DocuSign Envelope ID: 196E2B88-D119-4927-B877-8A91A1929379

DBOCKER-7

| | | | |
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| COMPUTED BY: | TLR/JPS | DATE: | 11/2/2016 |
| CHECKED BY: | DPB | DATE: | 3-20-17 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-3330 | 3D-2 |

**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 | TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Side Drain Pipe (RCP, CSP, CAAP, or HDPE) 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. S. 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 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0515 | 0514 | | 113.4 | 109.0 | 0.3 | | 68 | | | | | | | | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 19+48 | 41 LT | 0516 | | 122.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0516 | 0515 | | 119.5 | 113.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 196 | | | | | | | |
| Y1 21+38 | 2 RT | 0517 | | 118.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 21+12 | 43 RT | 0518 | | 115.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 21+07 | 53 RT | 0519 | | 117.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0519 | 0518 | | 114.4 | 113.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 12 | | | | | | | |
| Y1 19+83 | 53 RT | 0520 | | 121.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0520 | 0519 | | 118.3 | 114.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 128 | | | | | | | |
| L 50+72 | 97 RT | 0521 | | 93.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0521 | 0609 | | 87.6 | 84.6 | | | | | | | 320 | | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| L 50+00 | 0 CL | 0522 | | 95.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0522 | 0521 | | 89.3 | 88.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 120 | | | |
| L 50+00 | 108 LT | 0523 | | 95.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0523 | 0522 | | 89.8 | 89.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 108 | | | |
| Y1LPC 12+40 | 14 LT | 0524 | | 101.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0524 | 0525 | | 98.2 | 95.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 88 | | | | | | | |
| Y1LPC 11+25 | 14 LT | 0525 | | 98.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0525 | 0535 | | 95.4 | 94.8 | 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 56 | | | | | | | |
| Y1LPC 10+50 | 43 LT | 0526 | | 100.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0526 | 0525 | | 95.7 | 95.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 68 | | | | | | | |
| Y1 17+13 | 53 RT | 0527 | | 121.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0527 | 0513 | | 118.4 | 109.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 212 | | | | | | | |
| Y1 16+78 | 41 LT | 0528 | | 120.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0528 | 0512 | | 117.5 | 109.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 176 | | | | | | | |
| L 44+30 | 76 LT | 0529 | | 95.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0529 | 0504 | | 93.2 | 91.8 | | | | | | 292 | | | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| L 43+90 | 60 LT | 0530 | | 98.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0530 | 0529 | | 93.4 | 93.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 | | | | | |
| L 42+90 | 60 LT | 0531 | | 98.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0531 | 0530 | | 93.7 | 93.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 96 | | | | | |
| L 50+50 | 102 RT | 0532 | | 93.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0532 | 0521 | | 88.9 | 88.6 | 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | | | | | |
| Y1RPA 15+95 | 26 LT | 0533 | | 108.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0533 | 0511 | | 105.0 | 104.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | |
| Y1RPD 10+94 | CL | 0534 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 100 | | | | | |
| L 39+00 | 75 RT | 0535 | | 97.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0536 | 0420 | | 94.5 | 93.6 | | | | 304 | | | | | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| L 39+00 | 61 RT | 0536 | | 99.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0537 | 0423 | | 94.3 | 93.0 | 0.4 | | | 244 | | | | | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| L 38+45 | 58 LT | 0537 | | 100.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0538 | | 97.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0538 | 0537 | | 94.5 | 94.3 | 0.4 | | | 60 | | | | | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1RPA 12+50 | 20 RT | 0539 | | 95.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0539 | 0501 | | 90.6 | 90.3 | | | | | 40 | | | | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1RPA 13+00 | 47 RT | 0540 | | 92.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0540 | 0539 | | 91.3 | 91.1 | | | | 56 | | | | | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| L 58+37 | 88 LT | 0602 | | 96.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 0602 | 0625 | | 82.9 | 82.7 | | | | | | | | 48 | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| L 58+35 | 93 LT | 0603 | | 90.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | SHEET TOTALS | | | | 68 | 664 | 332 | | 320 | 48 | | | | | | | | | | | | | | | | | | | | | 24 | | | | | 976 | | 240 | 228 | | |

| LINE & STATION / SIZE / THICKNESS OR GAUGE | 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 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | 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 WITH GRATE STD. 840.20 | 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 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | ##" SPRING BOX PIPE | SPRING BOX STD. 840.41 | 15" ELBOWS | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36 | REMOVE EX. 15" RCP |
| Y1 19+48 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 21+38 | 1 | | | | | | | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | CONCRETE TRANSITIONAL SECTION |
| Y1 21+12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.3990 | | | |
| Y1 21+07 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 19+83 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 50+72 | 1 | 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 50+00 | 1 | 1.3 | | | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 108 | REMOVE EX. 24" RCP |
| L 50+00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | STUB-PIPE OUT |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 103 | REMOVE EX. 24' RCP |
| Y1LPC 12+40 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1LPC 11+25 | 1 | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1LPC 10+50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | STUB-PIPE OUT |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 17+13 | 1 | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1 16+78 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 44+30 | 1 | | | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 43+90 | 1 | 0.1 | | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 42+90 | 1 | 0.1 | | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 50+50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | STUB-PIPE OUT |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 69 | REMOVE EX. 15' RCP |
| Y1RPA 15+95 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1RPD 10+94 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 39+00 | 1 | | | | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 39+00 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 83 | REMOVE EX. 15" RCP |
| L 38+45 | 1 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | |
| | 1 | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1RPA 12+50 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y1RPA 13+00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | STUB-PIPE OUT |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 58+37 | 1 | 5.0 | 3.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L 58+35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.3990 | | |
| SHEET TOTALS | 20 | 8.0 | 3.1 | 8 | 1 | 5 | 2 | | 1 | 1 | | 1 | 1 | 3 | 2 | | | | | | 5 | | 1 | | | 4 | | | 1 | | | | | | | | 4 | | 0.7980 | | 399 | |

**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 |