COMPUTED BY: RWP DATE: 03-03-17
CHECKED BY: KSH DATE: 04-11-17

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R-5771	3B-1

M A Engineering Consultants, Inc. NC License: F-0160
598 East Chatham Street Suite 137 Cary, NC 27511
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SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 12+50.00 TO 20+20 (BEGIN BRIDGE)	1,692	750	6,477	4,785	750
-L- 21+40 (END BRIDGE) TO 25+50.00	79		9,258	9,179	
-DR1- 10+50.00 TO 12+90.73	110		454	344	
-DR2- 10+12.00 TO 11+50.00	13		1,103	1,090	
TOTAL	1,894	750	17,292	15,398	750
ESTIMATED LOSS DUE TO CLEARING AND GRUBBING	300			300	
ESTIMATED SHOULDER MATERIAL			322	322	
UNDERCUT (CONTINGENCY UNDERCUT FOR EMBANKMENT STABILITY AND SUBGRADE STABILITY TO BE USED AT THE DISCRETION OF THE ENGINEER)		750	863	863	750
PROJECT TOTAL	2,194	1,500	18,477	16,883	1,500
ESTIMATED 5% TO REPLACE TOPSOIL ON BORROW PIT				845	
GRAND TOTAL	2,194	1,500	18,477	17,728	1,500
SAY	2,200	1,500		17,800	

ESTIMATED DRAINAGE DITCH EXCAVATION = 450 CY

THE FOLLOWING CONTINGENCY QUANTITIES ARE PER THE "ROADWAY SUBSURFACE INVESTIGATION – RECOMMENDATIONS" LETTER DATED MARCH 15, 2017 AND ARE TO BE USED AT THE DISCRETION OF THE ENGINEER:

SELECT GRANULAR MATERIAL = 2,700 CY

SELECT GRANULAR MATERIAL (CLASS III) = 150 CY

GEOTEXTILE FOR SOIL STABILIZATION = 2,700 SY

APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, UNCLASSIFIED EXCAVATION, FINE GRADING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

SUMMARY OF PAVEMENT REMOVAL
IN SQUARE YARDS

LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE BREAK-UP
-L- 13+50 TO 14+09	148			
-L- 23+38 TO 23+67	32			
TOTAL	180			
SAY	185			

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

SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

| STATION / SIZE / THICKNESS OR GAUGE | LOCATION (LT,RT, OR CL) | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | 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 | C.S. PIPE 15" .064 | 18" .064 | 24" .064 | 30" .079 | 36" .079 | 42" .109 | 48" .109 | R.C. PIPE, CLASS III (UNLESS OTHERWISE NOTED) 15" | 18" | 24" | 30" | 36" | 42" | 48" | 15" RCP-IV | 30" RCP-IV | *** R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE | | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | 24" SIDE DRAIN PIPE | ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P. | C.S.P. | QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. B') LIN. FT. PER EACH (0' THRU 5.0') A | 5.0' THRU 10.0' 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 CATCH BASIN | DROP INLET | C.B. STD. 840.04 OR 840.05 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME & 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 | T.B.D.I. STD. 840.35 | J.B. STD. 840.31 OR 840.32 | G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 | M.H. FRAME & COVER STD. 840.54 | DRAINAGE PIPE ELBOWS NO. & SIZE | CORR. STEEL ELBOWS NO. & SIZE | CONC. COLLARS CL. "B" C.Y. STD. 840.72 | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | PIPE REMOVAL LIN.FT. | REMARKS |
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