BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	3'-0" DIA. DRILLED PIERS	SID INSPECTIONS	SPT TESTING	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	HP 12 X 53 STEEL PILES		TWO BAR METAL RAIL	VERTICAL CONCRETE BARRIER RAIL	1'-2" X 3'-8 7/8" CONCRETE PARAPET	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS		3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LIN.FT.	EACH	EACH	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	TONS	SQ.YDS.	LUMP SUM	NO.	LIN.FT.	NO.	LIN.FT.
SUPERSTRUCTURE							4385	4677.2		LUMP SUM					122.75	130.25	130.25			LUMP SUM	24	720	12	840
END BENT 1						LUMP SUM			15.0		2273		7	210				145	165					
BENT 1		138				LUMP SUM			17.4		12540	2627												
BENT 2		109							17.2		10955	2123												
END BENT 2									15.0		2273		7	245				125	140					
TOTAL	LUMP SUM	247	2	2	2	LUMP SUM	4385	4677.2	64.6	LUMP SUM	28041	4750	14	455	122.75	130.25	130.25	270	305	LUMP SUM	24	720	12	840

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE I.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

IN AS MUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 17+86.40 -L-."

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 23 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 6 SPANS, 1 SPAN @ 18'-0", 1 SPAN @ 22'-0", AND 4 SPANS @ 20'-0" WITH A TIMBER FLOOR ON STEEL I-BEAMS WITH A CLEAR ROADWAY OF 19'-2" ON TIMBER CAP WITH TIMBER PILE END BENTS AND BENTS AT BENTS 2 AND 4 AND WITH STEEL CRUTCH BENTS AT BENTS 1, 3 & 5 AND LOCATED DOWNSTREAM FROM THE PROPOSED BRIDGE 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 BRIDGE, THE LOAD LIMIT MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. SEE "REMOVAL OF EXISTING STRUCTURE" SPECIAL PROVISION.

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.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

THE CONCRETE SILLS LOCATED ON THE STREAM BANK AT END BENT 1 SHALL BE REMOVED. COST FOR REMOVAL SHALL BE INCLUDED IN "REMOVAL OF EXISTING STRUCTURE".

BENTS 1 AND 2 AND END BENT 2 SHALL BE CONSTRUCTED PRIOR TO CLOSING EXISTING ROAD. SEE TRAFFIC CONTROL PLANS FOR CONSTRUCTION STAGING.

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 60 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 105 TONS PER PILE.

INSTALL PILES AT END BENT 1 AND END BENT 2 TO A TIP ELEVATION NO HIGHER THAN 250 FT AND 244 FT.

THE SCOUR CRITICAL ELEVATIONS FOR END BENT 1, BENT 1, BENT 2 AND END BENT 2 ARE 267 FT, 249 FT, 246 FT AND 265 FT, RESPECTIVELY. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

DRILLED PIERS AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 395 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 10 TSF (L) AND 125 TSF (C, R).

DRILLED PIERS AT BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 395 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 130 TSF.

INSTALL DRILLED PIERS AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN 226 FT (L) AND 220 FT (C,R) WITH THE REQUIRED TIP RESISTANCE.

INSTALL DRILLED PIERS AT BENT 2 TO A TIP ELEVATION NO HIGHER THAN 229 FT (L, C) AND 234 FT (R) WITH THE REQUIRED TIP RESISTANCE.

SPT MAY BE REQUIRED FOR DRILLED PIERS AT BENT 1. THE ENGINEER WILL DETERMINE THE NEED FOR SPT. FOR SPT TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

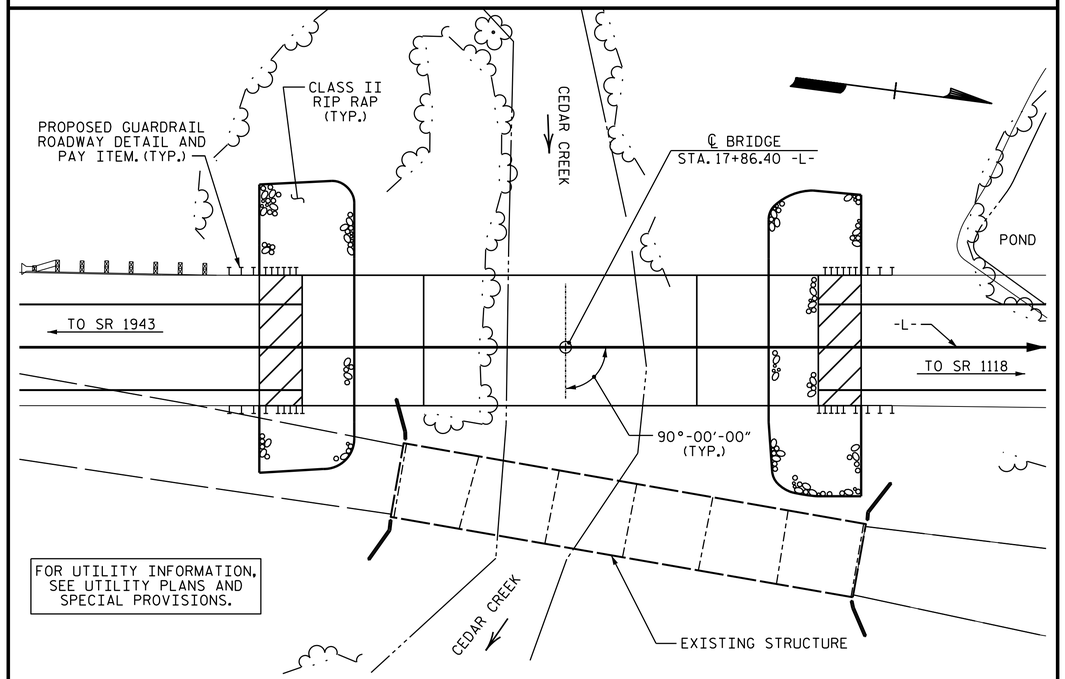
SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

OBSERVE A ONE AND A HALF MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT TO FINISHED GRADE PLUS TWO FEET OF SURCHARGE MATERIAL BEFORE BEGINNING END BENT CONSTRUCTION AT END BENT 2.

CONTRACTORS ARE ADVISED OF THE PRESENCE OF BOULDERS ON THE RIGHT SIDE OF END BENT 1, WHICH MAY INTERFERE WITH PILE DRIVING. ANY COST ASSOCIATED WITH REMOVAL OF BOULDERS, IF NECESSARY, WILL BE INCIDENTAL.

BM #2: NAIL IN 22" OAK TREE, STA. 17+47.09 -L-, 166.49' LEFT, ELEV. 270.07



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE _____ = 3400 C.F.S
FREQUENCY OF DESIGN FLOOD _____ = 25 YRS.
DESIGN HIGH WATER ELEVATION _____ = 273.7 FT.
DRAINAGE AREA _____ = 20.7 SQ. MI
BASE DISCHARGE (Q100) _____ = 5050 C.F.S
BASE HIGH WATER ELEVATION _____ = 275.59 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE _____ = 6499 C.F.S
FREQUENCY OF OVERTOPPING FLOOD _____ = 500 YRS.+
OVERTOPPING FLOOD ELEVATION _____ = 276.2 FT.

9/18/2014

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTIN W. ALFORD

DocuSigned by:
Kristin W. Alford
E5A6B3B90DBE49E...

PROJECT NO. B-5325
FRANKLIN COUNTY
STATION: 17+86.40 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER CEDAR CREEK ON SR 1116 BETWEEN SR 1943 AND SR 1118

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			28

DRAWN BY : Fr. LEA DATE : 3/2014
CHECKED BY : D. SHACKELFORD DATE : 4/2014

17-SEP-2014 07:34
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jpadams