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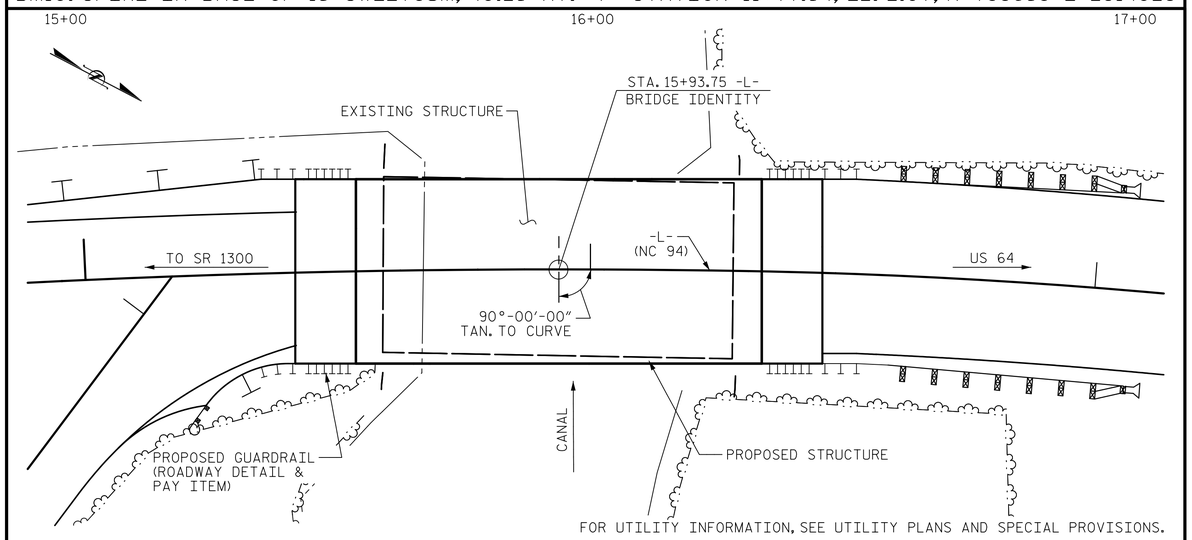
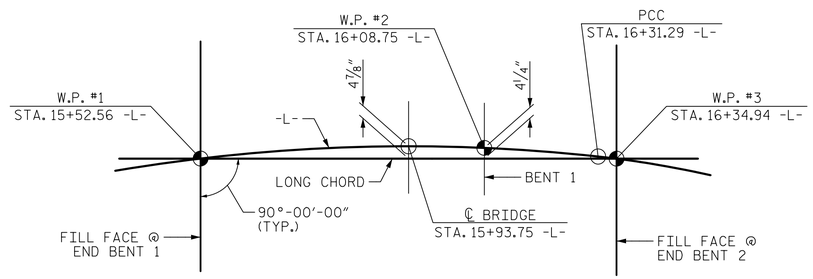
BM10: SPIKE IN BASE OF 15" SWEETGUM, 40.25' RT. -Y- STATION 11+77.54, EL. 2.07, N 798659 E 2814028



LOCATION SKETCH



CHORD LAYOUT

NOTE: EFFECTS OF THE HORIZONTAL CURVE SHALL BE NEGLECTED IN THE CONSTRUCTION OF THIS BRIDGE. BRIDGE TO BE BUILT ALONG THE CHORD BETWEEN THE WORK POINTS AT THE FILL FACES.

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASTHO LRFD BRIDGE DESIGN SPECIFICATIONS FOR SEISMIC ZONE 1.

THIS STRUCTURE CONTAINS THE NECESSARY CORROSION PROTECTION REQUIRED FOR A CORROSIVE SITE.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURE, SEE SPECIAL PROVISIONS.

MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCATED FOR A DISTANCE OF 24 FT TO THE LEFT AND 22 FT TO THE RIGHT OF THE 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 SPECIFICAITONS.

ALL METALLIZED SURFACES SHALL RECEIVE A SEAL COATING AS SPECIFIED IN THE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

CLASS AA CONCRETE SHALL BE USED IN ALL CAST-IN-PLACE COLUMNS, BENT CAPS, PILE CAPS, AND FOOTINGS, AND SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR.

FOR CALCIUM NITRITE CORROSION INHIBITOR, SEE THE STANDARD SPECIFICATIONS.

ALL BAR SUPPORTS USED IN THE PARAPET, BENT CAPS, END BENTS CAPS AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICAITONS.

THE CONCRETE IN THE BENT CAP, END BENT CAPS, AND PILES OF BENT NO. 1 AND END BENTS NO. 1 & 2 SHALL CONTAIN SILICA FUME. SILICA FUME SHALL BE SUBSTITUTED FOR 5% OF THE PORTLAND CEMENT BY WEIGHT. IF THE OPTION OF CLASS F FLY ASH FOR PORTLAND CEMENT IS EXERCISED, THEN THE RATE OF FLY ASH SUBSTITUTION SHALL BE REDUCED TO 1.0 LB OF FLY ASH PER 1.0 LB OF CEMENT. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING STRUCTURE CONSISTING OF 8 SPANS TOTALING 67'-0", WITH REINFORCED CONCRETE FLOORS AND TIMBER JOISTS, ON REINFORCED CONCRETE CAPS WITH TIMBER PILES, AND 35'-2' CLEAR ROADWAY TO 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 NECASSARY DURING THE LIFE OF THE PROJECT.

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 TRANSPORATION 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 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.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENTS No. 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 80 AND 50 TONS PER PILE, RESPECTIVELY.

DRIVE PILES AT END BENTS No. 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 135 AND 85 TONS PER PILE.

PILES AT BENT No. 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 95 TONS PER PILE.

DRIVE PILES AT BENT No. 1 TO A REQUIRED DRIVING RESISTANCE OF 195 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESITANCE FOR DOWNDRAG OR SCOUR.

INSTALL PILES AT BENT No. 1 TO A TIP ELEVATION NO HIGHER THAN -48 FT.

THE SCOUR CRITICAL ELEVATION FOR BENT No. 1 IS ELEVATION -12 FT. SCOUR CRITICAL ELEVATION IS USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 15 TO 25 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT No. 1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40 TO 50 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT No. 1. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS AND FOR PILE DRIVING CRITERIA, SEE PILE DRIVING CRITERIA PROVISION.

STEEL PILE TIPS ARE REQUIRED FOR PRESTRESSED CONCRETE PILES AT END BENTS No. 1 AND 2, AND BENT No. 1. FOR STEEL PILE TIPS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

HYDRAULIC DATA

DESIGN DISCHARGE_____ = 350 CFS.
FREQUENCY OF DESIGN FLOOD_____ = 50 YR.
DESIGN HIGH WATER ELEVATION_____ = 2.90 FT.
DRAINAGE AREA_____ = 1.23 SQ. MI.
BASE FLOOD DISCHARGE (Q100)_____ = 430 CFS.
BASE HIGH WATER ELEVATION_____ = 2.91 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE_____ = 1200 CFS
FREQUENCY OF OVERTOPPING FLOOD____ = 500(+) YR.
OVERTOPPING FLOOD ELEVATION_____ = 3.3 FT.*

*ROADWAY LOW POINT STA. 20+85.00 -L-

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STA 15+93.75 -L-	UNCLASSIFIED STRUCTURE EXCAVATION	GROOVING BRIDGE FLOORS	16" PRESTRESSED CONCRETE PILES		20" PRESTRESSED CONCRETE PILES		RIP RIP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	CONSTRUCTION OF SUBSTRUCTURE	CONSTRUCTION OF SUPERSTRUCTURE
	LUMP SUM	LUMP SUM	SQ. FT	No.	LIN. FT.	No.	LIN. FT.	TON	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE			3359								
END BENT 1				8	440.0			133	150		
BENT 1						8	440.0				
END BENT 2				8	440.0			139	155		
TOTAL	LUMP SUM	LUMP SUM	3359	16	880	8	440	272	305	LUMP SUM	LUMP SUM

PROJECT NO. 17BP.1.R.59
TYRRELL COUNTY
STATION: 15+93.75 -L-

SHEET 2 OF 2 REPLACES BRIDGE NO. 880009

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON NC 94 OVER CANAL BETWEEN SR 1300 AND US 64
36'-6" CLEAR ROADWAY - 90° SKEW

Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
PHONE: (919) 461-1100 FAX: (919) 461-1415
NC LIC.# C-2243

6/22/2015
NORTH CAROLINA PROFESSIONAL SEAL 039173 ENGINEER MATTHEW K. TOM
DocuSigned by: Matthew K. Tom
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : Z. H. BROWN DATE : 12/16/14
CHECKED BY : R. L. WHITCHER DATE : 1/15/15
DESIGNED BY : M. K. TOM DATE : 7/22/14

6/17/2015
S:\Tyrrell 09\Structures\Submittals\2015_05_19 Final Design and Tracings\Drawings\02 Tyrrell 09_GD_02.dgn
matt_tom