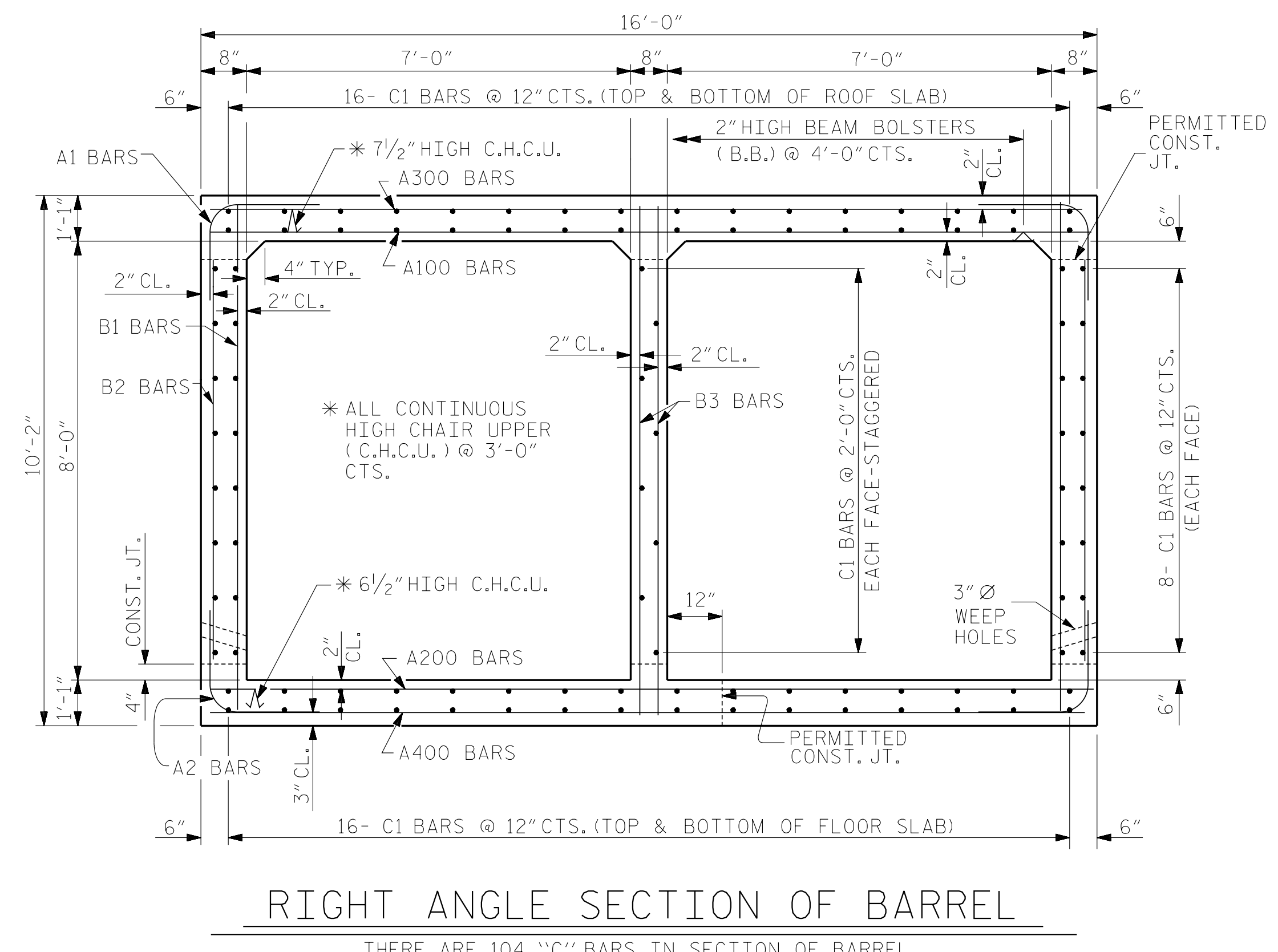


### TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE - LEFT EXTENSION	
BARREL @ 1.887 CY/FT	120.8 C.Y.
WING ETC.	14.9 C.Y.
CLASS A CONCRETE - RIGHT EXTENSION	
BARREL @ 1.887 CY/FT	22.6 C.Y.
WING ETC.	13.1 C.Y.
TOTAL	171.4 C.Y.
REINFORCING STEEL - LEFT EXTENSION	
BARREL	17,454 LBS.
WINGS ETC.	833 LBS.
REINFORCING STEEL - RIGHT EXTENSION	
BARREL	3,824 LBS.
WINGS ETC.	721 LBS.
TOTAL	22,832 LBS.
FOUNDATION CONDITIONING MAT'L. 90 TONS LEFT EXTENSION	
FOUNDATION CONDITIONING MAT'L. 17 TONS RIGHT EXTENSION	
TOTAL	107 TONS
CULVERT EXCAVATION LEFT EXTENSION LUMP SUM	
CULVERT EXCAVATION RIGHT EXTENSION LUMP SUM	
CLASS II RIP RAP (2'-0" THICK) LEFT EXTENSION 75 TONS	
CLASS II RIP RAP (2'-0" THICK) RIGHT EXTENSION 100 TONS	
TOTAL	175 TONS
GEOTEXTILE FOR DRAINAGE LEFT EXTENSION 85 SQ. YDS.	
GEOTEXTILE FOR DRAINAGE RIGHT EXTENSION 85 SQ. YDS.	
TOTAL	170 SQ. YDS.
COIR FIBER MAT LEFT EXTENSION 40 SQ. YDS.	
COIR FIBER MAT RIGHT EXTENSION 40 SQ. YDS.	
TOTAL	80 SQ. YDS.

### GENERAL NOTES

- ASSUMED LIVE LOAD -----HL-93 OR ALTERNATE LOADING.
- DESIGN FILL-----16.92' (MIN), 17.67' (MAX).
- FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE 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.
- AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALLS AND BOTH FACES OF INTERIOR 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.
- STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
- DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.
- THE EXISTING 7'X8' DOUBLE BARREL REINFORCED CONCRETE BOX CULVERT LOCATED AT THE PROPOSED SITE SHALL BE RETAINED AND EXTENDED TO THE LIMITS SHOWN.
- IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSIONS. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSIONS 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.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
- A THREE FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.
- 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.
- FOR COIR FIBER MAT, SEE SPECIAL PROVISIONS.



HYDRAULIC DATA

DESIGN DISCHARGE = 1100 CFS  
 DESIGN FREQUENCY = 50 YRS  
 DESIGN HW ELEVATION = 728.8 FT  
 BASE DISCHARGE = 1200 CFS  
 BASE FREQUENCY = 100 YRS  
 BASE HW ELEVATION = 729.5 FT

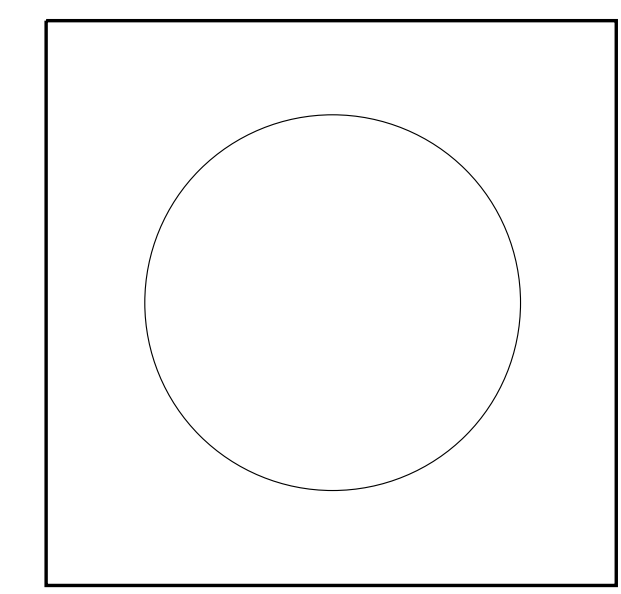
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 3000 CFS  
 OVERTOPPING FREQUENCY = 500+ YRS  
 OVERTOPPING ELEVATION = 745.1\* FT  
 DRAINAGE AREA = 1.55 SQ. MI.  
 \* OT ELEVATION IS ELEVATION OF MEDIAN MONOLITHIC ISLAND AT SAG STA. 41+80.1

### ROADWAY DATA

GRADE POINT ELEVATION @ STA. 41+20.00 -L- = 744.85  
 BED ELEVATION @ STA. 41+20.00 -L- = 719.59  
 ROADWAY SLOPES 2:1

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



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. U-5738  
 ROWAN COUNTY  
 STATION: 41+20.00 -L-  
 SHEET 1 OF 9

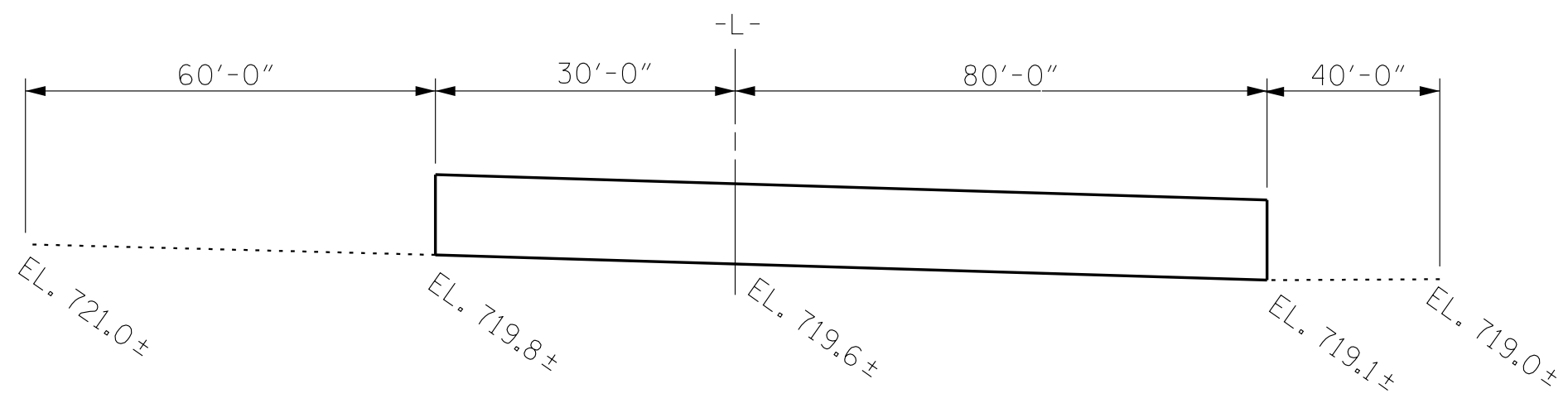
**V&M**  
 Vaughn & Melton  
 Consulting Engineers  
 Asheville, North Carolina  
 828-253-2796

- Boone, NC 828-355-9933
- Tri-Cities, TN 423-467-8401
- Knoxville, TN 865-546-5800
- Spartanburg, SC 864-574-4775
- Charleston, SC 843-974-9550
- Middlesboro, KY 606-248-6600
- Atlanta, GA 770-627-3509
- Raleigh, NC 919-977-9455
- Charlotte, NC 704-357-0488

Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**DOUBLE 7FT. X 8FT. CONCRETE BOX CULVERT EXTENSION**

### PROFILE ALONG CULVERT



DWN. BY: WC DATE: 10/2017  
 CHKD. BY: HLW DATE: 11/2017  
 DES. EGR. OF RECORD: RTS DATE: 11/2017

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			9