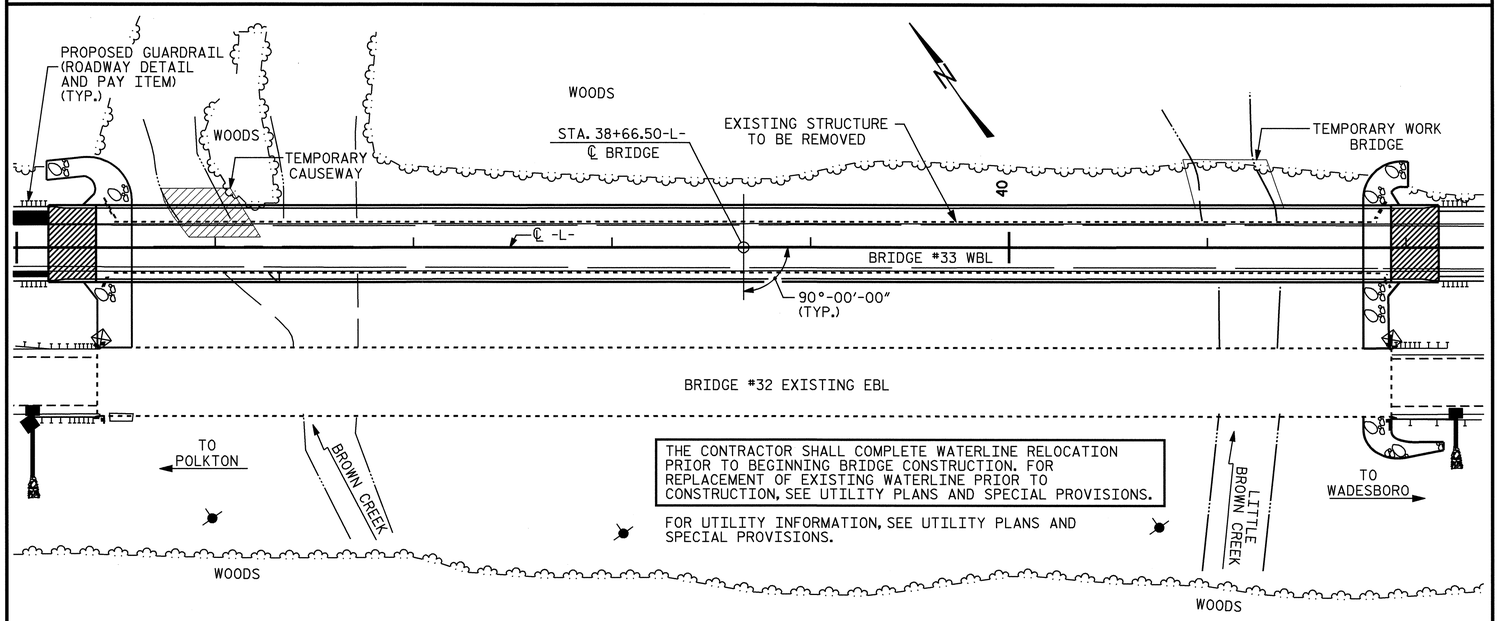
BENCH MARK No. 3: CHISLED SQUARE ON NORTHWEST HEADWALL OF EASTBOUND BRIDGE, STA. 35+42.63 -L-, 45.85' (RT.), EL. 255.530



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE	=	10140 C.F.S.
FREQUENCY OF DESIGN FLOOD	=	50 YRS.
DESIGN HIGH WATER ELEVATION	=	249.800
DRAINAGE AREA	=	93.4 SQ. MI.
BASIC DISCHARGE (Q100)	=	12400 C.F.S.
BASIC HIGH WATER ELEVATION	=	250.500

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	16000 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	=	100+ YRS.
OVERTOPPING FLOOD ELEVATION	=	251.600

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING 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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 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. FOR UNCLASSIFIED STRUCTURE EXCAVATION, SEE SPECIAL PROVISION.

THE SCOUR CRITICAL ELEVATION FOR BENTS NO. 1, 2, 3, 12 AND 13 ARE AS FOLLOWS: BENT 1- 237.500, BENT 2- 219.000, BENT 3- 225.000, BENT 12- 242.000 AND BENT 13 - 243.000. BRIDGE MAINTENANCE USES SCOUR CRITICAL ELEVATIONS TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SCOUR CRITICAL ELEVATION FOR BENTS NO. 4, 5, 6,7,8, 9,10 AND 11 ARE AS FOLLOWS: BENT 4- 242.000 BENT 5- 242.000, BENT 6- 242.500, BENT 7- 243.000, BENT 8- 243.500, BENT 9- 243.500, BENT 10- 243.500 AND BENT 11- 243.500. BRIDGE MAINTENANCE USES SCOUR CRITICAL ELEVATIONS TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR STEEL H PILES, SEE SPECIAL PROVISIONS.

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.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT PARTIAL REMOVAL OF THE EXSISTING ABUTMENT FOOTINGS IS REQUIRED TO ALLOW THE DRIVING OF THE PROPOSED PILES AT END BENTS #1 AND #2.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

SPT TESTING IS REQUIRED TO DETERMINE THE END BEARING CAPACITY OF THE DRILLED PIERS AT BENTS 1, 2, 3, 12 AND 13. SEE DRILLED PIERS SPECIAL PROVISION.

SID INSPECTIONS MAY BE REQUIRED TO INSPECT THE BOTTOM CLEANLINESS OF THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. SEE DRILLED PIERS SPECIAL PROVISION.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. SEE CROSSHOLE SONIC LOGGING SPECIAL PROVISION.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

JETTING IS NOT ALLOWED TO INSTALL PILES.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 38+66.50-L-.

NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING.

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 15 SIMPLE SPANS, 1 @ 45'-4", 2 @ 42'-3", 1 @ 42'-9", 7 @ 42'-6", 2 @ 42'-5", 1 @ 42'-8", AND 1 @ 45'-7" REINFORCED CONCRETE DECK GIRDERS ON FULL HEIGHT REINFORCED CONCRETE ABUTMENTS, REINFORCED CONCRETE CAP AND PILES AND REINFORCED CONCRETE POST AND WEB BENTS WITH A CLEAR ROADWAY WIDTH OF 26'-1" WITH A 2½" ASPHALT WEARING SURFACE AND LOCATED AT THE PROPOSED SITE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT.

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.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", NOVEMBER, 1995.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.

STEEL PILE POINTS WITH TEETH ARE REQUIRED FOR STEEL PILES AT BENTS 4 THROUGH 11. SEE STEEL PILE POINTS SPECIAL PROVISION.

DRIVE PILES AT BENT 4 TO AN ELEVATION NO HIGHER THAN EL. 222.000 AND A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

DRIVE PILES AT BENT 5 TO AN ELEVATION NO HIGHER THAN EL. 225.000 AND A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

DRIVE PILES AT BENT 6 TO AN ELEVATION NO HIGHER THAN EL. 224.000 AND A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

DRIVE PILES AT BENT 7 TO AN ELEVATION NO HIGHER THAN EL. 222.000 AND A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

DRIVE PILES AT BENT 8 TO AN ELEVATION NO HIGHER THAN EL. 223.000 AND A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

DRIVE PILES AT BENT 9 TO AN ELEVATION NO HIGHER THAN EL. 228.000 AND A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

DRIVE PILES AT BENT 10 TO AN ELEVATION NO HIGHER THAN EL. 227.000 AND A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

DRIVE PILES AT BENT 11 TO AN ELEVATION NO HIGHER THAN EL. 226.000 AND A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

DRIVE PILES AT END BENTS NO. 1 AND NO. 2 TO A MINIMUM BEARING CAPACITY OF 50 TONS EACH.

PROVIDE GALVANIZED STEEL PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS AND THE GALVANIZING STEEL PILES SPECIAL PROVISIONS.

DRILLED PIERS AT BENTS 1,2,3,12 AND 13 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY. THE END BEARING CAPACITIES ARE AS FOLLOWS: BENT 1 - 23 TSF, BENTS 2,3 AND 12 - 25 TSF AND BENT 13 - 24 TSF.

DRILLED PIERS AT BENTS 1,2,3, 12 AND 13 ARE DESIGNED FOR AN APPLIED LOAD OF BENT 1 - 192 TONS, BENTS 2,3 AND 12 - 207 TONS AND BENT 13 - 192 TONS EACH AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENTS 1,2,3,12 AND 13. DO NOT EXTEND THE CASING BELOW THE FOLLOWING ELEVATIONS WITHOUT PRIOR APPROVAL FROM THE ENGINEER. BENT 1 - EL. 224.000, BENT 2 - EL. 218.000, BENT 3 - EL.218.000, BENT 12 - EL.228.000 AND BENT 13 - EL. 224.000.

FOR PERMANENT STEEL CASING, SEE DRILLED PIERS SPECIAL PROVISION.

DRILLED PIERS AT BENT 1 MUST EXTEND TO AN ELEVATION NO HIGHER THAN EL. 219.000, SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 5 FEET INTO ROCK AS DEFINED BY THE DRILLED PIER SPECIAL PROVISION.

DRILLED PIERS AT BENT 2 MUST EXTEND TO AN ELEVATION NO HIGHER THAN EL 210.000, SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 8 FEET INTO ROCK AS DEFINED BY THE DRILLED PIER SPECIAL PROVISION.

DRILLED PIERS AT BENT 3 MUST EXTEND TO AN ELEVATION NO HIGHER THAN EL 213.000, SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 5 FEET INTO ROCK AS DEFINED BY THE DRILLED PIER SPECIAL PROVISION.

DRILLED PIERS AT BENT 12 MUST EXTEND TO AN ELEVATION NO HIGHER THAN EL 219.000, SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 9 FEET INTO ROCK AS DEFINED BY THE DRILLED PIER SPECIAL PROVISION.

DRILLED PIERS AT BENT 13 MUST EXTEND TO AN ELEVATION NO HIGHER THAN EL 217.000, SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 7 FEET INTO ROCK AS DEFINED BY THE DRILLED PIER SPECIAL PROVISION.

DRILLED PIER EXCAVATIONS AT BENTS 1, 2, 3, 12 AND 13 WILL EXTEND INTO MATERIAL THAT DETERIORATES WHEN EXPOSED TO THE ELEMENTS. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY AND PLACE CONCRETE IMMEDIATELY AFTER THE EXCAVATION IS COMPLETE.

FOR DRILLED PIERS, SEE DRILLED PIERS SPECIAL PROVISION.

TESTING PILES WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING OR RE DRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. SEE PILE DRIVING ANALYZER SPECIAL PROVISION.

WHEN DRIVING PILES, DO NOT EXCEED THE MAXIMUM BLOW COUNT.

PROJECT NO. B-4009

ANSON COUNTY

STATION: 38+66.50-L-

SHEET 7 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE OVER BROWN CREEK ON US 74 BETWEEN POLKTON AND WADESBORO

NORTH CAROLINA PROFESSIONAL SEAL 10730 ENGINEER D. ANDREW DAVENPORT
12-12-05

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			64

DRAWN BY : HTB / SPL DATE : 08/05
CHECKED BY : D. A. DAVENPORT DATE : 08/05

12-DEC-2005 08:11
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