WKST1

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| COMPUTED BY: | RBR | DATE: | 6/15/2018 |
| CHECKED BY: | ECOLOGICAL ENGINEERING, LLP | DATE: | 6/15/2018 |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

| PROJECT NO. | SHEET NO. |
|---|---|
| U-4405 | 3D-11 |

**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 % | Drainage 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. S. PIPE 12 .064 | 15 .064 | 18 .064 | R. C. PIPE CLASS III 12 | 15 | 48 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE 0.5" THICK, GRADE B IN SOIL | 30" WELDED STEEL PIPE 0.5" THICK, GRADE B NOT IN SOIL | 36" WELDED STEEL PIPE 0.5" THICK, GRADE B IN SOIL | 36" WELDED STEEL PIPE 0.5" THICK, GRADE B NOT IN SOIL | 15" SIDE DRAIN PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) 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 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | 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. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | 15" SLOTTED DRAIN | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | T.B.G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING D.I. TO J.B. | ADJUST C.B. | ADJUST D.I. | ADJUST JB W/MH | 15" C.S. ELBOW | 18" C.S. ELBOW | 12" DRAINAGE PIPE ELBOW | 15" DRAINAGE PIPE ELBOW | 24" DRAINAGE PIPE ELBOW | 30" DRAINAGE PIPE ELBOWS | 48" DRAINAGE PIPE ELBOW | PIPE CLEAN OUT CY | 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 |
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