

DRAWN BY : ZCS DATE : 1/26
CHECKED BY : MGC DATE : 2/26
DESIGN ENGINEER OF RECORD: ZCS DATE : 2/26

2/26/2026
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ZSmith

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
LEFT EXTENSION _____	68.0 C.Y.
RIGHT EXTENSION _____	53.3 C.Y.
TOTAL _____	121.3 C.Y.
REINFORCING STEEL	
LEFT EXTENSION _____	7,324 LBS
RIGHT EXTENSION _____	6,497 LBS
TOTAL _____	13,821 LBS
CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MAT'L.	
LEFT EXTENSION _____	39 TONS
RIGHT EXTENSION _____	32 TONS
TOTAL _____	71 TONS
CLASS II RIP RAP	260 TONS

ROADWAY DATA

GRADE POINT ELEV. @ STA. 16+45.00 -L- = 2682.81
BED ELEV. @ STA. 16+45.00 -L- = 2671.7 \pm
ROADWAY SLOPES = 2 : 1 MAX

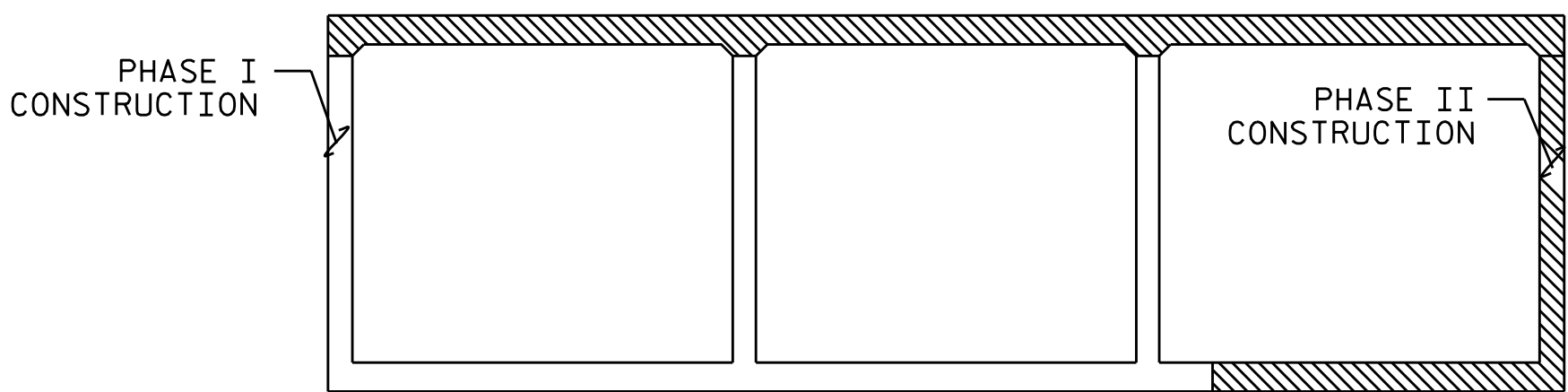
HYDRAULIC DATA

DESIGN DISCHARGE = 1700 CFS
FREQUENCY OF DESIGN FLOOD = 50 YRS
DESIGN HIGH WATER ELEVATION = 2682.3
DRAINAGE AREA = 7.38 SQ. MI.
BASIC DISCHARGE (Q100) = 2000 CFS
BASIC HIGH WATER ELEVATION = 2683.1

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 1900 CFS
FREQUENCY OF OVERTOPPING FLOOD = 100 \pm YRS
OVERTOPPING FLOOD ELEVATION = 2682.9 *

* OVERTOPPING OCCURS AT STA. 16+25.00 -L-
WS ELEV. TAKEN AT RIVER STATION 82791



CONSTRUCTION PHASING

(LOOKING DOWNSTREAM)

PHASE I CONSTRUCTION

PHASE II CONSTRUCTION

NOTES:

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

DESIGN FILL----- 2.01' MAX., 1.25' MIN.

FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.

3" \oslash WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN EACH CULVERT EXTENSION TO BE POURED IN THE FOLLOWING ORDER:

1. PHASE I WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF PHASE I WALLS AND PHASE I WINGS FULL HEIGHT.
3. PHASE II WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF PHASE II VERTICAL WALLS.
4. THE REMAINING PORTIONS OF PHASE II WALLS AND PHASE II WINGS FULL HEIGHT.
5. 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.

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.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSION. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

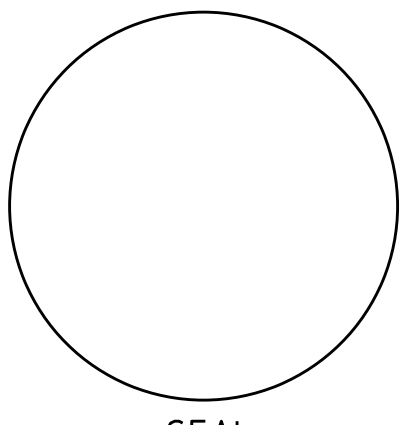
AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR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

EXCAVATE 1 FOOT BELOW CULVERT AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414-4 OF THE STANDARD SPECIFICATIONS. FOUNDATION CONDITIONING MATERIAL SHOULD CONSIST OF SELECT MATERIAL CLASS V OR VI FOR RCBC.

DOWELS SHALL BE USED TO CONNECT THE PROPOSED EXTENSIONS TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS.



PROJECT NO. HN-0031
TRANSYLVANIA COUNTY
STATION: 16+45.00 -L-

SHEET 1 OF 12 STRUCTURE No. 870003



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 10 FT. X 8 FT.
CONCRETE BOX CULVERT
LT & RT EXTENSION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			C-1
2			4			TOTAL SHEETS 12