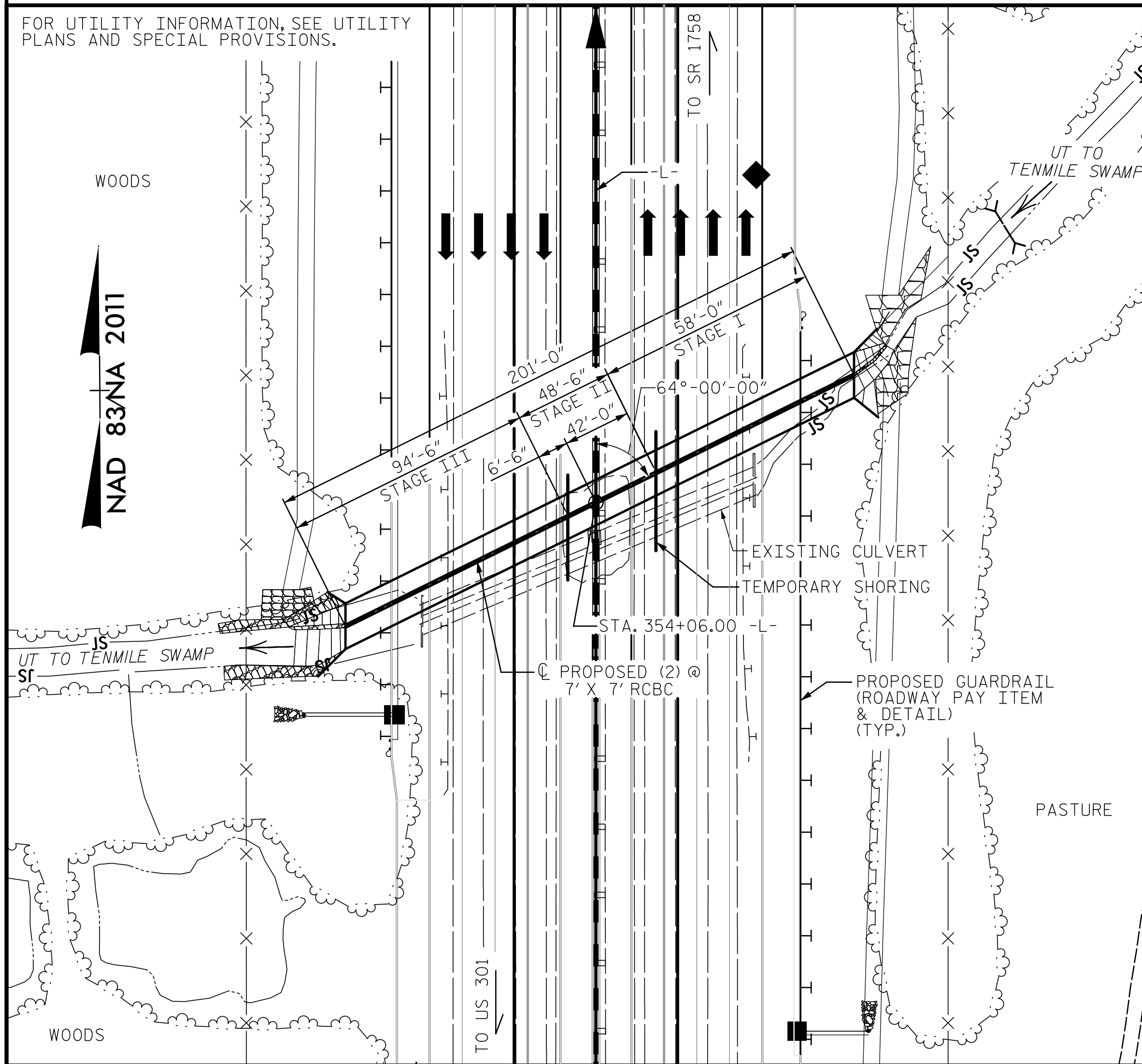


BENCH MARK #17: RRS IN 24" PINE; STA. 346+92.0 -L-; 258' RT.; ELEV. 152.37'

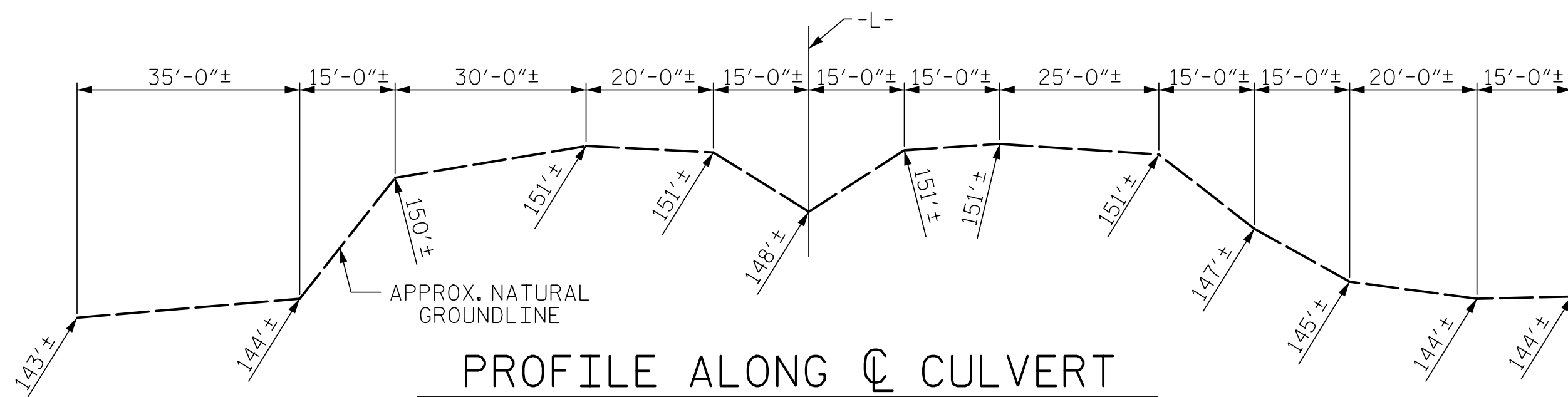
FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.



LOCATION SKETCH

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		REINFORCING STEEL		FOUNDATION COND. MAT'L.	
STAGE I	105.4 C.Y.	STAGE I	11,546 LBS.	STAGE I	83 TONS
STAGE II	75.0 C.Y.	STAGE II	9,068 LBS.	STAGE II	69 TONS
STAGE III	159.8 C.Y.	STAGE III	18,010 LBS.	STAGE III	135 TONS
TOTAL	340.2 C.Y.	TOTAL	38,624 LBS.	TOTAL	287 TONS
REMOVAL OF EXISTING STRUCTURE	LUMP SUM	CULVERT EXCAVATION	LUMP SUM		



DRAWN BY : ZCS DATE : 11/21
 CHECKED BY : MGC DATE : 12/21
 DESIGN ENGINEER OF RECORD: ZCS DATE : 2/22

NOTES:

- ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
- DESIGN FILL----- 6.5 FT.
- FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.
- 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN EACH STAGE 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 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 SHEET.
- 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.

FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.

FOR TRAFFIC PHASING, SEE TRAFFIC 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 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.

DOWELS SHALL BE USED TO CONNECT THE STAGE II CULVERT TO STAGE I AND STAGE III TO STAGE II AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

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.

ROADWAY DATA

G.P. ELEV. @ STA. 354+06.00 -L- SB _____ = 155.45'
 G.P. ELEV. @ STA. 354+06.00 -L- NB _____ = 155.56'
 BED ELEV. @ STA. 354+06.00 -L- _____ = 142.1'
 ROADWAY SLOPES _____ = 3 : 1

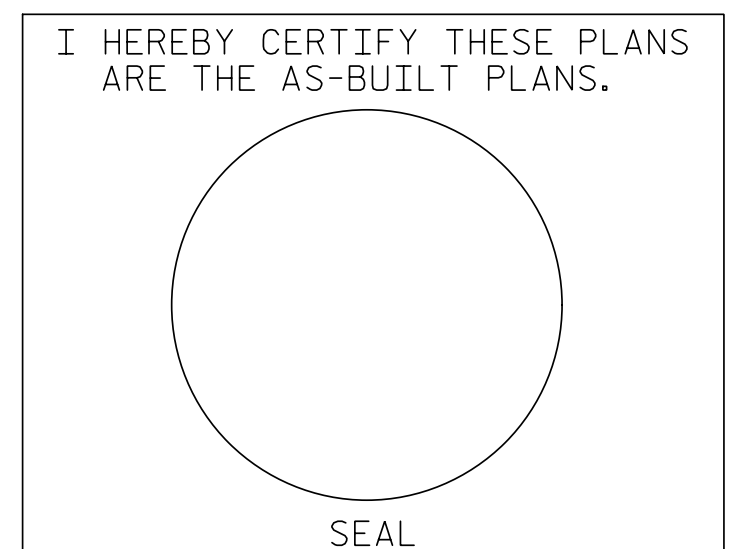
HYDRAULIC DATA

DESIGN DISCHARGE _____ = 370 CFS
 FREQUENCY OF DESIGN FLOOD _____ = 100 YRS
 DESIGN HIGH WATER ELEVATION _____ = 148.4'
 DRAINAGE AREA _____ = 0.85 SQ. MI.
 BASE DISCHARGE (Q100) _____ = 370 CFS
 BASE HIGH WATER ELEVATION _____ = 148.4'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE _____ = 120 CFS
 FREQUENCY OF OVERTOPPING FLOOD _____ = <10 YRS
 OVERTOPPING FLOOD ELEVATION _____ = 146.5' *

* OVERTOPPING OCCURS AT DRAINAGE DIVIDE @ STATION 351+50 RT.



PROJECT NO. I-5987A
ROBESON COUNTY
 STATION: 354+06.00 -L-

SHEET 1 OF 13

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DOUBLE 7 FT. X 7 FT.
 CONCRETE BOX CULVERT
 64° SKEW

5/10/2022 | 10:32 AM EDT

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:	C21-1
1			3			TOTAL SHEETS
2			4			13

FILE NAME: 414.001.I-5987A_Site-21_SMU.CU.001.dgn SITE 21