RA-1475

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| COMPUTED BY: | T. Huffman | DATE: | 11/06/14 |
| CHECKED BY: | D. Gardner | DATE: | 1/23/15 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| R-2514B | 3D-5 |

**Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".**

## *LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)*

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. A. A. PIPE 12 .064 | 15 .064 | 18 .064 | 24 .064 | 30 .079 | 36 .079 | 42 .109 | 48 .109 | | R. C. PIPE CLASS III 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Y2 15+49 | 45 | LT | 2103 | 2104 | | 37.2 | 36.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 14+87 | 19 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 15+49 | 1 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 12+86 | 30 | LT | 2105 | 2106 | | 37.3 | 37.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2A 10+35 | 35 | RT | 2107 | | 42.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 2107 | 2115 | | 36.6 | 36.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 15+23 | 19 | RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2A 12+19 | 24 | LT | 2108 | | 39.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 2108 | 2109 | | 35.9 | 35.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 12+69 | 30 | LT | 2112 | | | | | | | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 12+70 | 16 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 18+25 | 67 | LT | 2113 | 2114 | | 38.9 | 38.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y3B 10+54 | 52 | LT | 2301 | | 38.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 2301 | 2302 | | 35.8 | 34.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y3 23+18 | 20 | RT | 2303 | | 51.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 2303 | 2304 | | 48.5 | 48.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y3 23+30 | 20 | RT | 2304 | | 51.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 2304 | 2305 | | 48.0 | 34.0 | | | 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y3C 12+77 | 28 | LT | 2306 | 2307 | | 34.1 | 33.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | | | | | | | | | 84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT TOTALS | | | | | | | | | | 1144 | 248 | 76 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| LINE & STATION / SIZE / THICKNESS OR GAUGE | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | R. C. PIPE CLASS V 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | | 18" CAAP | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A: 5' THRU 10' LIN. FT. | B: 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | SPECIAL JB (SEE SPEACIAL DETAIL 2C-3) R-2514C | 15" SIDE DRAIN PIPE ELBOW | 18" CAAP PIPE ELBOW | JB STD. 840.31 or 840.32 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | CONCRETE COLLARS CL. "B" STD. 840.72 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Y2 15+49 | | | | 92 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 14+87 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 28 | REMOVE 15" RCP |
| Y2 15+49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 | REMOVE 15" RCP |
| Y2 12+86 | | | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2A 10+35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 15+23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 32 | REMOVE 15" RCP |
| Y2A 12+19 | | | | | | | | | | | | | | | | | | | | 3.400 | | | | | | | | | | | | | | | | | | | | | | HW for 36" PIPE |
| | | | | | | 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 12+69 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y2 12+70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | REMOVE 15" RCP |
| Y2 18+25 | | | 136 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y3B 10+54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 108 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y3 23+18 | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | | 1 | | | | | | | |
| | | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y3 23+30 | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | | 1 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | |
| Y3C 12+77 | | | 68 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTALS | | 12 | 264 | 200 | 72 | 52 | | | | | | | | | | | | | | 3.400 | | | 2 | | | | | | | | | | 2 | | 2 | | | | 2 | | | | | 128 |
| PROJECT TOTALS | | 3976 | 652 | 792 | 164 | 1024 | | 432 | | | | | | | | | | | | 24.800 | | | 71 | 9.4 | | | | | 6 | | 6 | 6 | 9 | 50 | 6 | 29 | 9 | 33 | | 34 | | | 3 | 1.3166 | 1092 | |

**ABBREVIATIONS**

| | |
|---|---|
| C.A.A. | CORRUGATED ALUMINIUM ALLOY |
| C.B. | CATCH BASIN |
| C.S. | CORRUGATED STEEL |
| D.I. | DROP INLET |
| G.D.I. | GRATED DROP INLET |
| H.D.P.E. | HIGH DENSITY POLYETHYLENE |
| J.B. | JUNCTION BOX |
| M.H. | MANHOLE |
| N.S. | NARROW SLOT |
| P.V.C. | POLYVINYL CHLORIDE |
| R.C. | REINFORCED CONCRETE |
| T.B.D.I. | TRAFFIC BEARING DROP INLET |
| T.B.J.B. | TRAFFIC BEARING JUNCTION BOX |
| W.S. | WIDE SLOT |