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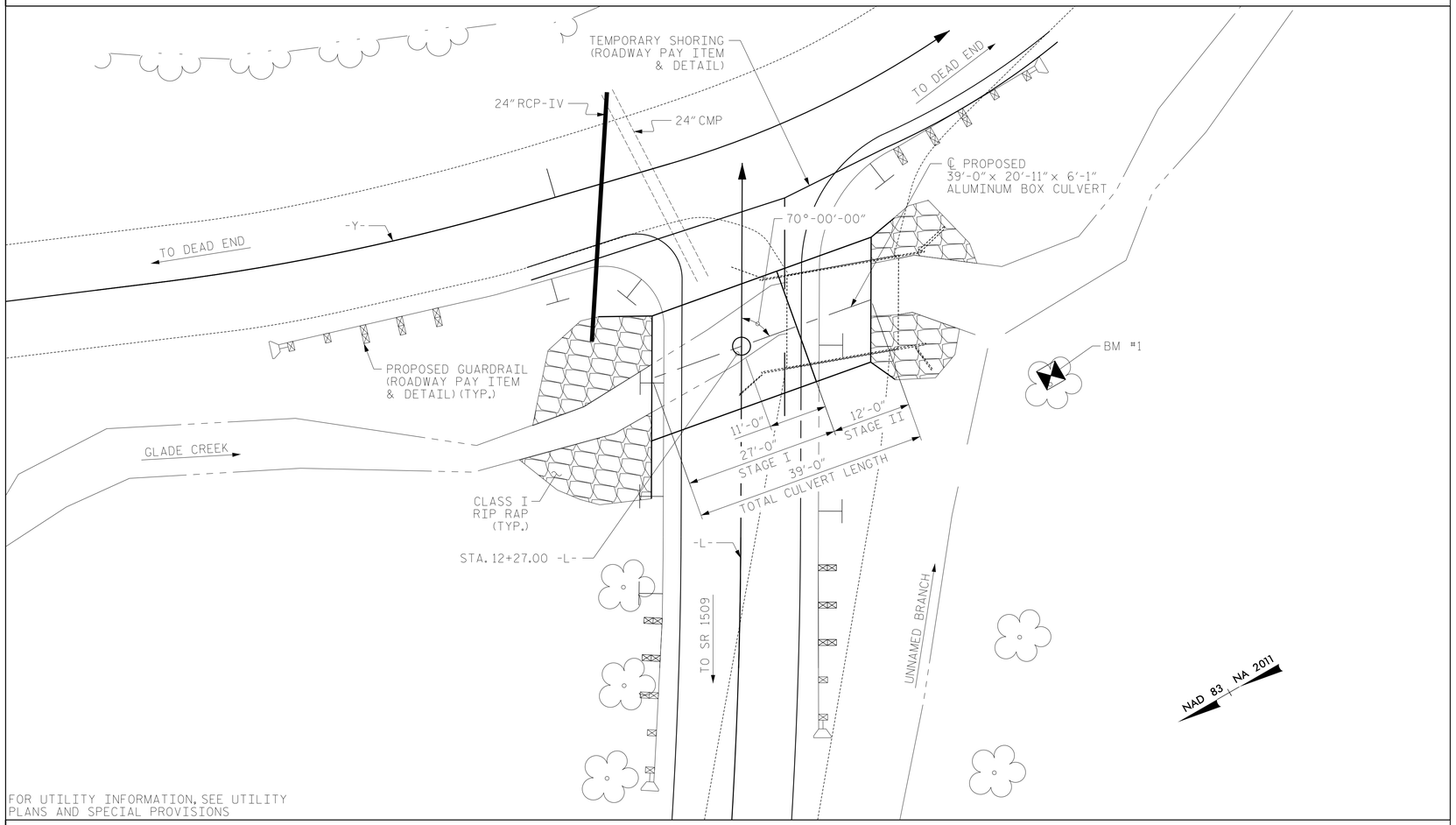
BENCHMARK #1: NAIL IN ROOT OF 18" WALNUT 23' RT. OF -BL- STA. 7+60.00 EL. 2117.40'



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD= HL-93 OR ALTERNATE LOADING.

CULVERT IS TO BE DESIGNED FOR A MINIMUM FILL DEPTH OF 1.87 FT. AND A MAXIMUM FILL DEPTH OF 3.01 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.

FOR ALUMINUM BOX CULVERT, SEE SPECIAL PROVISIONS.

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

THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS FOR REVIEW AND APPROVAL THAT MEET THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

USE STD 862.01 SHEET 10 OF 12 FOR GUARDRAIL PLACEMENT OVER CULVERT.

AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 16'-6", TIMBER FLOOR ON TIMBER JOISTS, TIMBER CAPS, AND TIMBER POSTS & SILLS AT VARIOUS CENTERS HEIGHT 7 FT CROWN TO BED SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, 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 A MINIMUM OF 1 FOOT BELOW THE CULVERT BEARING ELEVATION AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL PER SECTION 414 OF THE STANDARD SPECIFICATIONS.

THE SCOUR CRITICAL ELEVATION OF THE BOX CULVERT IS THE BOTTOM OF THE BOX CULVERT ELEVATION. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFETIME OF THE STRUCTURE.

THE BOX CULVERT MAY BE DESIGNED FOR A FACTORED RESISTANCE OF UP TO 7.5 TSF AND BEARING ON WEATHERED ROCK. CHECK FIELD CONDITIONS FOR THE REQUIRED NOMINAL BEARING RESISTANCE OF 16.6 TSF JUST BEFORE PLACING CONCRETE.

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

FOR CONSTRUCTION SEQUENCE, SEE EROSION 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.

TEMPORARY SHORING WILL BE REQUIRED IN THE AREAS INDICATED IN THE PLAN VIEW.

FOR TEMPORARY SHORING, SEE SPECIAL PROVISIONS.

STEEL SHEET PILING REQUIRED FOR SHORING SHALL BE HOT ROLLED.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

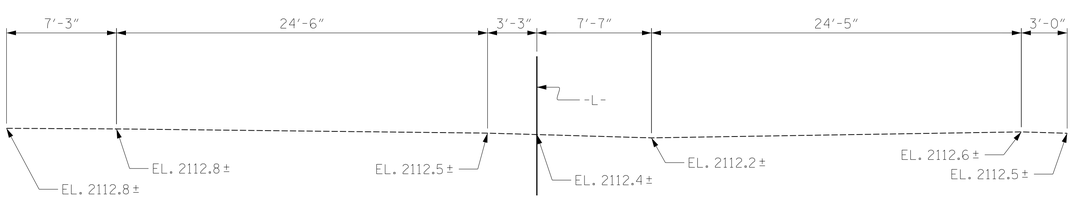
THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

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

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A CAST-IN-PLACE REINFORCED CONCRETE WING WALL.

IF AN INTERMEDIATE HEADWALL IS REQUIRED, THE PIPE MANUFACTURER IS RESPONSIBLE FOR THE DESIGN.



PROFILE ALONG ℄ CULVERT

ADDITIONAL NOTES

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."

NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

TOTAL STRUCTURE QUANTITIES

RIP RAP, CLASS I	
STAGE I	47 TONS
STAGE II	33 TONS
TOTAL	80 TONS
GEOTEXTILE FOR DRAINAGE	
STAGE I	43 SQ. YDS.
STAGE II	31 SQ. YDS.
TOTAL	74 SQ. YDS.
CULVERT EXCAVATION AT STA. 12+27.00 -L-	LUMP SUM
REMOVAL OF STRUCTURE AT STA. 12+27.00 -L-	LUMP SUM
ALUMINUM BOX CULVERT	LUMP SUM

GRADE DATA

GRADE POINT ELEV. @ STA. 12+27.00 -L-	= 2120.27
BED ELEV.	= 2111.52
ROADWAY SLOPES	= VARIES

HYDRAULIC DATA

DESIGN DISCHARGE	= 400 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YRS
DESIGN HIGH WATER ELEVATION	= 2117.3
DRAINAGE AREA	= 0.78 SQ. MI.
BASE DISCHARGE (Q100)	= 650 CFS
BASE HIGH WATER ELEVATION	= 2119.53

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 650 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 100 YRS
OVERTOPPING FLOOD ELEVATION	= 2119.5

PROJECT NO. 17BP.14.R.120
TRANSYLVANIA COUNTY
STATION: 12+27.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 163

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 18442 ENGINEER RICHARD LEON BOLLINGER JR.
Docu Signed by: 9/21/2016

RS&H
RS&H Architects-Engineers-Planners, Inc.
8601 Six Forks Road, Suite 260
Raleigh, NC 27615
919-926-4100 FAX 919-846-9080
www.rsandh.com
North Carolina License Nos. 50073 * F-0493 * C-28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 20'-11" X 6'-1" ALUMINUM BOX CULVERT
FOR BRIDGE OVER NORTH PRONG GLADE CREEK ON SR 1568 BETWEEN SR 1509 AND DEAD END

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

DRAWN BY :	DDC	DATE :	08/2014
CHECKED BY :	TRP	DATE :	08/2014
DESIGN ENGINEER OF RECORD :	RLB	DATE :	08/2014