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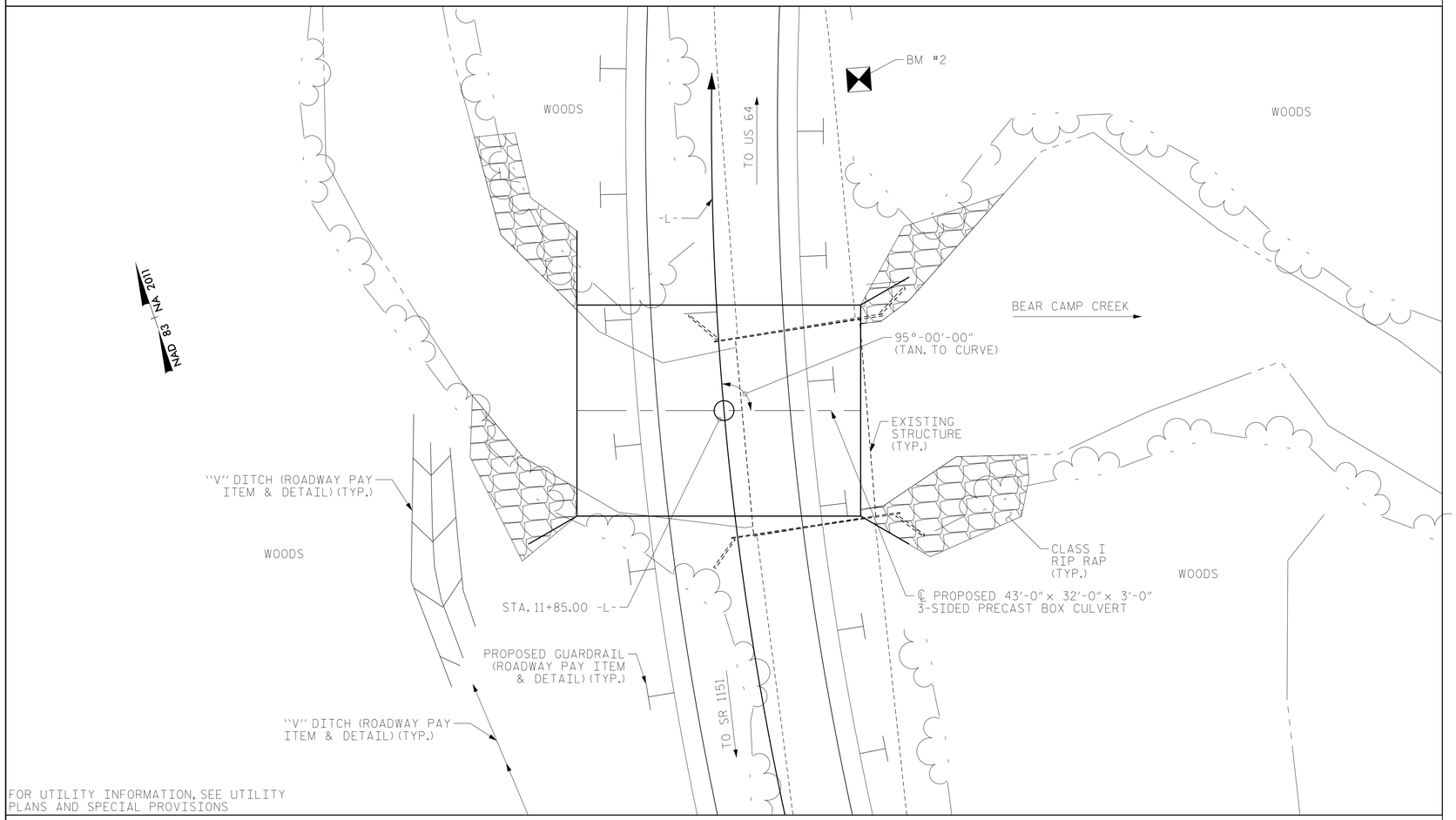
BENCHMARK #2: RAILROAD SPIKE IN BASE OF 14" POPLAR 7.46' RT. OF -BL- STA. 8+80.44 EL. 3142.33'



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 0.96 FT. AND A MAXIMUM FILL DEPTH OF 2.55 FT.

CAST-IN-PLACE CONCRETE SHALL BE POURED IN THE FOLLOWING ORDER:
1. CULVERT FOOTINGS AND WING FOOTINGS.
2. HEADWALLS, WING WALLS.

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.

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 PRECAST REINFORCED CONCRETE THREE-SIDED 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.

GUARDRAIL POST LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER TO ENSURE ADEQUATE COVER FOR INSTALLATION.

AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING STRUCTURE CONSISTING OF 2 SPANS @ 15'-3", TIMBER FLOOR ON TIMBER JOISTS 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 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.

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

THE SPREAD FOOTINGS ARE DESIGNED FOR A FACTORED RESISTANCE OF 4.0 TSF. CHECK FIELD CONDITIONS FOR THE REQURIED RESISTANCE OF 8.9 TSF JUST BEFORE PLACING CONCRETE.

KEY IN SPREAD FOOTINGS AT LEAST 12 INCHES INTO WEATHERED ROCK OR AT LEAST 6 INCHES INTO ROCK WITH MINIMUM THICKNESS SHOWN ON THE PLANS.

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

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

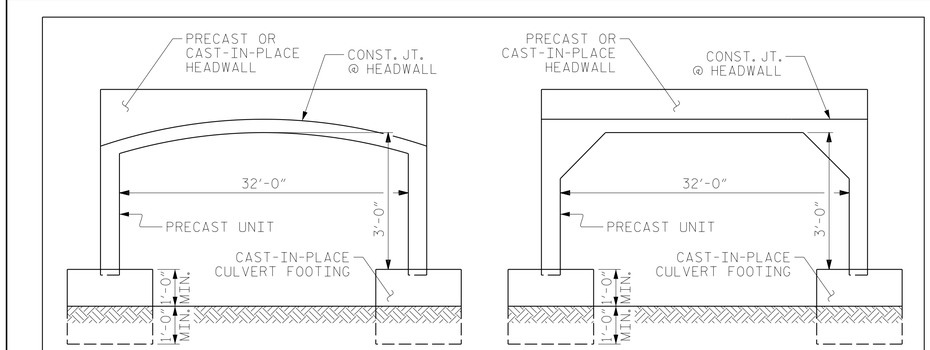
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

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

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

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

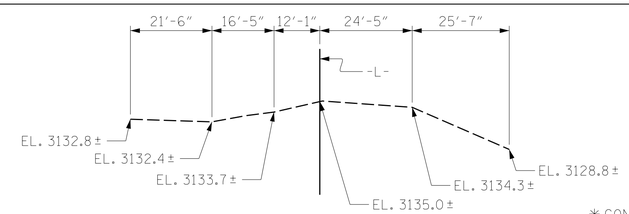


ARCH ALTERNATE

FLAT TOPPED ALTERNATE

RIGHT ANGLE SECTION OF
PRECAST CONCRETE THREE-SIDED CULVERT

MIN. REQUIRED WATERWAY OPENING = 126 SQ. FT.
MIN. LOW CHORD ELEV. = 3139.0 @ END OF CULVERT



PROFILE ALONG ℄ CULVERT

* CONCRETE AND REINFORCEMENT QUANTITIES INCLUDE CULVERT FOOTINGS, WING WALL FOOTINGS, WING WALLS AND HEADWALLS. THESE QUANTITIES ARE FOR BIDDING PURPOSES ONLY.

TOTAL STRUCTURE QUANTITIES

REMOVAL OF STRUCTURE AT STA. 11+85.00 -L-	LUMP SUM
UNCLASSIFIED STRUCTURE EXCAVATION	LUMP SUM
PRECAST REINFORCED CONCRETE THREE-SIDED CULVERT @ STA. 11+85.00 -L-	LUMP SUM
CLASS A CONCRETE *	36.2 C.Y.
REINFORCING STEEL *	3200 LBS.
FOUNDATION EXCAVATION	11.1 C.Y.
RIP RAP, CLASS I	76 TONS
GEOTEXTILE FOR DRAINAGE	84 SQ. YDS.

GRADE DATA

GRADE POINT ELEV. @ STA. 11+85.00 -L-	= 3142.45
BED ELEV.	= 3135.00±
ROADWAY SLOPES	= VARIES
TOP OF FOOTING ELEV.	= 3136.00

HYDRAULIC DATA

DESIGN DISCHARGE	= 550 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YRS
DESIGN HIGH WATER ELEVATION	= 3138.2
DRAINAGE AREA	= 1.56 SQ. MI.
BASE DISCHARGE (Q100)	= 800 CFS
BASE HIGH WATER ELEVATION	= 3139.55

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1850 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500 YRS+
OVERTOPPING FLOOD ELEVATION	= 3142.3

PROJECT NO. 17BP.14.R.125
TRANSYLVANIA COUNTY
STATION: 11+85.00 -L-

SHEET 1 OF 4 REPLACES BRIDGE NO. 090

NORTH CAROLINA PROFESSIONAL SEAL 18442 ENGINEER RICHARD LEON BOLLINGER JR.
Digitally signed by:
11/6/2017

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 32'-0" X 3'-0"
3-SIDED PRECAST
BOX CULVERT
FOR BRIDGE OVER BEAR
CAMP CREEK ON SR 1152
BETWEEN SR 1151 AND US 64

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

DRAWN BY :	MAL	DATE :	10/2014
CHECKED BY :	TRP	DATE :	10/2014
DESIGN ENGINEER OF RECORD :	MAL	DATE :	10/2014