

ENCHMARK BM-1:RR SPIKE IN BASE OF 18″HICKORY TREE,STA.15+77.36 -L-,79.82′RT.,ELEV.1081.94,N 829986.042,E 1407394.428 CLASS I -RIP RAP CLASS II RIP RAP ROADWAY DETAIL AND \
PAY ITEM) PROPOSED -GUARDRAIL (ROADWAY DETAIL AND PAY ITEM, TYP.) CLASS II RIP RAP CLASS II-RIP RAP ROADWAY DETAIL AND PAY ITEM) TITITI VIII HE RESTRICTED TO THE RESERVE OF THE PROPERTY O النيالة بالمناتات بالم **EXISTING** STRUCTURE S 26°-02′-53.5″E SR 1595 TO SR 1600 TO SR 1598 (FOX MOUNTAIN RD.) (LINNEYS MILL RD.) ID STA.— 15+74.00 ~60°-00′-00″(TYP.) WITH I I I TI I IIIIII - -DR1-CLASS II RIP RAP FOR UTILITY INFORMATION, SEE UTILITY PLANS AND (ROADWAY DETAIL AND PAY ITEM) SPECIAL PROVISIONS. SKETCH LOCATION

TOTAL

84.0

58.0

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 63 TONS PER PILE.

DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 105 TONS PER PILE. FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD

SPECIFICATIONS.

DRILLED PIERS AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 340 TONS/PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 120 TSF.

INSTALL DRILLED PIERS AT BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN 1041 FT., SATISFY THE REQUIRED TIP RESISTANCE, AND HAVE A PENETRATION OF AT LEAST 6 FT. INTO ROCK AS DEFINED BY ARTICLE 411-1 OF THE STANDARD SPECIFICATIONS.

PERMANENT STEEL CASINGS ARE REQUIRED FOR DRILLED PIERS AT BENT NO.1. DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 1063 FT. (LT) AND 1068 FT. (RT) WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS 1061 FT. THE SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

DRILLED PIERS AT BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 340 TONS/PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 120 TSF.

INSTALL DRILLED PIERS AT BENT NO.2 TO A TIP ELEVATION NO HIGHER THAN 1041 FT., SATISFY THE REQUIRED TIP RESISTANCE, AND HAVE A PENETRATION OF AT LEAST 6 FT. INTO ROCK AS DEFINED BY ARTICLE 411-1 OF THE STANDARD SPECIFICATIONS.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.2 IS 1054 FT. THE SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PERMANENT STEEL CASINGS ARE REQUIRED FOR DRILLED PIERS AT BENT NO. 2. DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 1060 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 66 TONS PER PILE.

DRIVE PILES AT END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

| က္က | DRAWN BY : | WAW | DATE : <u>10-19</u> | |
|--------|-----------------|-----|---------------------|---|
| Пe | CHECKED BY : | | DATE : <u>1-20</u> | _ |
| JJones | DESIGN ENGINEER | | DATE : <u>3-20</u> | _ |

| | TOTAL BILL | OF MATER | RIAL | |
|----------------|--|--|------------------------|---------------------------------------|
| | CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS | REMOVAL OF EXISTING STRUCTURE AT STA.15+74.00 -L- | ASBESTOS ASSESSMENT | 3'-0"Ø DRILLED PIERS IN SOIL |
| | LUMP SUM | LUMP SUM | LUMP SUM | LIN.FT. |
| SUPERSTRUCTURE | | | | |
| | | | | |
| END BENT 1 | | | | |
| BENT 1 | | | | 41.0 |
| BENT 2 | | | | 61.0 |
| END BENT 2 | | | | |
| | | | | |
| TOTAL | LUMP SUM | LUMP SUM | LUMP SUM | 102.0 |

| TOTAL BILL OF MATERIAL | | | | | | | | |
|------------------------|---|--|------------------------|---------------------------------------|--|--|--|--|
| | CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS | REMOVAL OF EXISTING STRUCTURE AT STA.15+74.00 -L- | ASBESTOS ASSESSMENT | 3'-0"Ø DRILLED PIERS IN SOIL | | | | |
| | LUMP SUM | LUMP SUM | LUMP SUM | LIN. FT. | | | | |
| SUPERSTRUCTURE | | | | | | | | |
| | | | | | | | | |
| END BENT 1 | | | | | | | | |
| BENT 1 | | | | 41.0 | | | | |
| BENT 2 | | | | 61.0 | | | | |
| END BENT 2 | | | | | | | | |
| | | | | | | | | |
| TOTAL | LUMP SUM | LUMP SUM | LUMP SUM | 102.0 | | | | |

| | TOTAL BILL | OF MATER | RIAL | |
|----------------|--|--|------------------------|---------------------------------------|
| | CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS | REMOVAL OF EXISTING STRUCTURE AT STA.15+74.00 -L- | ASBESTOS ASSESSMENT | 3'-0"Ø DRILLED PIERS IN SOIL |
| | LUMP SUM | LUMP SUM | LUMP SUM | LIN. FT. |
| SUPERSTRUCTURE | | | | |
| | | | | |
| END BENT 1 | | | | |
| BENT 1 | | | | 41.0 |
| BENT 2 | | | | 61.0 |
| END BENT 2 | | | | |
| | | | | |
| TOTAL | LUMP SUM | LUMP SUM | LUMP SUM | 102.0 |

| TOTAL | TOTAL LUMP SUM LUMP SUM 102.0 FOR FIBER OPTIC CONDUIT | | | | | | | ONDUIT SYSTE | M, SEE SPECIAL PR | OVISIO | NS. |
|--|---|---------|---------|----------|---------|----------|---------|--------------|-------------------|---------------------|------------------|
| | | T | OTAL BI | LL OF I | MATER | RIAL (| CONT'D. | ,) | | | |
| 3'-0"Ø PERMANENT STEEL CASING PILE DRIVING STRUCTURE EXCAVATION CONCRETE SLABS PRINGROUS STEEL STEEL CASING PILE DRIVING REINFORCING STEEL STEEL STEEL STEEL PILES | | | | | | | | | | HP 12 STE PIL | X 53 EL ES |
| | LIN.FT. | LIN.FT. | EA. | LUMP SUM | CU. YD. | LUMP SUM | LBS. | LBS. | EA. | NO. LI | N. FT. |
| UPERSTRUCTURE | | | | | | | | | | | |
| | | | | | | | | | | | |
| END BENT 1 | | | | | 22.4 | | 2,736 | | 5 | 5 | 90 |
| BENT 1 | 52.0 | 22.0 | | | 19.1 | | 11,876 | 2,041 | | | |
| BENT 2 | 32.0 | 36.0 | | | 19.0 | | 11,823 | 2,024 | | | |
| END BENT 2 | | | | | 22.4 | | 2,736 | | 5 | 5 1 | 150 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

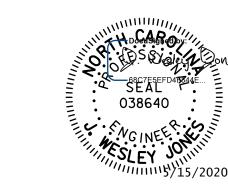
82.9

LUMP SUM !

29,171

LUMP SUM

| TOTAL BILL OF MATERIAL (CONT'D.) | | | | | | | | | |
|----------------------------------|---|------|---------------------|----------|----------------------------------|---------|-----|---------|---------|
| | BARRIER (CLASS II) DRATNACE BEARINGS CONCRETE | | STRESSED PRESTRESSE | | FIBER OPTIC CONDUIT SYSTEM | | | | |
| | LIN.FT. | TONS | SQ. YDS. | LUMP SUM | NO. | LIN.FT. | NO. | LIN.FT. | LIN.FT. |
| SUPERSTRUCTURE | 270.57 | | | | 20 | 750.0 | 10 | 700.0 | 266.6 |
| | | | | | | | | | |
| END BENT 1 | | 125 | 140 | | | | | | |
| BENT 1 | | | | | | | | | |
| BENT 2 | BENT 2 | | | | | | | | |
| END BENT 2 | END BENT 2 120 130 | | | | | | | | |
| | | | | | | | | | |
| TOTAL | 270.57 | 245 | 270 | LUMP SUM | 20 | 750.0 | 10 | 700.0 | 266.6 |





DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING. | |
|--|---|
| THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH | THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. |

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

GENERAL NOTES

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE CONSISTING OF (2) 36'-0" & (1) 35'-0" TIMBER DECK WITH ASPHALT WEARING SURFACE ON 10 LINES OF STEEL I-BEAMS SPANS WITH A CLEAR ROADWAY WIDTH OF 23'-1"ON CONCRETE ABUTMENTS AND STEEL CAPS WITH CONCRETE ENCASED STEEL H-PILES AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED, FOR PARTIAL REMOVAL OF INTERIOR BENTS, SEE SHEET 1 OF 2. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

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 15+74.00

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA (ON SHEET 1 OF 2) SHALL BE EXCAVATED FOR A DISTANCE FROM THE CENTERLINE OF ROADWAY OF 37'± (LEFT) AND 26'± (RIGHT) AT END BENT 1 TO EL.1077.0 AND 30'± (LEFT) AND 31'± (RIGHT) AT END BENT 2 TO EL.1078.0, AS DIRECTED BY THE ENGINEER, THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION, SEE SECTION 412 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.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS, ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+74.00 -L-".

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 SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART, PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT AND BENT CAPS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT, THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE CONTRACTOR,

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

4,065

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

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FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

10 240

| SAMPLE BAR REPLACEMENT | | | | | | |
|---------------------------|---------|--|--|--|--|--|
| SIZE | LENGTH | | | | | |
| #3 | 6′-2″ | | | | | |
| #4 | 7′-4″ | | | | | |
| #5 | 8'-6" | | | | | |
| #6 | 9′-8″ | | | | | |
| #7 | 10'-10" | | | | | |
| #8 | 12'-0" | | | | | |
| #9 | 13'-2" | | | | | |
| #10 | 14'-6" | | | | | |
| #11 | 15′-10″ | | | | | |

SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND $f_y = 60$ ksi.

BR-0115 PROJECT NO. ___ **IREDELL** COUNTY 15+74.00 -L-STATION:

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GENERAL DRAWING

FOR BRIDGE ON SR 1595 (COOLBROOK RD.) OVER ROCKY CREEK BETWEEN SR 1598 AND SR 1600

| | | SHEET NO. | | | | |
|----|-----|-----------|-----|-----|-------|-----------------|
| 0. | BY: | DATE: | NO. | BY: | DATE: | S-2 |
| | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |