

TOTAL BILL OF MATERIAL

	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	1066mm DIA. DRILLED PIERS IN SOIL	1066mm DIA. DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 1066mm DIA. DRILLED PIER	SID INSPECTION	SPT TESTING	CROSSHOLE SONIC LOGGING	CSL TUBES	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS "A" CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	1372mm PRESTRESSED CONCRETE GIRDERS	HP 310 X 79 STEEL PILES	CONCRETE BARRIER RAIL	PLAIN RIP RAP CLASS II (600mm THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS		
	METERS	METERS	METERS	METERS	METERS	EACH	EACH	EACH	METERS	SQ. METERS	SQ. METERS	CU. METERS	LUMP SUM	KG	KG	NO.	METERS	NO.	METERS	METERS	METRIC TONS	SQ. METERS	LUMP SUM	LUMP SUM
SUPERSTRUCTURE										1784.2	902.2		LUMP SUM			24	570.912			287.872			LUMP SUM	LUMP SUM
END BENT 1	6	6										22.2		1854				9	37		100	100		
BENT 1			19.6	7.3	10.9			1	117.7			27.6		5390	1337									
BENT 2			42.5	6.3		1	3		205.2			26.7		7000	1972									
BENT 3			34.4	6.4		1		1	173.4			27.3		6436	1753									
BENT 4			24.1	6.9					134.1			29.2		5905	1546									
BENT 5			18.2	8.1				1	115.2			30.0		5625	1438									
END BENT 2												22.2		1857			9	120		420	420			
TOTAL	6	6	138.8	35.0	10.9	2	3	3	745.6	1784.2	902.2	185.2	LUMP SUM	34,067	8046	24	570.912	18	157	287.872	520	520	LUMP SUM	LUMP SUM

CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS - LUMP SUM

GENERAL NOTES

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

ALL ELEVATIONS ARE IN METERS.

ASSUMED LIVE LOAD = MS 18 OR ALTERNATE LOADING.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

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

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 300mm BELOW THE GROUND LINE.

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.

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.

FOR TEMPORARY WORKBRIDGE, SEE CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS SPECIAL PROVISION.

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

PILES AT END BENT NOS. 1 & 2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 530 kN EACH.

PILE EXCAVATION SHALL BE UTILIZED TO INSTALL PILES TO ELEVATION 57.2 m AT END BENT 1 (LEFT). SEE PILE EXCAVATION SPECIAL PROVISION.

WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.

THE DRILLED PIERS AT BENT NOS. 1 AND 5 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 2900 kPa.

THE DRILLED PIERS AT BENT NOS. 2, 3, AND 4 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 1400 kPa.

THE REQUIRED TIP BEARING AT BENT NOS. 1 THROUGH 5 SHALL BE VERIFIED.

DRILLED PIERS FOR BENT NOS. 1 THROUGH 5 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 2,330 kN AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS NOT REQUIRED FOR DRILLED PIERS AT BENT NOS. 2, 3, 4, OR 5.

PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO. 1. IF REQUIRED, THE CASING SHALL NOT EXTEND BELOW ELEVATION 51.0 m WITHOUT THE ENGINEER'S PERMISSION. THE NEED FOR PERMANENT STEEL CASING WILL BE DETERMINED BY THE ENGINEER.

DRILLED PIERS AT BENT NO. 1 (LEFT AND CENTER) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 46.0 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 1 (RIGHT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 45.0 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 39.0 m AND SATISFY REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 3 (LEFT AND CENTER) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 42.0 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 3 (RIGHT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 40.5 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 4 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 44.0 m AND SATISFY REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 5 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 45.5 m AND SATISFY REQUIRED TIP BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATION FOR BENT NOS. 1 THROUGH 5 IS 52.8 m. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.

SPT TESTING IS REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO. 2.

SPT TESTING IS NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NOS. 1, 3, 4, OR 5.

SID INSPECTIONS MAY BE REQUIRED TO DETERMINE THE BOTTOM CLEANLINESS OF THE DRILLED PIERS AT BENT NOS. 1, 2, 3, 4 OR 5.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENT NOS. 1 THROUGH 5. SEE SPECIAL PROVISIONS FOR CROSSHOLE SONIC LOGGING.

THE CONTRACTOR HAS THE OPTION OF USING EITHER SLURRY CONSTRUCTION OR TEMPORARY CASING TO CONSTRUCT THE DRILLED PIERS.

DO NOT DEWATER THE DRILLED PIER EXCAVATIONS AT BENT NOS. 1, 2, 3, 4 OR 5. CLEAN THE BOTTOM OF THE EXCAVATION WITH A SUBMERSIBLE PUMP OR AN AIRLIFT. WET PLACEMENT OF CONCRETE IS REQUIRED. SEE DRILLED PIER SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR METRIC STRUCTURAL STEEL, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR FABRICATED METAL-STAY-IN-PLACE FORMS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.



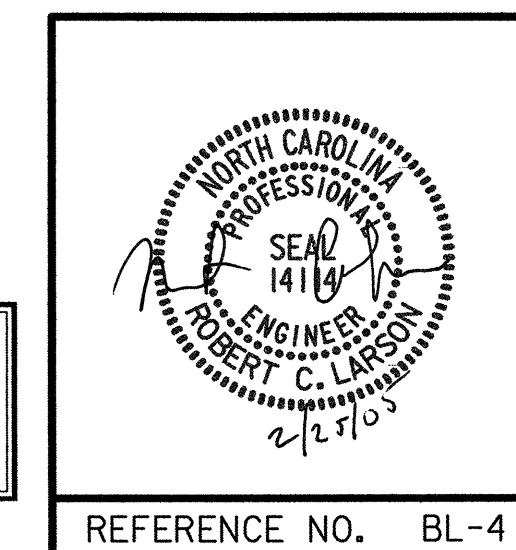
PROJECT NO. R-2552C
JOHNSTON COUNTY
 STATION: 109+56.000 -L2LT- POT

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 TOTAL BILL OF
 MATERIAL
 (LEFT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-127
2			4			431



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DRAWN BY: W. B. ALLEN DATE: 9/04
 CHECKED BY: R. C. LARSON DATE: 1/05

REFERENCE NO. BL-4