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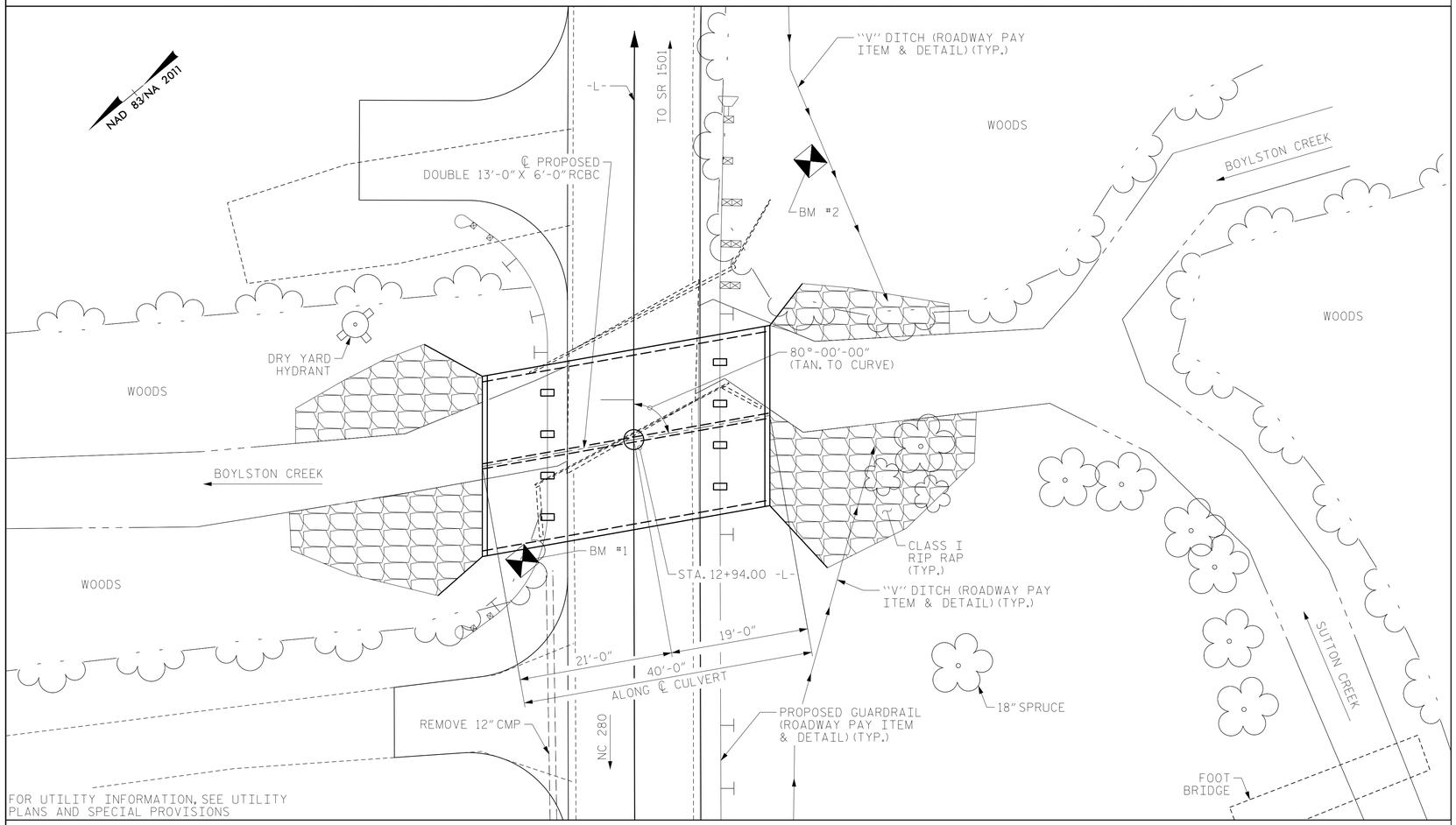
BENCHMARK #1: RAILROAD SPIKE IN BASE OF 35" LOCUST 16.82' LT. OF -L- STA. 12+75.75 EL. 2224.30'



LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD= HL-93 OR ALTERNATE LOADING.

DESIGN FILL = 0.74 FT.

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.

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

ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2012.

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.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

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.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS 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.

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.

THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 18'-3", TIMBER FLOOR ON TIMBER JOISTS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED CULVERT, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

EXCAVATE 1 FOOT BELOW CULVERT AND FOOTINGS AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414 OF THE STANDARD SPECIFICATIONS.

THE BOX CULVERT MAY BE DESIGNED FOR A FACTORED RESISTANCE OF UP TO 1.5 TSF AND BEARING ON ALLUVIAL SOILS. CHECK FIELD CONDITIONS FOR THE REQUIRED NOMINAL BEARING RESISTANCE OF 3.3 TSF JUST BEFORE PLACING CONCRETE.

FOR EROSION CONTROL MEASURES, CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

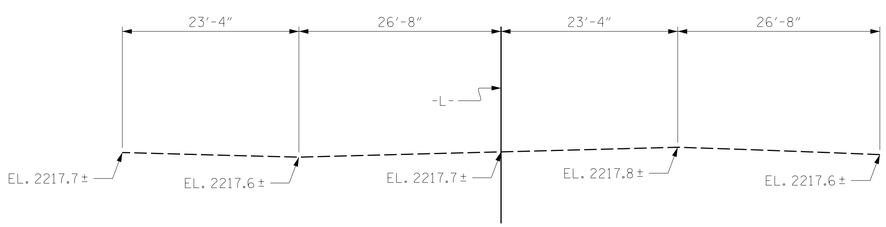
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

THIS STRUCTURE SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.



PROFILE ALONG ℄ CULVERT

NOTES (CONT'D)

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW CULVERT BARREL. IF RIP RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. BACKFILL RIP RAP IN FLOODPLAIN BENCHES OF CHANNEL IMPROVEMENTS WITH NATIVE MATERIAL TO FILL VOIDS. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. 17BP.14.R.127

TRANSYLVANIA COUNTY

STATION: 12+94.00 -L-

SHEET 1 OF 6 REPLACES BRIDGE NO. 106

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		REINFORCING STEEL			
BARREL @ 3.150 CY/FT	126.0 C.Y.	BARREL	16,223 LBS.	RIP RAP, CLASS I	121 TONS
WING ETC.	21.8 C.Y.	WINGS ETC.	938 LBS.	GEOTEXTILE FOR DRAINAGE	142 SQ. YDS.
SILLS	2.0 C.Y.	TOTAL	17,161 LBS.	CULVERT EXCAVATION	LUMP SUM
TOTAL	149.8 C.Y.			FOUNDATION COND. MAT'L.	80 TONS
				REMOVAL OF EXISTING STRUCTURE	LUMP SUM
				CHANNEL SUBSTRATE MATERIAL	15 TONS
				ASBESTOS ASSESSMENT	LUMP SUM

GRADE DATA

GRADE POINT ELEV. @ STA. 12+94.00 -L-	= 2224.48
BED ELEV.	= 2216.62
ROADWAY SLOPES	= VARIES

HYDRAULIC DATA

DESIGN DISCHARGE	= 600 CFS
FREQUENCY OF DESIGN FLOOD	= 10 YRS
DESIGN HIGH WATER ELEVATION	= 2223.6
DRAINAGE AREA	= 2.74 SQ. MI.
BASE DISCHARGE (Q100)	= 1200 CFS
BASE HIGH WATER ELEVATION	= 2225.29

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 725 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 10 YRS+
OVERTOPPING FLOOD ELEVATION	= 2224.2

NORTH CAROLINA PROFESSIONAL SEAL 18442 ENGINEER RICHARD LEON BOLLINGER JR.

DocuSigned by: SCB2173B3F9E4F... 5/9/2017

RS&H

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 13'-0" X 6'-0" CONCRETE BOX CULVERT

FOR BRIDGE OVER BOYLSTON CREEK ON SR 1502 BETWEEN NC 280 AND SR 1501

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1	RLB	05/05/17	3			TOTAL SHEETS
2			4			6

DRAWN BY :	MAL	DATE :	05/2015
CHECKED BY :	JMR	DATE :	05/2015
DESIGN ENGINEER OF RECORD :	JMR	DATE :	05/2015