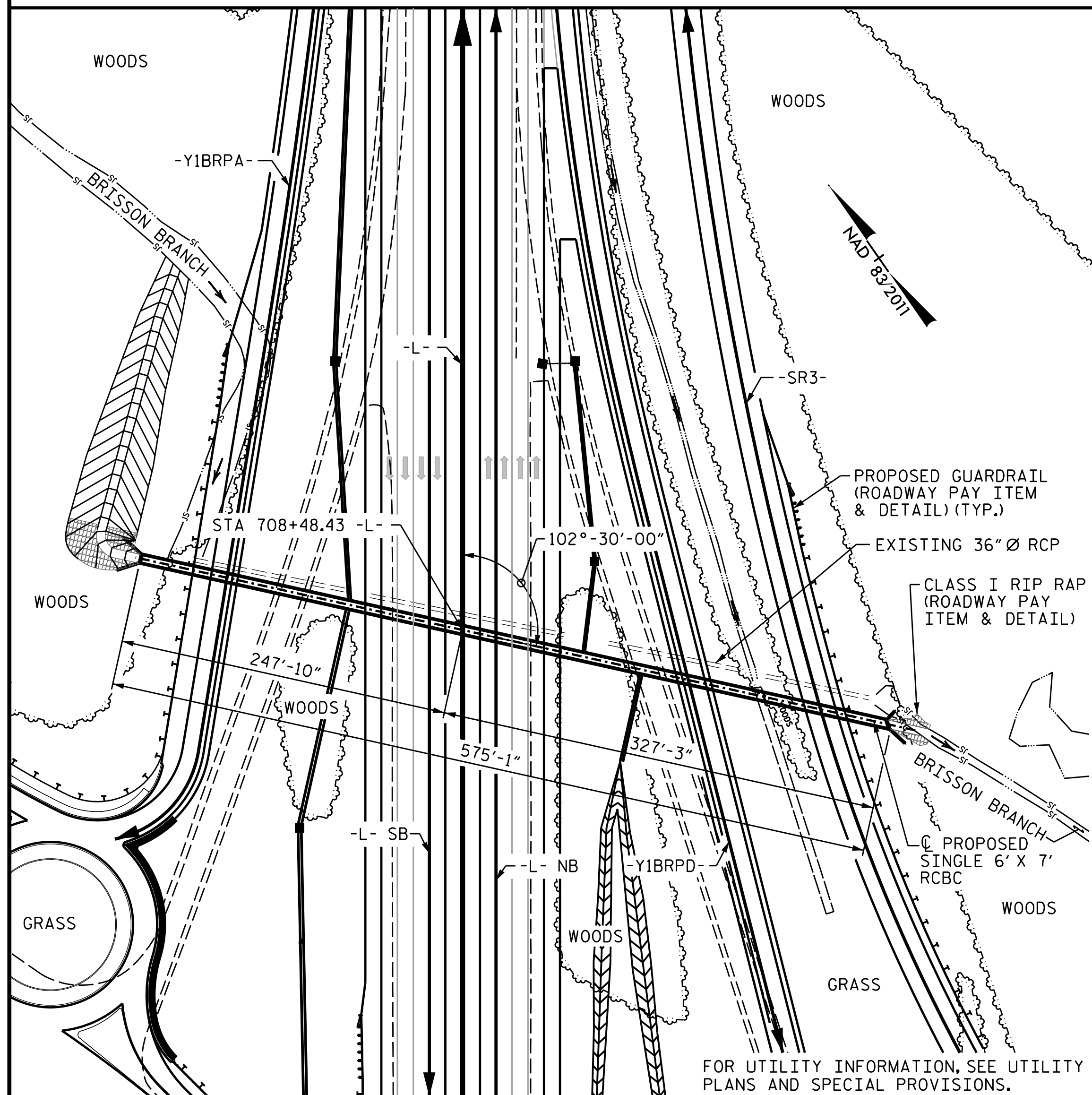
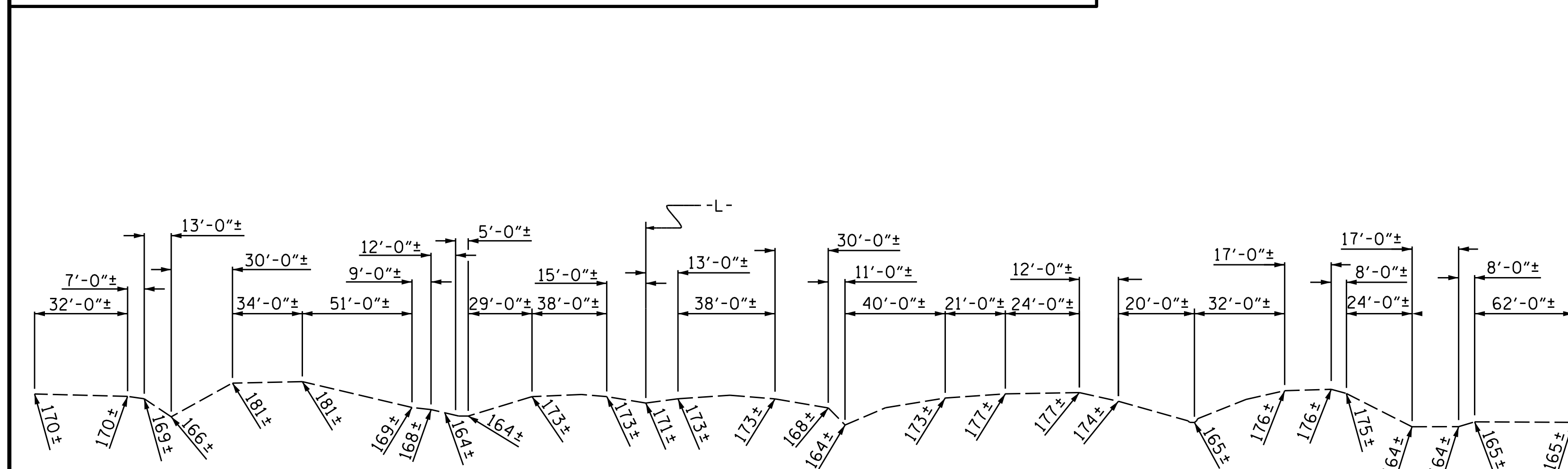


BENCH MARK #55; STA. 714+34.81 -L- 193' RT.;
TIE SPIKE SET IN 20" OAK; ELEV 173.31



LOCATION SKETCH



PROFILE ALONG CULVERT

ROADWAY DATA

GRADE POINT ELEV. @ STA. 708+53.98 -L- SB = 174.34
GRADE POINT ELEV. @ STA. 708+42.89 -L- NB = 174.02
BED ELEV. @ STA. 708+48.43 -L- = 161.08
ROADWAY SLOPES = 3 : 1

HYDROGRAPHIC DATA

DESIGN DISCHARGE = 150 CFS
FREQUENCY OF DESIGN FLOOD = 100 YRS
DESIGN HIGH WATER ELEVATION = 168.2'
DRAINAGE AREA = 0.2 SQ. MI.
BASE DISCHARGE (Q100) = 150 CFS
BASE HIGH WATER ELEVATION = 168.2'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 360 CFS
FREQUENCY OF OVERTOPPING FLOOD = 500+ YRS
OVERTOPPING FLOOD ELEVATION = 176.2'

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		REINFORCING STEEL	
STAGE 1 (LEFT)	85.6 C.Y.	STAGE 1 (LEFT)	8,610 LBS
STAGE 1 (RIGHT)	151.9 C.Y.	STAGE 1 (RIGHT)	15,596 LBS
STAGE 2	66.0 C.Y.	STAGE 2	7,104 LBS
STAGE 3 (LEFT)	94.7 C.Y.	STAGE 3 (LEFT)	10,448 LBS
STAGE 3 (RIGHT)	96.1 C.Y.	STAGE 3 (RIGHT)	10,606 LBS
TOTAL	494.3 C.Y.	TOTAL	52,364 LBS
CULVERT EXCAVATION		LUMP SUM	
FOUNDATION COND. MAT'L.			
STAGE 1 (LEFT)	72 TONS		
STAGE 1 (RIGHT)	135 TONS		
STAGE 2	65 TONS		
STAGE 3 (LEFT)	94 TONS		
STAGE 3 (RIGHT)	95 TONS		
TOTAL	461 TONS		
FOUNDATION COND. GEOTEXTILE			
STAGE 1 (LEFT)	245 S.Y.		
STAGE 1 (RIGHT)	465 S.Y.		
STAGE 2	225 S.Y.		
STAGE 3 (LEFT)	340 S.Y.		
STAGE 3 (RIGHT)	345 S.Y.		
TOTAL	1620 S.Y.		

NOTES:

- ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
- DESIGN FILL----- 14.6'.
- FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.
- 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.
- 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 SHEETS.
- 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.
- 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.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.

FOR TRAFFIC PHASING, SEE TRAFFIC CONTROL PLANS.

FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

EXCAVATE FOUNDATION A MINIMUM OF 12" BELOW CULVERT BEARING ELEVATION. PLACE 12" OF CLASS VI FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH SECTION 414 OF THE STANDARD SPECIFICATIONS.

OVEREXCAVATE ADDITIONAL LOOSE/SOFT OR ORGANIC MATERIAL IF PRESENT TO SUITABLE BEARING MATERIALS AND REPLACE WITH ADDITIONAL CLASS VI FOUNDATION CONDITIONING MATERIAL.

ENCAPSULATE ALL FOUNDATION CONDITIONING MATERIAL IN TYPE 4 GEOTEXTILE. FOR FOUNDATION CONDITIONING GEOTEXTILE, SEE BOX CULVERT EXCAVATION SPECIAL PROVISION.

PROJECT NO. I-5987B

ROBESON COUNTY

STATION: 708+48.43 -L-

SHEET 1 OF 20



4/12/2022 | 10:44 AM EDT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 6 FT. X 7 FT.
CONCRETE BOX
CULVERT

DRAWN BY : STM DATE : 09/21
CHECKED BY : MGC DATE : 03/22
DESIGN ENGINEER OF RECORD: STM DATE : 03/22

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			C16-1
2			4			10th SHEETS
						20