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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
WBS 47851	3B-1

M A Engineering Consultants, Inc.
NC License: F-0160
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+15%	BORROW	WASTE
–Y– 10+25 TO 13+00	170		612	442	
TOTAL	170		612	442	
ESTIMATED LOSS DUE TO CLEARING AND GRUBBING	–120			120	
PROJECT TOTAL	50		612	562	
ESTIMATED 5% TO REPLACE TOPSOIL ON BORROW PIT				29	
GRAND TOTAL	50		612	591	
SAY	100			600	

THE FOLLOWING CONTINGENCY QUANTITIES ARE PER THE "ROADWAY SUBSURFACE INVESTIGATION – RECOMMENDATIONS" LETTER DATED DECEMBER 18, 2018 AND ARE TO BE USED AT THE DISCRETION OF THE ENGINEER:

EST. UNDERCUT = 200 CY

EST. GEOTEXTILE FOR SOIL STABILIZATION = 500 SY (200 SY TO BE USED WITH EST. UNDERCUT, 300 SY TO BE USED WITH AGGREAGATE SUBGRADE.)

EST. SELECT GRANUALAR MATERIAL = 200 CY

APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, UNCLASSIFIED EXCAVATION, BORROW 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 Designer. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineer.

SUMMARY OF PAVEMENT REMOVAL

IN SQUARE YARDS

LOCATION	ASPHALT REMOVAL	ASPHALT BREAK–UP	CONCRETE REMOVAL	CONCRETE BREAK–UP
–Y– 10+10 TO 11+50	658			
TOTAL	658			
SAY	700			

SUMMARY OF SUBSURFACE DRAINAGE

LINE	STATION	STATION	LOCATION LT / RT / CL	DRAIN TYPE* UD/BD/SD	LF
			CONTINGENCY	SD	100
				GRAND TOTAL (LF)	100
				SAY (LF)	100

*UD = UNDERDRAIN
*BD = BLIND DRAIN
*SD = SUBSURFACE DRAIN

SUMMARY OF AGGREGATE SUBGRADE / STABILIZATION

LINE	BEG STATION	END STATION	AGGREGATE TYPE* ASU / AST	AGGREGATE THICKNESS (INCHES)	SHALLOW UNDERCUT (CY)	CLASS IV SUBGRADE STABILIZATION (TONS)	GEOTEXTILE FOR SOIL STABILIZATION (SY)	STABILIZER AGGREGATE (TONS)	CLASS IV AGGREGATE STABILIZATION (TONS)
ENGINEERS DISCRETION									
CONTINGENCY			ASU		100	200	300		
CONTINGENCY			AST						
TOTAL					100	200	300		
SAY					100	200	300		

*ASU = AGGREGATE SUBGRADE
*AST = AGGREGATE STABILIZATION

Total square yards of Geotextile for Soil Stabilization is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

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") PER EACH (0' THRU 5.0') LIN. *FT. 5.0' THRU 10.0' A | 10.0' AND ABOVE B | 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 | PIPE REMOVAL LIN.FT. | REMARKS |
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