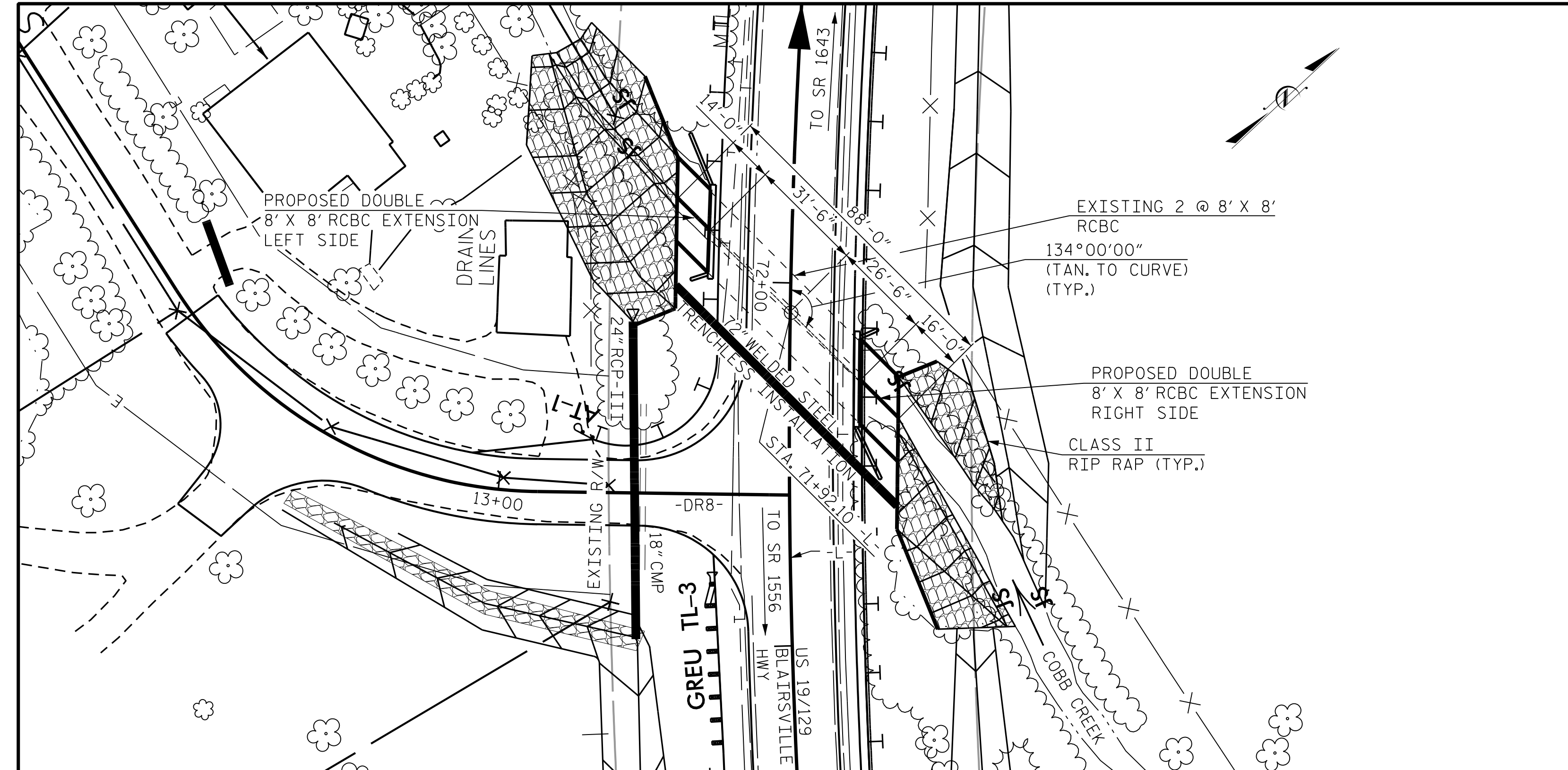


BENCH MARK: BM #4 -L- STA. 69+21.01, 80.5' RT, BENCHTIE NAIL IN 20" PINE, N 493887, E 479285; EL. 1630.12, NAVD 88



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS
 GRADE POINT ELEVATION AT STA. 71+92.10 = 1631.21
 INVERT ELEVATION AT STA. 71+92.10 = 1618.40
 ROADWAY SLOPES = 2:1

NOTES:

- ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
- DESIGN FILL----- 5.5 FT. (MAX.), 3.4 FT. (MIN.)
- 3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTE SHEET.
- CONCRETE IN BOTH LEFT AND RIGHT EXTENSION OF THE CULVERT TO BE POURED IN THE FOLLOWING ORDER:
 1. STAGE I FLOOR SLAB INCLUDING 4" OF VERTICAL WALL, CURTAIN WALL TO CONSTRUCTION JOINT, STAGE I WINGWALL FOOTING.
 2. REMAINING PORTION OF THE STAGE I WALLS TO THE CONSTRUCTION JOINT AND STAGE I WING FOR FULL HEIGHT.
 3. STAGE II FLOOR SLAB INCLUDING 4" OF VERTICAL WALL, REMAINING PORTION OF CURTAIN WALL, STAGE II WINGWALL AND PIPE HEADWALL FOOTING.
 4. REMAINING PORTION OF STAGE II WALLS TO THE PERMITTED CONSTRUCTION JOINT.
 5. ROOF SLAB, HEADWALL, REMAINING PIPE HEADWALL, STAGE II WING FOR FULL HEIGHT, AND SILL/BAFFLE.
- THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN 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 THE EXTERIOR WALLS, AND EACH FACE OF INTERIOR WALL, ABOVE THE 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.
- A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WINGS COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- NO PRECAST BOX CULVERT OPTION WILL BE ALLOWED.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, 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 EXTENSIONS. 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.

DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET CU-6-15.

EXCAVATE 1-FT BELOW CULVERT BEARING ELEVATION AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL (SELECT MATERIAL, CLASS VI).

UNDERCUT ANY SOFT/LOOSE ALLUVIAL SOILS THAT MAY BE ENCOUNTERED BENEATH THE BOTTOM OF THE FOUNDATION CONDITIONING MATERIAL. BACKFILL UNDERCUT AREA WITH FOUNDATION CONDITIONING MATERIAL

HYDRAULIC DATA

DESIGN DISCHARGE-----1500 C.F.S.
 FREQUENCY OF DESIGN FLOOD-----50 YR.
 DESIGN HIGH WATER ELEVATION-----1628.40
 DRAINAGE AREA-----2.17 SQ.MI
 BASE DISCHARGE (Q100)-----1700 C.F.S.
 BASE HIGH WATER ELEVATION-----1629.60

OVERTOPPING FLOOD DATA

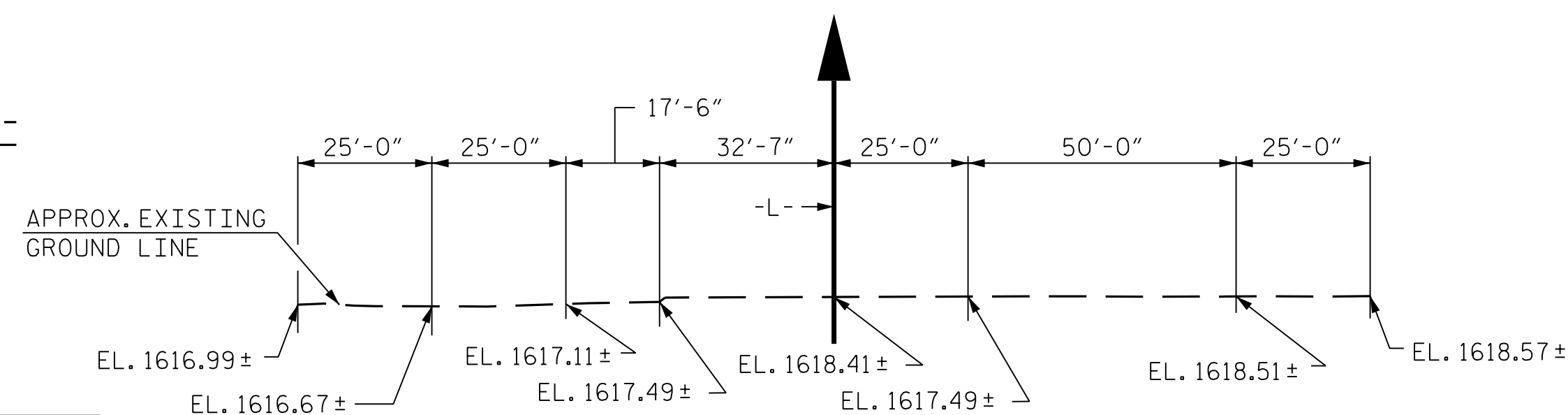
OVERTOPPING DISCHARGE-----1730 C.F.S.
 FREQUENCY OF OVERTOPPING FLOOD-----100 YR. +
 OVERTOPPING FLOOD ELEVATION-----1629.70
 SAG @ STA. 73+11.6 -L- LOW SIDE OF 6% SUPER

LEFT EXTENSION STRUCTURE QUANTITIES	
STAGE I	STAGE II
CLASS A CONCRETE	CLASS A CONCRETE
BARREL @ 0.83 CY/FT 11.7 C.Y.	BARREL @ 1.24 CY/FT 17.4 C.Y.
WING (W1) ETC. 15.1 C.Y.	WING (W2) ETC. 6.6 C.Y.
	PIPE HEADWALL 11.1 C.Y.
	SILLS 0.3 C.Y.
TOTAL 26.8 C.Y.	TOTAL 35.4 C.Y.
REINFORCING STEEL	REINFORCING STEEL
BARREL 2,205 LBS.	BARREL 2,904 LBS.
WING (W1) ETC. 1,958 LBS.	WING (W2) ETC. 294 LBS.
	PIPE HEADWALL 1,093 LBS.
TOTAL 4,163 LBS.	TOTAL 4,291 LBS.
CULVERT EXCAVATION ----- LUMP SUM	
* FOUNDATION CONDITIONING MATERIAL -- 12.2 TONS	* FOUNDATION CONDITIONING MATERIAL -- 22.8 TONS

RIGHT EXTENSION STRUCTURE QUANTITIES	
STAGE I	STAGE II
CLASS A CONCRETE	CLASS A CONCRETE
BARREL @ 0.83 CY/FT 13.2 C.Y.	BARREL @ 1.24 CY/FT 19.8 C.Y.
WING (W2) ETC. 6.3 C.Y.	WING (W1) ETC. 15.4 C.Y.
	PIPE HEADWALL 14.3 C.Y.
	SILLS 0.3 C.Y.
TOTAL 19.5 C.Y.	TOTAL 49.8 C.Y.
REINFORCING STEEL	REINFORCING STEEL
BARREL 2,483 LBS.	BARREL 3,219 LBS.
WING (W2) ETC. 294 LBS.	WING (W1) ETC. 1,958 LBS.
	PIPE HEADWALL 1,295 LBS.
TOTAL 2,777 LBS.	TOTAL 6,472 LBS.
CULVERT EXCAVATION ----- LUMP SUM	
* FOUNDATION CONDITIONING MATERIAL -- 13.9 TONS	* FOUNDATION CONDITIONING MATERIAL -- 29.1 TONS

HORIZONTAL CURVE DATA -L-

P.I. STA. 75+17.07
 Δ = 60°30'48.9" (RT)
 D = 2°47'41.7"
 L = 2,165.13'
 T = 1,195.85'
 R = 2,050.00'



PROFILE ALONG CULVERT

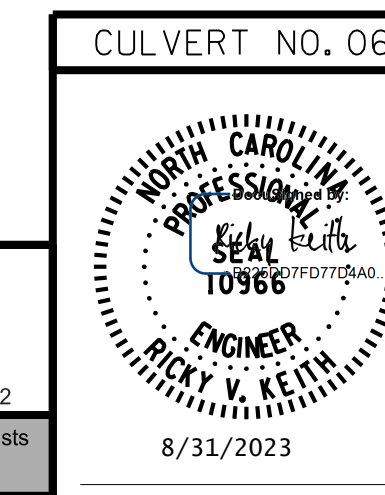
* INCLUDES 1' DEPTH UNDER PIPE HEADWALL FOOTINGS.

PROJECT NO. R-5861
CHEROKEE COUNTY
 STATION: 71+92.10 -L-

SHEET 1 OF 15 EXTENDS CULVERT NO. 190003

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DOUBLE 8 FT. X 8 FT.
 CONCRETE BOX CULVERT
 LEFT AND RIGHT EXTENSION
 134° SKEW



REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 15

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

8/31/2023 R:\Structures\Culverts\Culvert 6 - CobbCreek\DGNN\Final\R-5861_CU-6-1_190003.dgn