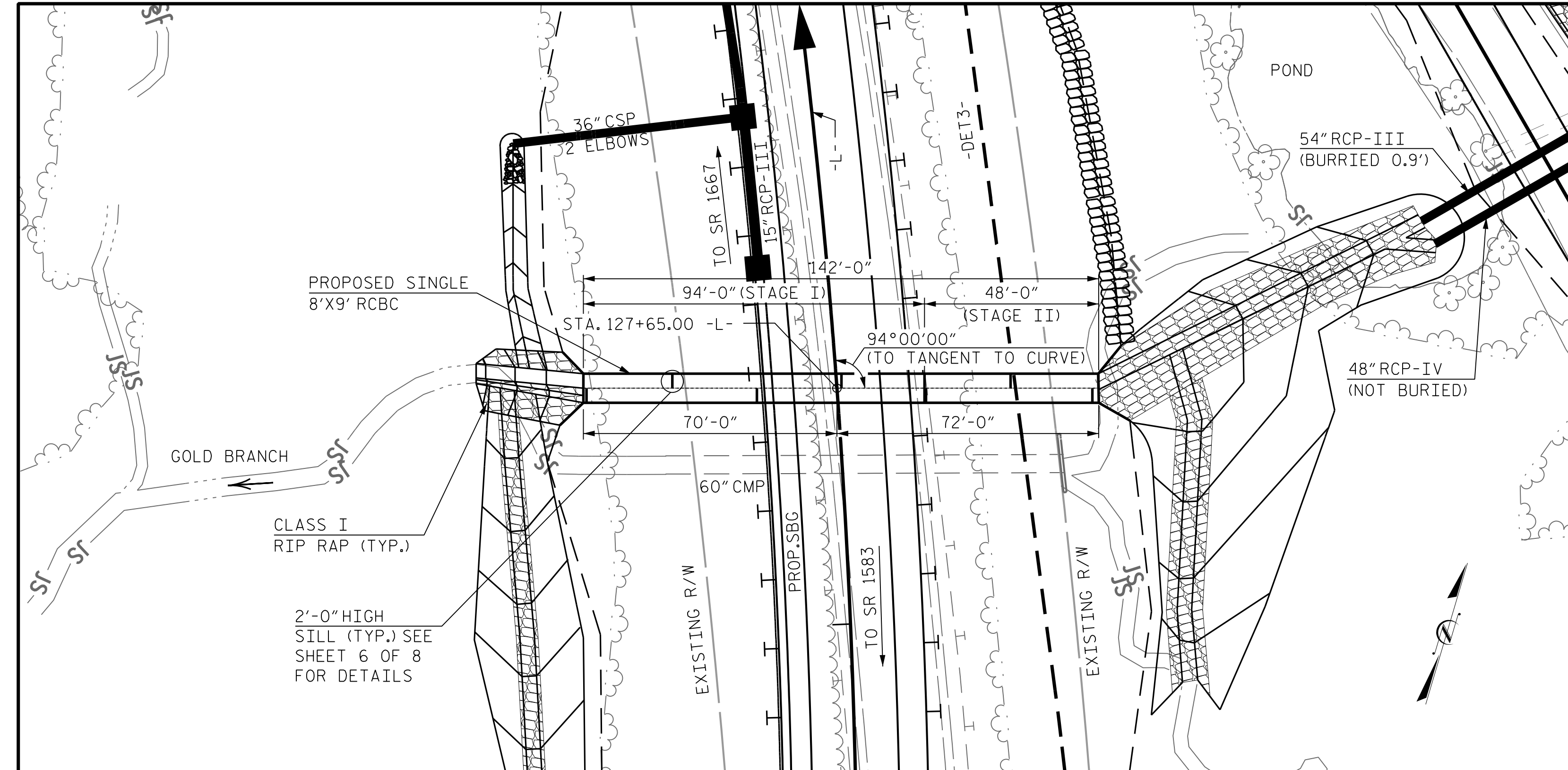


BENCH MARK: BM #7 -L- STA. 123+65.00, 38' LT, BENCHTIE NAIL IN 24" OAK, N 498955, E 477848; EL. 1676.10, NAVD 88



LOCATION SKETCH

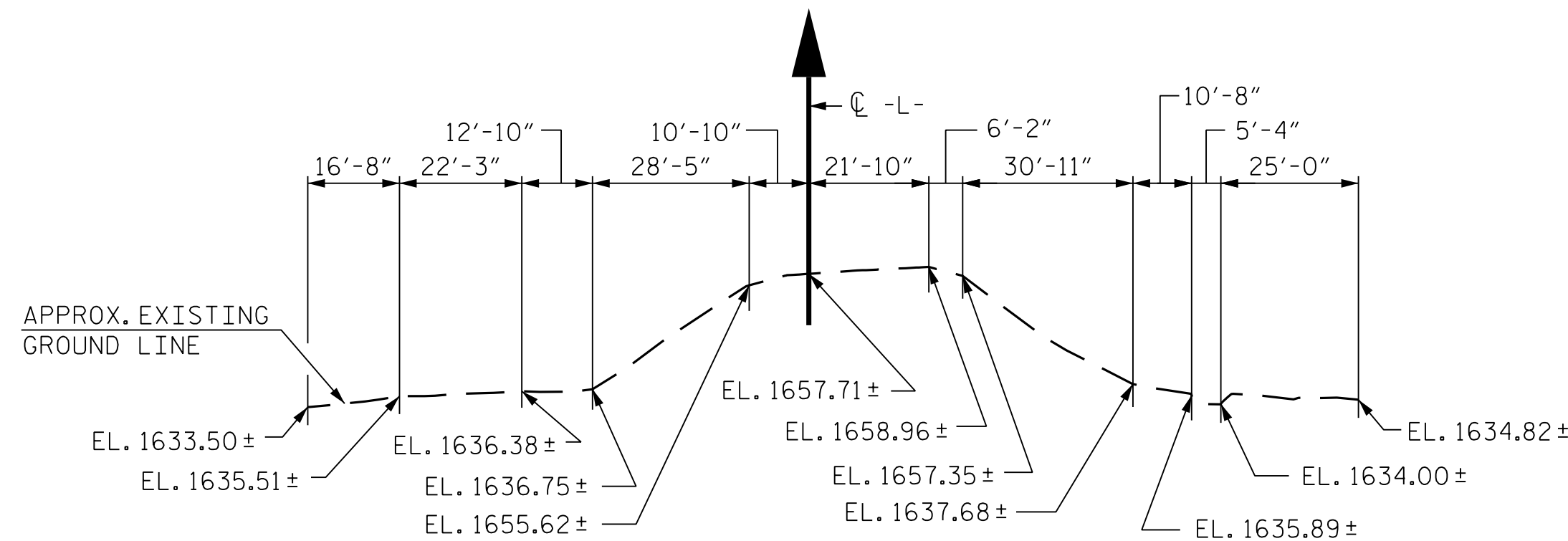
FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS
 GRADE POINT ELEVATION AT STA. 127+65.00 = 1664.63
 INVERT ELEVATION AT STA. 127+65.00 = 1631.30
 ROADWAY SLOPES = 2:1

STAGE I STRUCTURE QUANTITIES			
CLASS A CONCRETE			
BARREL @ 1.21	CY/FT	113.8	C.Y.
WING ETC.	15.0		C.Y.
SILLS/BAFFLES	2.3		C.Y.
TOTAL	131.1		C.Y.
REINFORCING STEEL			
BARREL	27,890		LBS.
WINGS ETC.	902		LBS.
TOTAL	28,792		LBS.
CULVERT EXCAVATION			LUMP SUM
FOUNDATION CONDITIONING MATERIAL			447 TONS

STAGE II STRUCTURE QUANTITIES			
CLASS A CONCRETE			
BARREL @ 1.21	CY/FT	58.1	C.Y.
WING ETC.	15.0		C.Y.
SILLS/BAFFLES	0.9		C.Y.
TOTAL	74.0		C.Y.
REINFORCING STEEL			
BARREL	14,181		LBS.
WINGS ETC.	902		LBS.
TOTAL	15,083		LBS.
CULVERT EXCAVATION			LUMP SUM
FOUNDATION CONDITIONING MATERIAL			228 TONS

HORIZONTAL CURVE DATA -L-

P.I. STA. 127+30.02
 $\Delta = 23^\circ 20' 58.3''$ (LT)
 $D = 2^\circ 41' 46.6''$
 $L = 865.99'$
 $T = 439.09'$
 $R = 2,125.00'$



PROFILE ALONG CULVERT

NOTES:

- ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
- DESIGN FILL----- 24.1 FT. (MAX.), 22.2 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 STAGE I CULVERT TO BE POURED IN THE FOLLOWING ORDER:
 1. STAGE I WING FOOTINGS, CURTAIN WALL, AND FLOOR SLAB INCLUDING 4" OF STAGE I VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF STAGE I WALLS TO THE PERMITTED CONSTRUCTION JOINT AND STAGE I WINGS FOR FULL HEIGHT.
 3. STAGE I ROOF SLAB, HEADWALL, AND SILL/BAFFLE.
- CONCRETE IN STAGE II CULVERT TO BE POURED IN THE FOLLOWING ORDER:
 1. STAGE II WING FOOTINGS, CURTAIN WALL, AND FLOOR SLAB INCLUDING 4" OF STAGE II VERTICAL WALLS.
 2. THE REMAINING PORTION OF STAGE II WALLS TO THE PERMITTED CONSTRUCTION JOINT AND STAGE II WINGS FOR FULL HEIGHT.
 3. STAGE II ROOF SLAB, HEADWALL, 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 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.
- EXCAVATE 1 FOOT BELOW CULVERT BEARING ELEVATION AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL (SELECT MATERIAL, CLASS VI). UNDERCUT AN ADDITIONAL 4 FEET AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL.
- 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.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

HYDRAULIC DATA

DESIGN DISCHARGE-----430 C.F.S.
 FREQUENCY OF DESIGN FLOOD-----50 YR.
 DESIGN HIGH WATER ELEVATION-----1641.30
 DRAINAGE AREA-----211.0 AC.
 BASE DISCHARGE (Q100)-----490 C.F.S.
 BASE HIGH WATER ELEVATION-----1642.00

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE-----1,614 C.F.S.
 FREQUENCY OF OVERTOPPING FLOOD-----500 YR. +
 OVERTOPPING FLOOD ELEVATION-----1665.10

PROJECT NO. R-5861
CHEROKEE COUNTY
 STATION: 127+65.00 -L-

SHEET 1 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SINGLE 8 FT. X 9 FT.
 CONCRETE BOX CULVERT
 94° SKEW

CULVERT NO. 04



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	CU_4-1
1			3			TOTAL SHEETS
2			4			8

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

7/20/2023 R:\Structures\Culverts\Culvert 4 - GoldBranch\GN\FinalR-5861_SMJ_CU_4-1_190000.dgn

DRAWN BY : B. H. GONFA DATE : JUN 2023
 CHECKED BY : K. HAWKINS DATE : JUN 2023
 DESIGN ENGINEER OF RECORD : K. HAWKINS DATE : JUN 2023