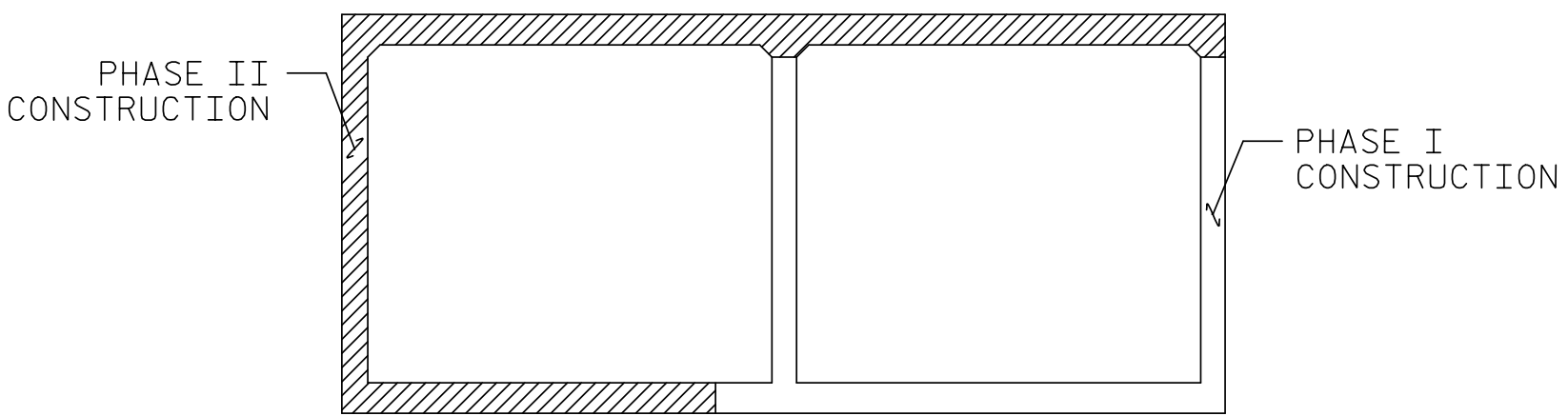


DRAWN BY : STM DATE : 08/22
CHECKED BY : MGC DATE : 01/23
DESIGN ENGINEER OF RECORD: STM DATE : 08/22

10/18/2023
X:\NCDOT\VR-5739\Structures\Str. #5 (499 + 65.60 -L-)\Final Plans\DGNS\VR-5739.SMU.CU.STR 5.1.dgn
User:ZSmith

TOTAL STRUCTURE QUANTITIES		
CLASS A CONCRETE		
LEFT EXTENSION	28.4	C.Y.
RIGHT EXTENSION	43.5	C.Y.
TOTAL	71.9	C.Y.
REINFORCING STEEL		
LEFT EXTENSION	3,015	LBS
RIGHT EXTENSION	4,465	LBS
TOTAL	7,480	LBS
CULVERT EXCAVATION	LUMP SUM	
FOUNDATION COND. MAT'L.		
LEFT EXTENSION	7	TONS
RIGHT EXTENSION	12	TONS
TOTAL	19	TONS

ROADWAY DATA	
GRADE POINT ELEV. @ STA. 499+65.60 -L- =	138.42'
BED ELEV. @ STA. 499+65.60 -L- =	128.28'
ROADWAY SLOPES =	2:1 LEFT 3:1 RIGHT
HYDROGRAPHIC DATA	
DESIGN DISCHARGE =	850 CFS
FREQUENCY OF DESIGN FLOOD =	50 YRS
DESIGN HIGH WATER ELEVATION =	135.4'
DRAINAGE AREA =	3.6 SQ. MI.
BASE DISCHARGE (Q100) =	1000 CFS
BASE HIGH WATER ELEVATION =	136.3'
OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE =	1670 CFS
FREQUENCY OF OVERTOPPING FLOOD =	500+ YRS
OVERTOPPING FLOOD ELEVATION =	139.4'



CONSTRUCTION PHASING

(LOOKING DOWNSTREAM)

- PHASE I CONSTRUCTION
- PHASE II CONSTRUCTION

NOTES:

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

DESIGN FILL----- 0.81'

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. PHASE I WING FOOTINGS AND FLOOR SLAB INCLUDING 4" 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 CULVERTS.

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

FOR TRAFFIC PHASING, SEE TRAFFIC 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.

PROJECT NO. R-5739
NORTHAMPTON COUNTY
STATION: 499+65.60 -L-

SHEET 1 OF 9

		STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		DOUBLE 8 FT. X 10 FT. CONCRETE BOX CULVERT LT & RT EXTENSIONS 90° SKEW	
TGS ENGINEERS 706 HILLSBOROUGH STREET SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275		REVISIONS	
NO.		BY:	DATE:
1		3	4
TOTAL SHEETS		C5-1	
9		9	

STR #5