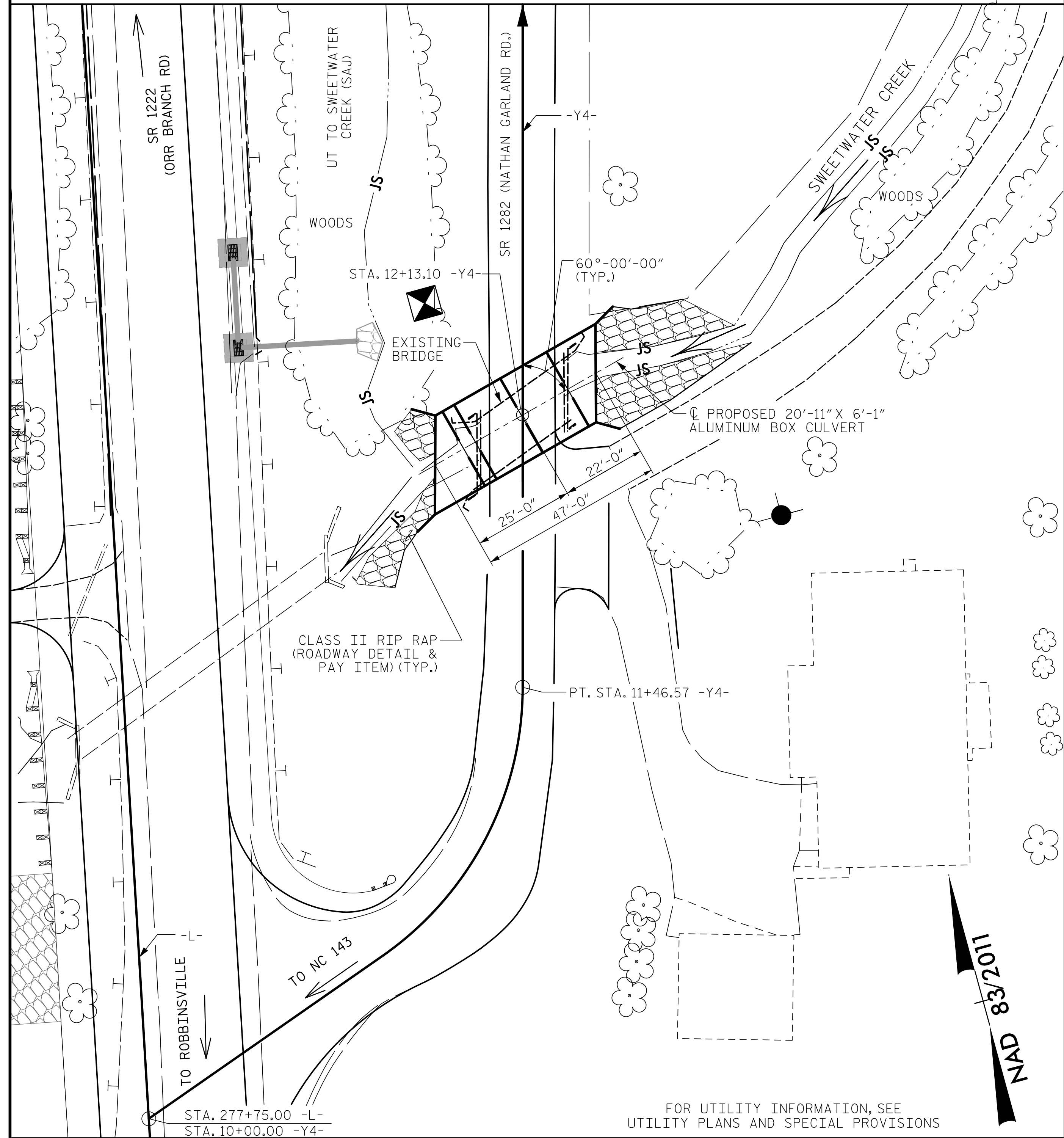


BM#28: SPIKE NAIL IN 14" POPLAR TREE; 24' LT OF STA. 12+40.00 -Y4-; ELEV. = 2360.04'

F.A. PROJECT NO. : 0129008



LOCATION SKETCH

ROADWAY DATA:

| | |
|--|----------|
| GRADE POINT ELEV. @ STA. 12+13.10 -Y4- | 2362.32' |
| BED ELEV. @ STA. 12+13.10 -Y4- | 2353.8' |
| ROADWAY SLOPES | 4:1 |

HYDRAULIC DATA:

| | |
|-----------------------------|--------------|
| DESIGN DISCHARGE | 420 CFS |
| FREQUENCY OF DESIGN FLOOD | 25 YRS. |
| DESIGN HIGH WATER ELEVATION | 2360.2' |
| DRAINAGE AREA | 1.09 SQ. MI. |
| BASE DISCHARGE | 600 CFS |
| FREQUENCY OF BASE DISCHARGE | 100 YRS. |
| BASE HIGH WATER ELEVATION | 2361.0' |

OVERTOPPING FLOOD DATA:

| | |
|--------------------------------|----------|
| OVERTOPPING DISCHARGE | 525 CFS |
| FREQUENCY OF OVERTOPPING FLOOD | 50+ YRS. |
| OVERTOPPING FLOOD ELEVATION | 2360.7' |

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" |

NOTE:
SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND $f_y = 60\text{ksi}$.

NOTES:

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

ASSUMED LIVE LOAD - HL-93 OR ALTERNATE.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

CULVERT SHALL BE DESIGNED FOR A MAXIMUM FILL DEPTH OF 2'-6".

FOR CULVERT DIVERSION DETAILS, SEE EROSION CONTROL PLANS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

FOR ALUMINUM BOX CULVERT, SEE SPECIAL PROVISIONS.

THE DETAILS SHOWN HERE ARE FOR GENERAL LAYOUT ONLY. THE CONTRACTOR SHALL SUPPLY DESIGNS AND DETAILS FOR THE ALUMINUM BOX CULVERT AND CONCRETE HEADWALLS & CONCRETE WINGWALLS FOR REVIEW AND APPROVAL THAT MEET THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, 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 SPICED 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.

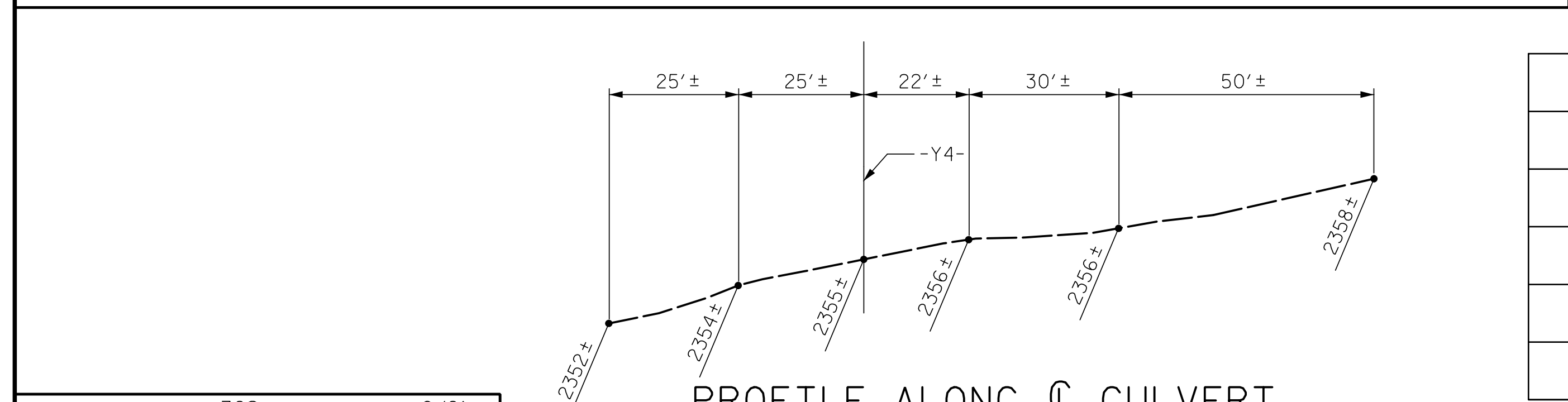
THE EXISTING 1 SPAN STRUCTURE (1 @ 19'-11") CONSISTING OF A TIMBER DECK ON TIMBER BEAMS WITH A 1/2" ASPHALT WEARING SURFACE AND A CLEAR ROADWAY WIDTH OF 21'-1" AND WITH A SUBSTRUCTURE CONSISTING OF TIMBER CAPS ON RUBBLE MASONRY ABUTMENTS SHALL BE REMOVED.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE ENTIRE AREA OF THE ALUMINUM BOX CULVERT IN CONTACT WITH THE CONCRETE HEADWALL SHALL BE THOROUGHLY COATED WITH NEOPRENE SEALANT FOR CORROSION PROTECTION AT THE DIRECTION OF THE ENGINEER. THE COST OF THE NEOPRENE SEALANT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE ALUMINUM BOX CULVERT.

EXCAVATE 1 FOOT BELOW THE BOTTOM OF THE CULVERT AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414 OF THE STANDARD SPECIFICATIONS. FOUNDATION CONDITIONING MATERIAL SHOULD CONSIST OF SELECT MATERIAL CLASS V OR VI FOR CULVERTS.

IF REQUIRED, UNDERCUT LOOSE SOILS THAT MAY BE ENCOUNTERED BENEATH THE BOTTOM OF THE FOUNDATION CONDITIONING MATERIAL. BACKFILL UNDERCUT AREAS WITH FOUNDATION CONDITIONING MATERIAL.



PROFILE ALONG CULVERT

TOTAL STRUCTURE QUANTITIES

| | |
|----------------------------------|----------|
| ALUMINUM BOX CULVERT | LUMP SUM |
| CULVERT EXCAVATION | LUMP SUM |
| FOUNDATION CONDITIONING MATERIAL | 83 TONS |
| REMOVAL OF EXISTING STRUCTURE | LUMP SUM |
| ASBESTOS ASSESSMENT | LUMP SUM |

DRAWN BY : ZCS DATE : 9/21
CHECKED BY : MGC DATE : 11/21

STATE OF NORTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL G. CHECK, JR.
7/27/2022

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

PROJECT NO. A-0009CB
GRAHAM COUNTY
STATION: 12+13.10 -Y4-

SHEET 1 OF 3 REPLACES BRIDGE #26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

20'-11" X 6'-1"
ALUMINUM
BOX CULVERT
60° SKEW

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | C3-1 |
| 2 | | | 4 | | | TOTAL SHEETS 3 |

STR. #4