COMPUTED BY: J.J. PACE	DATE: 12/22/03
CHECKED BY: J.W. MOORE	DATE: 12/29/03

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-3651	3-C

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

NORTH CAROLINA PROFESSIONAL SEAL 024438 ENGINEER JEFFREY W. MOORE 3-26-04

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL BERM WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	III	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
-L-	15+81.00	20+93.50	LT	512.50			20+18.45	15+81.13	12	14	50		1				1			1										
-L-	12+79.50	18+42.00	RT	562.50			13+59.07	18+41.69	12	14	50		1				1			1										
			SUBTOTAL	1075.00																									
		LESS ANCHOR DEDUCTIONS																											
		GRAU 350	2@50.00' =	100.00																									
		CAT-1	2@6.25' =	12.50																									
			TOTAL	962.50													2			2									
			SAY	975																									

ADDITIONAL GUARDRAIL POSTS = 5 EA

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- STA 10+50.00 TO STA 17+06.68	219		12690	12471	
-Y1- STA 11+10.00 TO STA 12+38.71	0		183	183	
SUBTOTAL	219		12873	12654	
-L- STA 17+06.68 TO STA 27+29.23	292		7919	7627	
-Y2- STA 10+18.24 TO STA 11+20.00	43		12		31
-Y3- STA 12+40.00 TO STA 13+61.43	11		11		
SUBTOTAL	346		7942	7627	31
TOTAL	565		20815	20281	31
EARTH WASTE TO REPLACE BORROW				-31	-31
PROJECT TOTALS	565		20815	20250	0
EST. FOR REPLACING TOPSOIL ON BORROW PITS				1013	
GRAND TOTALS	565		20815	21263	0
SAY	600			21300	
ESTIMATED UNDERCUT = 250 CY					
PAVEMENT STRUCTURE VOLUME = 300 CY					

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

REMOVAL OF EXISTING ASPHALT PAVEMENT

LINE	STATION TO STATION	LOCATION	SQ. YDS.
-L-	12+68 TO 17+56	LT	1810
-L-	17+81 TO 21+64	LT	2054
TOTAL			3864
SAY			3900