:22 AM

DRAWN BY : D. MOSQUERA/J. PENDERGRAFT DATE : 11/28/23
CHECKED BY : J. DILWORTH DATE : 11/28/23

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ENGINEER OF RECORD

DocuSigned by
Juan D. Mosquera
6/4/2024
SDCSP88EAE51E

ETHERILL ENGINEERING

15801 Brixham Hill Ave, Suite 530
Charlotte, N.C. 28277
Bus: 704.919.1880
Fax: 919.851.8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 9 FT. X 8 FT. REINFORCED CONCRETE BOX CULVERT EXTENSION
74°-00'-00" SKEW

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

C-1
TOTAL SHEETS 9