COMPUTED BY: MRB DATE: 5-31-02
CHECKED BY: J.RECK DATE: 5-31-02

6/21/00

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

KCI Associates of North Carolina, P.A.
RALEIGH OFFICE
ENGINEERS ● PLANNERS ● ECOLOGISTS
SUITE 220, LANDMARK CENTER II
4601 SIX FORKS RD.
RALEIGH, N.C. 27609-5210
(919) 783-9214

PROJECT REFERENCE NO.	SHEET NO.
B-3451	3-A

RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RT.	AREA REMAINING LT.	CONST. EASE.	PERM. DRAIN. EASE.	TEMP. DRAIN. EASE.
1	DUKE UNIVERSITY	916.61 AC	0.40 AC	887.83 AC	28.38 AC			520 SF
2	CHARLES B. GRIFFIN	7.30 AC	0.17 AC		7.13 AC			

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	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHRWISE) 12"	15"	18"	24"	30"		36"		42"		48"	
																.064	.064	.064	.064	.079		.079		.109		.109	
-L- 14+24.9	LT	1		286.05																							
		1	2		283.30	283.15	YES		52'																		
-L- 13+98.9	RT	2		285.98																							
		2	OUT		283.15	278.50	NO										20'										
-DETOUR- 15+17.75	LT	3		280.70																							
		3	4		275.78	272.93	YES			80'																	
-DETOUR- 15+94.40	LT	4		280.25																							
-DETOUR- 16+50.90	RT	5		278.93																							
		5	EX		273.08	273.03	YES			8'																	
TOTAL									52'	88'							20'										

STATION	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. 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	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	M.D.I. TYPE "A" STD. 840.17 OR 840.26	M.D.I. TYPE "B" STD. 840.18 OR 840.27	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAME WITH GRATE STD. 840.22	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	M.D.I. FRAME WITH TWO FLAT GRATES STD. 840.29	15" CORR. STEEL ELBOWS	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 14+24.9						1										1								1			
-L- 13+98.9						1										1								1			
																									2		
-DETOUR- 15+17.75						1							1	1													REMOVE DI
																										81.5	
-DETOUR- 15+94.40						1	2.32						1	1													
-DETOUR- 16+50.90						1	0.85						1	1													REMOVE DI
																										0.45	
TOTAL						5	3.17						3	3		2								2	2	0.45	81.5	
																									SAY	1	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I. (N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUCTION BOX

"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 STRAIGHT	SHOP CURVED	DOUBLE FACED	WARRANT POINT APPROACH END	TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	TRAILING END	W APPROACH END	TRAILING END	ANCHORS B-77	III	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	13+69.77	14+57.27	LT	87.5				13+69.77	10'	13'		50'		1'		1	1											95'		
-L-	12+18.81	14+31.31	RT	212.5			12+18.81		10'	13'	50'		1'			1	1											144'		
-L-	15+67.26	17+79.76	LT	212.5			17+79.76		10'	13'	50'		1'			1	1											146'		
-L-	15+41.29	17+28.79	RT	187.5				17+28.79	10'	13'		50'		1'		1	1											96'		
-DETOUR-	12+82	14+60	LT	137.5	62.5			12+82	5.5'-8'	8.5'-11'		6.25'		4'	1								1							
-DETOUR-	13+40	14+88	RT	125	75		13+40		5.5'-8'	8.5'-11'	6.25'		4'		1								1							
-DETOUR-	15+73	17+19	LT	125	75		17+19		5.5'-8'	8.5'-11'	6.25'		4'		1								1							
-DETOUR-	16+07	17+84	RT	150	50			17+84	5.5'-8'	8.5'-11'		6.25'		4'	1								1							
SUBTOTAL -L-				700																										
SUBTOTAL -DETOUR-				537.5																										
LESS ANCHOR DEDUCTIONS																														
GRAU-350 (4 @ 50')				-200																										
TYPE III (4 @ 18.75')				-75																										
TYPE B-77 (4 @ 18.75')				-75																										
AT-1 (4 @ 6.25')				-25																										
TOTAL				862.5	262.5										4	4	4						4					481'		
ADDITIONAL GUARDRAIL POSTS....5 EACH																														

$$$$$$SYSTIME$$$$
$$$$$$DGN$$$$$$
$$$$$$USERNAME$$$$