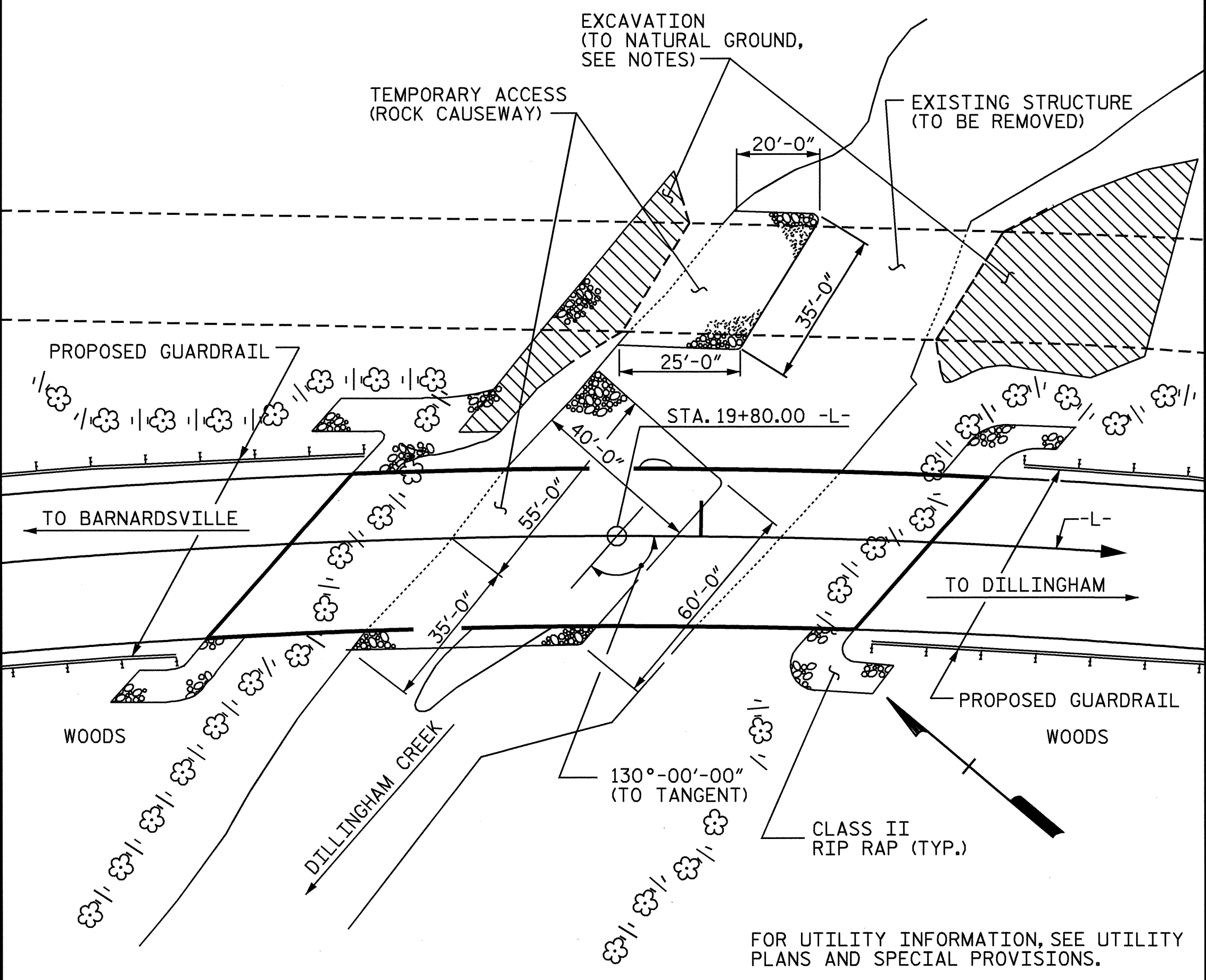


BENCH MARK : BM2 SPIKE SET IN BASE OF 24" POPLAR -L- STA. 19+19.12 ± 108' LT ELEV. 2267.610



LOCATION SKETCH

**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.  
 REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.  
 AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING STRUCTURE CONSISTING OF 2 SPANS (36 FT. AND 35.8 FT.) WITH TIMBER DECK ON I-BEAMS; CLEAR ROADWAY WIDTH OF 24.1 FT. ON VERTICAL ABUTMENTS AND MASS PIERS AND LOCATED UPSTREAM FROM PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.  
 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 MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FEET 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 PROVISIONS.  
 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 B.  
 THE FILL SLOPES OF THE EXISTING BRIDGE SHALL BE REMOVED TO NATURAL GROUND AS DIRECTED BY THE ENGINEER. THIS EXCAVATION SHALL BE PAID FOR IN THE 'REMOVAL OF EXISTING STRUCTURE' PAY ITEM.  
 NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

THE CONTRACTOR MAY CHOOSE TO UTILIZE THE STANDARD OVERHANG FALSEWORK BRACING SYSTEM, SEE "STANDARD OVERHANG FALSEWORK" SHEETS.

THE DRILLED PIERS AT BENT NO.1 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 25 TSF.  
 THE REQUIRED TIP BEARING CAPACITY AT BENT NO.1 SHALL BE VERIFIED.  
 DRILLED PIERS FOR BENT NO.1 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 215 TONS EACH AT THE TOP OF THE COLUMN.  
 PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO.1 AND THE CASING SHALL NOT EXTEND BELOW ELEVATION 2259.000 AT LEFT AND CENTER COLUMNS AND 2244.000 AT RIGHT COLUMN WITHOUT THE ENGINEER'S PERMISSION.  
 FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISION FOR DRILLED PIERS.  
 DRILLED PIERS AT BENT NO.1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 2250.000 AT LEFT AND CENTER COLUMNS AND 2233.000 AT RIGHT COLUMN, SATISFY THE REQUIRED TIP BEARING CAPACITY AND HAVE A MINIMUM PENETRATION OF 10 FEET AT LEFT AND CENTER COLUMNS AND 16 FEET AT RIGHT COLUMN INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.  
 THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION 2257.000 AT LEFT AND CENTER COLUMNS AND 2251.000 AT RIGHT COLUMN. 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 NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO.1.  
 SLURRY CONSTRUCTION SHALL NOT BE USED FOR THIS PROJECT.  
 SID INSPECTIONS ARE NOT REQUIRED TO DETERMINE THE BOTTOM CLEANLINESS OF THE DRILLED PIERS AT BENT NO.1.  
 CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENT NO.1. SEE SPECIAL PROVISION FOR CROSSHOLE SONIC LOGGING.  
 PILES FOR END BENT NO.2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 50 TONS EACH.  
 PILES AT END BENT NO.1 SHALL BE DRIVEN TO AN ELEVATION NO HIGHER THAN 2244.000 LEFT AND 2251.000 RIGHT AND SATISFY THE BEARING CAPACITY OF 50 TONS EACH.  
 STEEL PILE POINTS (WITH TEETH) ARE REQUIRED FOR PILES AT END BENT NO.1 AND END BENT NO.2. SEE SPECIAL PROVISION FOR STEEL PILE POINTS.  
 WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.  
 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 SAMPLE 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.  
 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.  
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.  
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.  
 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT BOULDERS WERE FOUND IN THE SUBSURFACE INVESTIGATION AT END BENT 1 AT ELEVATION 2265.000 TO 2254.000. PILE EXCAVATION MAY BE REQUIRED TO INSTALL THE PILES TO THE MINIMUM REQUIRED TIP ELEVATION. FOR PILE EXCAVATION, SEE SPECIAL PROVISIONS.  
 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.

**HYDRAULIC DATA**

DESIGN DISCHARGE----- 3700 C.F.S.  
 FREQUENCY OF DESIGN FLOOD--- 25 YR.  
 DESIGN HIGH WATER EL.----- 2269.780  
 DRAINAGE AREA----- 24.5 SQ. MI.  
 BASIC DISCHARGE (Q100)----- 5100 C.F.S.  
 BASIC HIGH WATER EL.----- 2270.770

**OVERTOPPING FLOOD DATA**

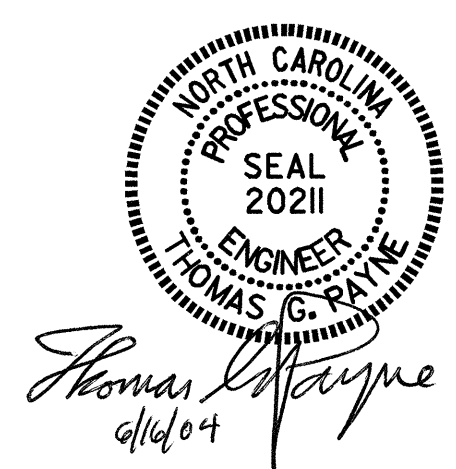
OVERTOPPING DISCHARGE----- 5100+ C.F.S.  
 FREQUENCY OF OVERTOPPING FLOOD--- 100+ YR.  
 OVERTOPPING FLOOD EL.----- 2274.780

**TOTAL BILL OF MATERIAL**

	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMP ACCESS	REMOVAL OF EXISTING STRUCTURE	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	3'-6" DIA. DRILLED PIER IN SOIL	3'-6" DIA. DRILLED PIER NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-6" DIA. DRILLED PIER	CROSSHOLE SONIC LOGGING	CSL TUBES	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.
SUPERSTRUCTURE											5251.0	6259.0	
END BENT NO.1			40.0	25.0						LUMP SUM			40.3
BENT NO.1					19.0	34.0	24.0	1	242.0				29.0
END BENT NO.2													36.7
TOTAL	LUMP SUM	LUMP SUM	40.0	25.0	19.0	34.0	24.0	1	242.0	LUMP SUM	5251.0	6259.0	106.0

	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	45" PRESTRESSED CONCRETE GIRDERS	HP 12 X 53 STEEL PILES	STEEL PILE POINTS	CONCRETE BARRIER RAIL	PLAIN RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS
	LUMP SUM	LBS.	LBS.	NO., LIN. FT.	NO., LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE	LUMP SUM			10, 670.59			274.92			LUMP SUM	LUMP SUM
END BENT NO.1		5740			11, 215	11		181	186		
BENT NO.1		7684	1548								
END BENT NO.2		4985			10, 150	10		185	189		
TOTAL	LUMP SUM	18409	1548	10, 670.59	21, 365	21	274.92	366	375	LUMP SUM	LUMP SUM

DRAWN BY : A.R.CHESSON DATE : 6-03  
 CHECKED BY : J.P. ADAMS DATE : 4/15/04



PROJECT NO. **B-3310**  
**BUNCOMBE** COUNTY  
 STATION: **19+80.00 -L-**

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE ON SR 2173  
 OVER DILLINGHAM CREEK  
 BETWEEN DILLINGHAM  
 AND BARNARDSVILLE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-4
2			4			TOTAL SHEETS 32