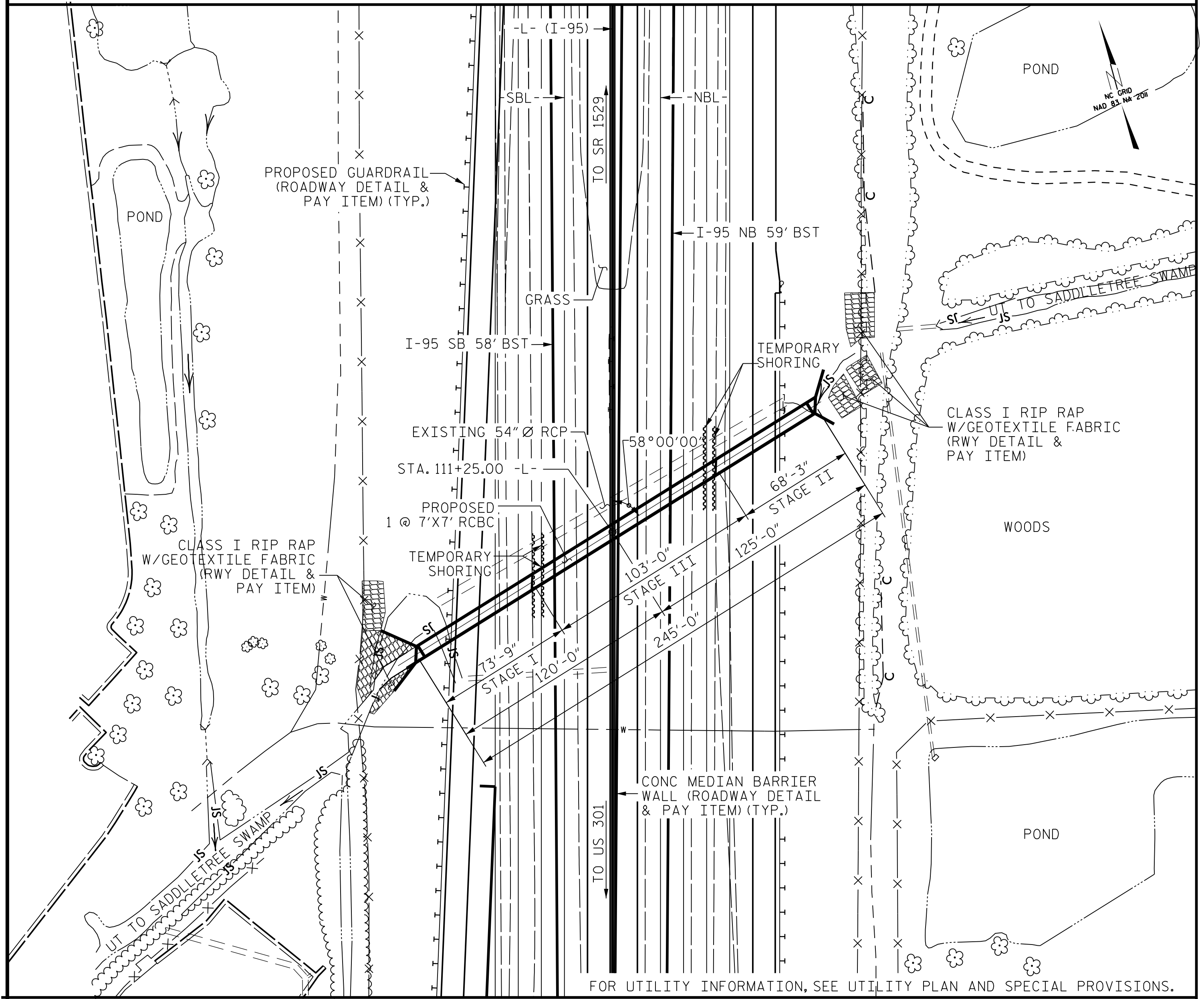
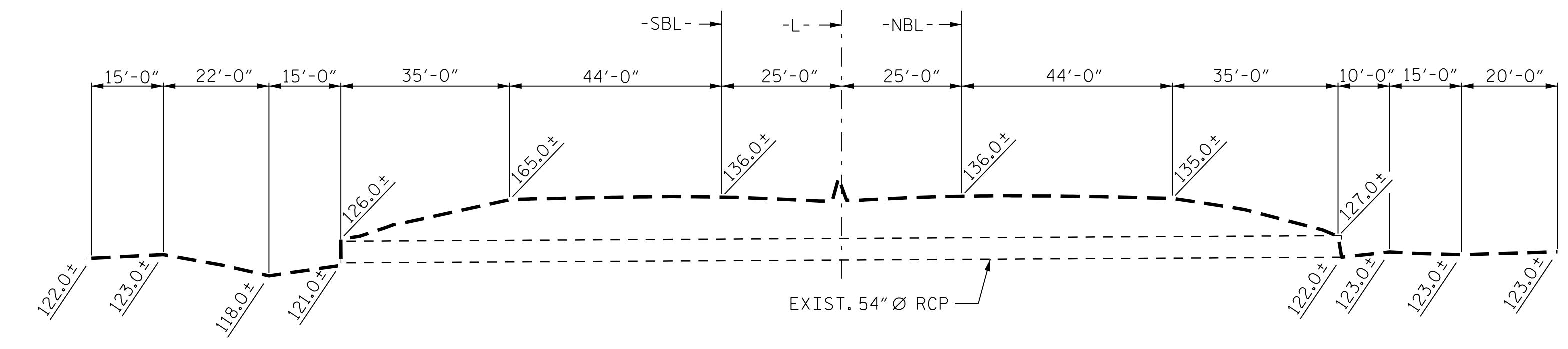


BM5: BENCH NAIL SET IN BASE OF 24" OAK, BL STA. 118+42.00; 57' RT.; EL. 134.06'



LOCATION SKETCH



PROFILE ALONG CULVERT

ROADWAY DATA

GRADE PT. EL. @ STA. 111+25.00 -L-	= 136.10'
BED ELEV. @ STA. 111+25.00 -L-	= 120.90'
ROADWAY SLOPE (LEFT)	= 3 : 1
ROADWAY SLOPE (RIGHT)	= 3 : 1

HYDRAULIC DATA

DESIGN DISCHARGE	= 270 CFS
FREQUENCY OF DESIGN FLOOD	= 100 YRS.
DESIGN HIGH WATER ELEVATION	= 128.5'
DRAINAGE AREA	= 0.42 SQ. MI.
BASE DISCHARGE (0100)	= 270 CFS
BASE HIGH WATER ELEVATION	= 128.5'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 320+ CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YRS.
OVERTOPPING FLOOD ELEVATION	= 129.1' *
* AT ROADWAY LOW POINT STA. 13+79.00 -Y1RPD-GP ELEV. =132.5', SHOULDER ELEV = 130.4'	

TOTAL STRUCTURE QUANTITIES

CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MATERIAL	
STAGE I	64 TONS
STAGE II	60 TONS
STAGE III	90 TONS
TOTAL	214 TONS
CLASS A CONCRETE	
STAGE I	79.1 C.Y.
STAGE II	74.3 C.Y.
STAGE III	89.0 C.Y.
TOTAL	242.4 C.Y.
REINFORCING STEEL	
STAGE I	7,929 LBS.
STAGE II	7,435 LBS.
STAGE III	9,592 LBS.
TOTAL	24,956 LBS.

FOUNDATION NOTES

BACKFILL WITH SELECT MATERIAL, CLASS VI MEETING THE REQUIREMENTS OF SECTION 1016 OF THE STANDARD SPECIFICATIONS.
 SEE SECTION 414 OF THE STANDARD SPECIFICATIONS FOR CULVERT EXCAVATION AND BACKFILLING. EXCAVATE 1 FOOT BELOW CULVERT AND FOOTING AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414-4 OF THE STANDARD SPECIFICATIONS.

NOTES

ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING,
 FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
 FOR CONSTRUCTION SEQUENCE, EROSION CONTROL AND MEASURES, SEE EROSION CONTROL PLANS.
 DESIGN FILL ----- 7.76' (MAX. FILL), 5.37' (MIN. FILL),
 FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.
 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 STAGES I & II - CONSTRUCT RCBC SECTION AT BOTH OUTLET AND INLET ENDS.
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF BOTH VERTICAL WALLS.
 2. SILL WITH NATIVE MATERIAL BACKFILL.
 3. FOLLOWED BY THE WING WALLS FULL HEIGHT, ROOF SLAB AND HEADWALL.
 STAGE III - CONSTRUCT RCBC INTERMEDIATE SECTION.
 1. FLOOR SLAB INCLUDING 4" OF BOTH VERTICAL WALLS.
 2. FOLLOWED BY NATIVE MATERIAL BACKFILL AND ROOF SLAB.
 THE CONTRACTOR 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.
 STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY CONTRACTOR.
 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.
 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.
 NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
 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 TRAFFIC PHASING, LIMITS OF TEMPORARY SHORING, SEE TRAFFIC CONTROL PLANS.
 FOR PAY ITEM FOR TEMPORARY SHORING, SEE ROADWAY PLANS.

PROJECT NO. I-5987A
ROBESON COUNTY
 STATION: 111+25.00 -L-

SHEET 1 OF 8

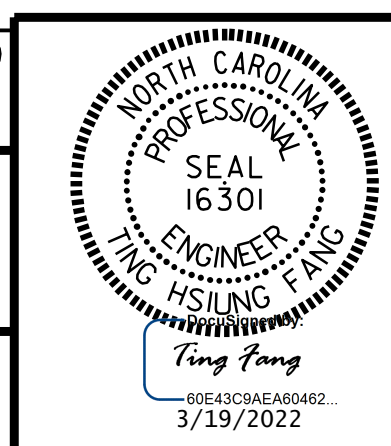
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BARREL STANDARD
 SINGLE 7 FT. X 7 FT.
 CONCRETE BOX CULVERT
 58° SKEW

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

CDM Smith
 CDM SMITH
 5400 Glenwood Avenue, Suite 400
 Raleigh, NC 27612-3228
 NC COA No. F-1255

DRAWN BY: JJR DATE: 8/21
 CHECKED BY: THF DATE: 8/21
 DESIGN ENGINEER: VDK DATE: 9/21

DWG. No.



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			8