

TOTAL BILL OF MATERIAL

	PERMANENT STEEL CASING FOR 1066mm DIA. DRILLED PIER	1066mm DIA. DRILLED PIERS IN SOIL	1066mm 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	MODIFIED 1600mm PRESTRESSED CONCRETE GIRDER	HP 310 X 79 STEEL PILES	CONCRETE BARRIER RAIL	PLAIN RIP RAP CLASS I (600mm THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	
	METERS	METERS	METERS	EACH	EACH	EACH	METERS	SQ. METERS	SQ. METERS	CJ. METERS	LUMP SUM	KG	KG	NO. METERS	NO. METERS	METERS	METRIC TONS	SQ. METERS	LUMP SUM	LUMP SUM	
SUPERSTRUCTURE								2377.2	2177.8		LUMP SUM			24	726.976					LUMP SUM	LUMP SUM
END BENT 1										33.2		2479			12	204		360	365		
BENT 1	8.2	40.1	5.9	1	3	1	194.4			29.7		7557	2017								
BENT 2	3.6	33.7	3.6				159.3			28.9		6770	1702								
BENT 3	9.3	30.9	3.6	1	3	1	148.2			28.5		6504	1595								
BENT 4	9.2	41.6	5.4				198.3			28.3		7472	1977								
BENT 5		34.6	3.5	1	3	1	162.8			26.2		6506	1589								
END BENT 2										33.2		2479			12	108		205	210		
TOTAL	30.3	180.9	22.0	3	9	3	863.0	2377.2	2177.8	208.0	LUMP SUM	39,767	8880	24	726.976	24	312	365.866	565	575	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 NOS. 1 THROUGH 5 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 2,983 KN AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS NOT REQUIRED FOR DRILLED PIERS AT BENT NO. 5.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NOS. 1 THROUGH 4 AND THE CASING SHALL NOT EXTEND BELOW ELEVATION 58.0 WITHOUT THE ENGINEER'S PERMISSION.

DRILLED PIERS AT BENT NO. 1 (LEFT AND CENTER) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 43.0 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 1 (RIGHT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 50.2 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 48.6 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 3 (LEFT AND CENTER) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 48.6 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 3 (RIGHT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 51.6 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 4 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 45.4 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 5 (LEFT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 50.8 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 5 (CENTER AND RIGHT) SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 48.6 m AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATION FOR BENT NOS. 1 THROUGH 4 IS 60.0 m, 60.0 m, 59.8 m, AND 59.8 m, RESPECTIVELY. 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 NOS. 1, 3, AND 5.

SPT TESTING IS NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NOS. 2 AND 4.

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.

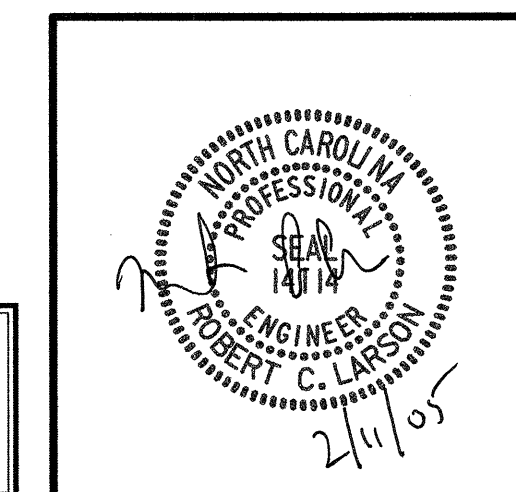


PROJECT NO. R-2552AA
WAKE - JOHNSTON COUNTY
 STATION: 14+38.000 -LREV- POT

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
TOTAL BILL OF
MATERIAL &
GENERAL NOTES
(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-127
2			4			429



REFERENCE NO. BR-4

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DRAWN BY : W. B. ALLEN DATE : 12/04
 CHECKED BY : R. C. LARSON DATE : 12/04