

TOTAL BILL OF MATERIAL

	PERMANENT STEEL CASING FOR 1220mm DIA. DRILLED PIER	1220mm DIA. DRILLED PIERS IN SOIL	1220mm DIA. DRILLED PIERS NOT IN SOIL	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	1829mm MODIFIED BULB TEE 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	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								1688.7	1590.4		LUMP SUM			10	257.390	10	387.296				LUMP SUM	LUMP SUM		
END BENT 1										33.2		2547				12	180		1000	1000				
BENT 1		31.3	8.7	1	2	1	170.2			46.5		13,368	2538											
BENT 2	14.6	15.6	9.2	1			109.4			49.7		12,076	2015						90	90				
BENT 3	8.4	14.7	9.9	1			108.6			48.1		9448	2036											
END BENT 2										38.1		3023				16	240		1225	1225				
TOTAL	23.0	61.6	27.8	3	2	1	388.2	1688.7	1590.4	215.6	LUMP SUM	40,462	6589	10	257.390	10	387.296	28	420	260.194	2315	2315	LUMP SUM	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.

TEMPORARY WORK BRIDGE IS PAID FOR UNDER THE LEFT LANE STRUCTURE.

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.

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

THE DRILLED PIERS AT BENT NO. 1 (LEFT AND CENTER) HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 1400 kPa.

THE DRILLED PIERS AT BENT NO. 1 (RIGHT), BENT NO. 2, AND BENT NO. 3 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 2900 kPa.

THE REQUIRED TIP BEARING AT BENT NOS. 1, 2, AND 3 SHALL BE VERIFIED.

DRILLED PIERS FOR BENT NOS. 1, 2, AND 3 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 4,287 kN AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO. 2 AND THE CASING SHALL NOT EXTEND BELOW ELEVATION 51.4 m (LEFT) OR ELEVATION 49.5 m (CENTER) OR ELEVATION 44.7 m (RIGHT) WITHOUT THE ENGINEER'S PERMISSION.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO. 3 AND THE CASING SHALL NOT EXTEND BELOW ELEVATION 51.4 m WITHOUT THE ENGINEER'S PERMISSION.

PERMANENT STEEL CASING IS NOT REQUIRED FOR DRILLED PIERS AT BENT NO. 1.

DRILLED PIERS AT BENT NO. 1 (LEFT AND CENTER) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 39.3 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 1 (RIGHT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 42.5 m, SATISFY THE REQUIRED TIP BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 2.5 m INTO ROCK AS DEFINED BY THE DRILLED PIER SPECIAL PROVISION.

DRILLED PIERS AT BENT NO. 2 (LEFT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 47.0 m, SATISFY THE REQUIRED TIP BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 1.5 m INTO ROCK AS DEFINED BY THE DRILLED PIER SPECIAL PROVISION.

DRILLED PIERS AT BENT NO. 2 (CENTER) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 47.0 m, SATISFY THE REQUIRED TIP BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 2.5 m INTO ROCK AS DEFINED BY THE DRILLED PIER SPECIAL PROVISION.

DRILLED PIERS AT BENT NO. 2 (RIGHT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 41.4 m, AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 3 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 46.0 m, AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATION FOR BENT NOS. 1, 2, AND 3 IS 50.5 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. 1 (LEFT AND CENTER)

SPT TESTING IS NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO. 1 (RIGHT), BENT NO. 2, OR BENT NO. 3.

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

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENT NOS. 1 THROUGH 3. 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 OR 3. 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: 110+37.000 -L2RT- POC

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
TOTAL BILL OF
MATERIAL
(RIGHT LANE)

REVISIONS

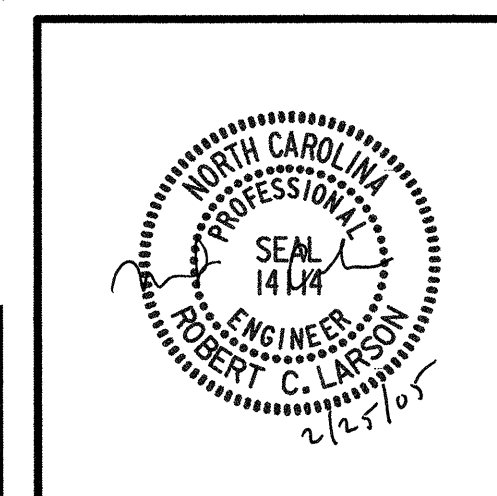
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.

5-230

TOTAL SHEETS

431



REFERENCE NO. BR-5