| COMPUTED BY: | CJH | DATE: | 3/11/2022 |
|---|---|---|---|
| CHECKED BY: | WJW | DATE: | 5/4/2022 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| I-5987A | 3D-8 |

**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 | 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) SIZE 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | THICKNESS OR GAUGE | | | | | | | | | | |
| LA 146+00 | 3 RT | 902 | | 146.11 | | | | | | | | | | | | | | |
| | | 902 | 901 | | 140.00 | 139.50 | | | | | | | | | | | | |
| LA 155+00 | 3 LT | 903 | | 147.18 | | | | | | | | | | | | | | |
| | | 903 | 906 | | 143.10 | 139.40 | .4 | | | | | | | | | | | |
| LA 155+00 | 3 RT | 904 | | 149.83 | | | | | | | | | | | | | | |
| | | 904 | 903 | | 143.60 | 143.10 | | | | | | | | | | | | |
| LA 150+00 | 3 LT | 908 | | 145.19 | | | | | | | | | | | | | | |
| | | 908 | 907 | | 141.10 | 137.30 | .4 | | | | | | | | | | | |
| LA 150+00 | 3 RT | 909 | | 147.76 | | | | | | | | | | | | | | |
| | | 909 | 908 | | 141.50 | 141.10 | | | | | | | | | | | | |
| LA 163+00 | 3 RT | 1001 | | 150.70 | | | | | | | | | | | | | | |
| | | 1001 | 1003 | | 146.60 | 145.40 | | | | | | | | | | | | |
| LA 166+40 | 3 LT | 1002 | | 147.27 | | | | | | | | | | | | | | |
| | | 1002 | 1011 | | 137.50 | 137.00 | | | | | | | | | | | | |
| LA 165+50 | 3 RT | 1003 | | 149.74 | | | | | | | | | | | | | | |
| | | 1003 | 1004 | | 145.40 | 145.00 | | | | | | | | | | | | |
| LA 166+10 | 3 RT | 1004 | | 149.69 | | | | | | | | | | | | | | |
| | | 1004 | 1005 | | 144.70 | 144.30 | | | | | | | | | | | | |
| LA 166+40 | 3 RT | 1005 | | 149.70 | | | | | | | | | | | | | | |
| | | 1005 | 1002 | | 137.70 | 137.50 | | | | | | | | | | | | |
| LA 167+00 | 3 LT | 1006 | | 147.16 | | | | | | | | | | | | | | |
| | | 1006 | 1002 | | 141.30 | 141.00 | | | | | | | | | | | | |
| LA 167+40 | 3 LT | 1007 | | 147.14 | | | | | | | | | | | | | | |
| | | 1007 | 1006 | | 141.70 | 141.30 | | | | | | | | | | | | |
| LA 168+00 | 3 LT | 1008 | | 147.19 | | | | | | | | | | | | | | |
| | | 1008 | 1007 | | 142.30 | 142.00 | | | | | | | | | | | | |
| LA 171+00 | 3 LT | 1009 | | 148.22 | | | | | | | | | | | | | | |
| | | 1009 | 1013 | | 143.80 | 138.70 | | | | | | | | | | | | |
| LA 171+00 | 3 RT | 1010 | | 148.00 | | | | | | | | | | | | | | |
| | | 1010 | 1009 | | 143.90 | 143.80 | | | | | | | | | | | | |
| LA 166+52 | 112 LT | 1011 | | 140.80 | | | | | | | | | | | | | | |
| LA 166+32 | 137 RT | 1012 | | 142.00 | | | | | | | | | | | | | | |
| | | 1012 | 1005 | | 138.20 | 137.70 | | | | | | | | | | | | |
| LA 164+30 | 74 LT | 1014 | | 147.19 | | | | | | | | | | | | | | |
| | | 1014 | 1015 | | 143.00 | 137.80 | | | | | | | | | | | | |
| LA 173+50 | 3 RT | 1101 | | 147.49 | | | | | | | | | | | | | | |
| | | 1101 | 1102 | | 143.40 | 142.80 | | | | | | | | | | | | |
| LA 174+17 | 3 RT | 1102 | | 147.39 | | | | | | | | | | | | | | |
| | | 1102 | 1103 | | 142.50 | 140.00 | .4 | | | | | | | | | | | |
| LA 174+75 | 3 RT | 1104 | | 147.47 | | | | | | | | | | | | | | |
| | | 1104 | 1102 | | 143.10 | 142.80 | | | | | | | | | | | | |
| LA 176+00 | 3 RT | 1105 | | 147.86 | | | | | | | | | | | | | | |
| | | 1105 | 1104 | | 143.80 | 143.10 | | | | | | | | | | | | |
| LA 178+00 | 3 LT | 1106 | | 148.91 | | | | | | | | | | | | | | |
| | | 1106 | 1107 | | 144.80 | 143.50 | | | | | | | | | | | | |
| LA 180+50 | 3 LT | 1107 | | 148.11 | | | | | | | | | | | | | | |
| | | 1107 | 1109 | | 143.50 | 143.20 | | | | | | | | | | | | |
| LA 180+50 | 3 RT | 1108 | | 147.97 | | | | | | | | | | | | | | |
| | | 1108 | 1107 | | 143.90 | 143.80 | | | | | | | | | | | | |
| LA 180+95 | 3 LT | 1109 | | 148.08 | | | | | | | | | | | | | | |
| | | | | | | SHEET TOTAL | | | | | | | | | | | | |

| LINE & STATION | C. S. PIPE SIZE 15 | 18 | 24 | 30 | 36 | 42 | 48 | R. C. PIPE CLASS III SIZE 15 | 18 | 24 | 30 | 36 | 42 | 48 | R. C. PIPE CLASS IV SIZE 15 | 18 | 24 | 30 | 36 | 42 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | THICKNESS OR GAUGE 0.064 | 0.064 | 0.064 | 0.079 | 0.079 | 0.109 | 0.109 | | | | | | | | | | | | | | |
| LA 146+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 8 | | | | | | |
| LA 155+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| LA 155+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 8 | | | | | | |
| LA 150+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| LA 150+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 8 | | | | | | |
| LA 163+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 248 | | | | | | |
| LA 166+40 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| LA 165+50 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 60 | | | | | | |
| LA 166+10 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 40 | | | | | |
| LA 166+40 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 8 | | | | |
| LA 167+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 48 | | | | | |
| LA 167+40 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 40 | | | | | |
| LA 168+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 60 | | | | | | |
| LA 171+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| LA 171+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 8 | | | | | | |
| LA 166+52 | | | | | | | | | | | | | | | | | | | | | |
| LA 166+32 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| LA 164+30 | | | | | | | | | | | | | | | | | | | | | |
| | 39 | | | | | | | | | | | | | | | | | | | | |
| LA 173+50 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 64 | | | | | |
| LA 174+17 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| LA 174+75 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 56 | | | | | |
| LA 176+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 124 | | | | | |
| LA 178+00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 248 | | | | | | |
| LA 180+50 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 44 | | | | | | |
| LA 180+50 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 8 | | | | | | |
| LA 180+95 | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTAL | 39 | | | | | | | | | | | | | | 700 | 372 | | 8 | | | |

| LINE & STATION | 16" WELDED STEEL PIPE 0.25" THICK, GRADE B IN SOIL | 18" WELDED STEEL PIPE 0.25" THICK, GRADE B IN SOIL | 24" WELDED STEEL PIPE 0.50" THICK, GRADE B IN SOIL | 30" WELDED STEEL PIPE 0.50" THICK, GRADE B IN SOIL | 36" WELDED STEEL PIPE 0.50" THICK, GRADE B IN SOIL | 42" WELDED STEEL PIPE 0.625" THICK, GRADE B IN SOIL | 48" WELDED STEEL PIPE 0.625" THICK, GRADE B IN SOIL | 16" WELDED STEEL PIPE 0.25" THICK, GRADE B NOT IN SOIL | 18" WELDED STEEL PIPE 0.25" THICK, GRADE B NOT IN SOIL | 24" WELDED STEEL PIPE 0.50" THICK, GRADE B NOT IN SOIL | 30" WELDED STEEL PIPE 0.50" THICK, GRADE B NOT IN SOIL | 36" WELDED STEEL PIPE 0.50" THICK, GRADE B NOT IN SOIL | 42" WELDED STEEL PIPE 0.625" THICK, GRADE B NOT IN SOIL | 48" WELDED STEEL PIPE 0.625" THICK, GRADE B NOT IN SOIL | ENDWALLS STD. 838.01 OR STD.838.11 (UNLESS OTHERWISE NOTED) CY | REINFORCED ENDWALLS CY | QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PIER EACH (0' THRU 5.0') | LIN.FT. A 5.0' THRU 10.0' | LIN.FT. B 10.0' AND ABOVE | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE 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 GRATE STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR 840.26 | G.D.I. TYPE "B" STD. 840.18 OR 840.27 | G.D.I. TYPE "D" STD. 840.19 OR 840.28 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.32 | J.B. STD. 840.31 OR 840.32 | T.B.J.B. STD. 840.24 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME AND TWO GRATES STD. 840.37 | M.H. STD. 840.51, STD. 840.52, OR STD.53 | M.H. FRAME AND COVER STD. 840.54 | TEMP STEEL PLATE COVER MASONARY DRAINAGE | 15" C.S. ELBOW | 15" SIDE DRAIN PIPE ELBOW | FLOWABLE FILL, C.Y. | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LA 146+00 | | | | | | | | | | | | | | | | | 1 | 1.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 155+00 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 52 | | | | | | | 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 155+00 | | | | | | | | | | | | | | | | | 1 | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 150+00 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 52 | | | | | | | 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 150+00 | | | | | | | | | | | | | | | | | 1 | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 163+00 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 166+40 | | | | | | | | | | | | | | | | | 1 | 4.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 56 | | | | | | | | 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 165+50 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 166+10 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 166+40 | | | | | | | | | | | | | | | | | 1 | 5.0 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 167+00 | | | | | | | | | | | | | | | | | 1 | 0.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 167+40 | | | | | | | | | | | | | | | | | 1 | 0.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 168+00 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 171+00 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 56 | | | | | | | 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 171+00 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 166+52 | | | | | | | | | | | | | | | | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 166+32 | | | | | | | | | | | | | | | | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 68 | | | | | | | | 68 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 164+30 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 173+50 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 174+17 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 56 | | | | | | | 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 174+75 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 176+00 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 178+00 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 180+50 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 180+50 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LA 180+95 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET TOTAL | 160 | 56 | | 124 | | | | 160 | 56 | | 124 | | | | 4.6 | | 24 | 15.0 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | 24 | | | | | 21.4 | |

### ABBREVIATIONS

C.A.A - CORRUGATED ALUMINUM INLET
C.B - CATCH BASIN
C.S. - CORRUGATED STEEL
D.I. - DROP INLET
G.D.I. - GRATED DROP INLET
P.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