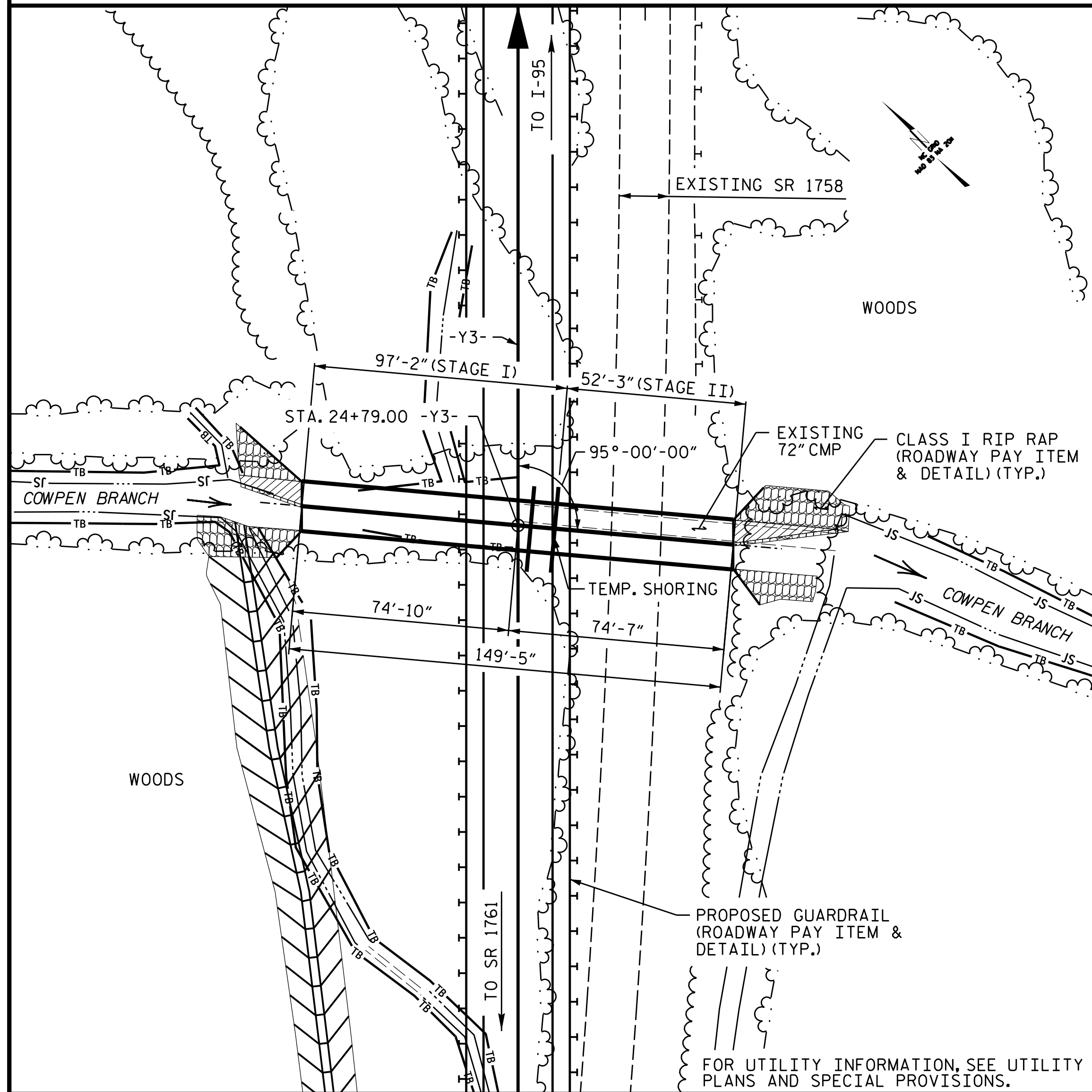
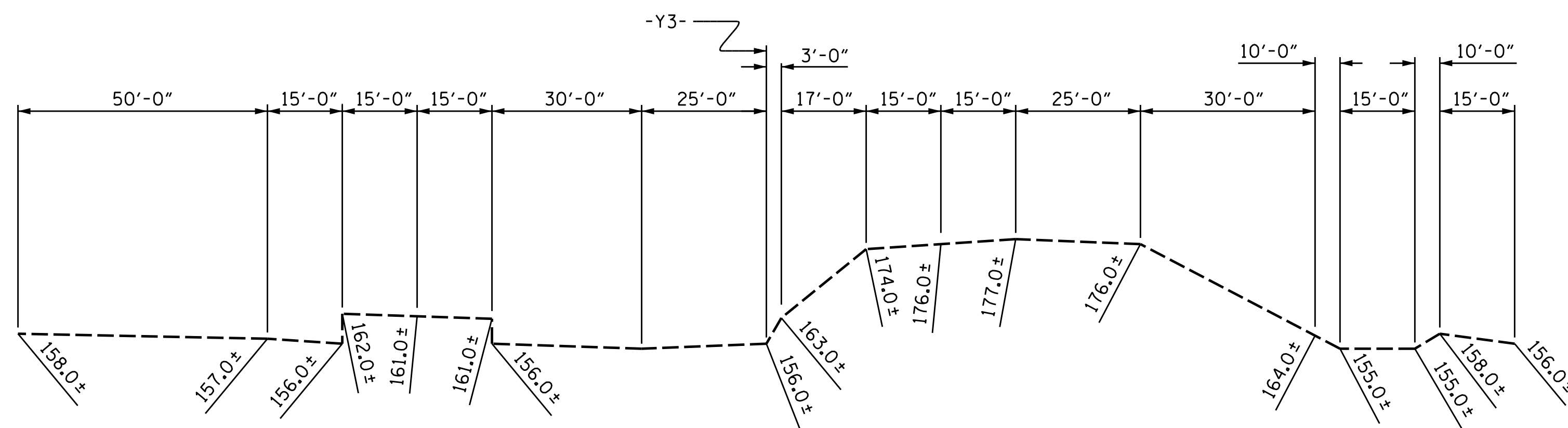


BENCH MARK #22: RAILROAD SPIKE SET IN 10" HICKORY TREE
246' RT OF STA. 446+03 -L-; ELEV. 162.95



LOCATION SKETCH



PROFILE ALONG Q CULVERT

DRAWN BY : STM DATE : 10/21
CHECKED BY : MGC DATE : 12/21
DESIGN ENGINEER OF RECORD: STM DATE : 10/21

3/16/2022 X:\NCDOT\I-5987A\Structures\Site 14 - 24+79 -Y3-\Final Plans\DGNS\417.001.I-5987A.Site 14.SMU.CU.001.dgn
User:smassinople

ROADWAY DATA

GRADE POINT ELEV. @ STA. 24+79.00 -Y3- = 182.75'
BED ELEV. @ STA. 24+79.00 -Y3- = 155.80'
ROADWAY SLOPES = 3 : 1

HYDROGRAPHIC DATA

DESIGN DISCHARGE = 420 CFS
FREQUENCY OF DESIGN FLOOD = 25 YRS
DESIGN HIGH WATER ELEVATION = 164.8'
DRAINAGE AREA = 1.64 SQ. MI.
BASE DISCHARGE (Q100) = 550 CFS
BASE HIGH WATER ELEVATION = 165.8'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 570 CFS
FREQUENCY OF OVERTOPPING FLOOD = 100 YRS
OVERTOPPING FLOOD ELEVATION = 165.9' *

* OVERTOPPING OCCURS AT STA. 16+50 -Y3-

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
STAGE I	229.3 C.Y.
STAGE II	130.8 C.Y.
TOTAL	360.1 C.Y.

REINFORCING STEEL	
STAGE I	24,639 LBS.
STAGE II	14,018 LBS.
TOTAL	38,657 LBS.

CULVERT EXCAVATION	LUMP SUM
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FOUNDATION COND. MAT'L.	
STAGE I	151 TONS
STAGE II	81 TONS
TOTAL	232 TONS

NOTES:

ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.

DESIGN FILL----- 19.1 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 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 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.

CONSTRUCT THE REINFORCED CONCRETE BOX CULVERT WITH 3.5" OF CAMBER TO ACCOUNT FOR ANTICIPATED SETTLEMENT.

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 REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414-4 OF THE STANDARD SPECIFICATIONS.

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.

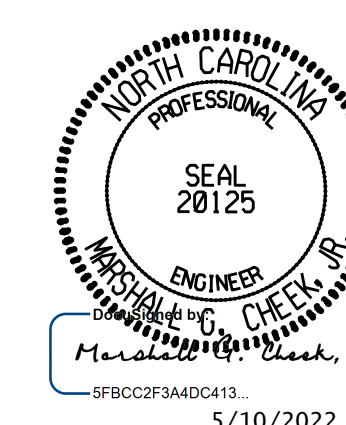
DOWELS SHALL BE USED TO CONNECT THE STAGE II CULVERT TO STAGE I AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

PROJECT NO. I-5987A

ROBESON COUNTY

STATION: 24+79.00 -Y3-

SHEET 1 OF 10



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 8 FT. X 7 FT.
CONCRETE BOX CULVERT
95°-00'-00" SKEW

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:	C14-1
1			3			TOTAL SHEETS
2			4			10