CHARLES C. TOWNES & ASSOCIATES
CIVIL ENGINEERS - PLANNERS - LAND SURVEYORS
COLONIAL HEIGHTS, VIRGINIA

DESIGN OF SANITARY SEWERS

JOB NO. 810323 SHEET NO. 1C OF
DATE 3/25/81 COMPUTED BY JTC
DATUM USC&GS CHECKED BY
APPROVED BY
JOHNSON ROAD SEWER IMPROVEMENTS

LOCATION	LINE NO.	MANHOLE NUMBER FROM	MANHOLE NUMBER TO	AREA IN ACRES INCREMENT	AREA IN ACRES TOTAL	POPULATION DENSITY PER ACRE	DOMESTIC M.G.D. AVERAGE DAILY PER YEAR	DOMESTIC M.G.D. PEAK FLOW FACTOR	DOMESTIC M.G.D. PEAK FLOW	INDUSTRIAL FLOW M.G.D. AVERAGE	INDUSTRIAL FLOW M.G.D. MAXIMUM	INFILTRATION M.G.D. AVERAGE	MAXIMUM TOTAL FLOW M.G.D.	MAXIMUM TOTAL FLOW CUBIC FT. PER SECOND	LENGTH IN FEET	SLOPE %	TYPE OF PIPE	KUTTER'S "n"	DIAMETER OF PIPE	CAPACITY OF PIPE - FULL M.G.D.	CAPACITY OF PIPE - FULL CUBIC FT. PER SECOND	VELOCITY - FULL FEET / SEC.	PROPORTIONAL FLOW	PROPORTIONAL DEPTH OF FLOW	PROPORTIONAL VELOCITY %	VELOCITY FEET / SEC.	MISCELLANEOUS HEAD LOSSES	GROUND ELEVATION AT UPPER END	ELEVATION OF INVERT UPPER END	ELEVATION OF INVERT LOWER END		REMARKS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
		10+00	10+32				0.023	2.5	0.056			0.00001	0.056	0.087	32	0.40		0.012	8"	0.54	0.83	2.4	0.10	0.22	65	1.6			142.15	142.02		PICK UP FLOW FROM RICHARD BLAND COLLEGE
	=	10+03	12+89				"	"	"			0.00009	0.056	0.087	286	2.80			8"	1.42	2.19	6.3	0.04	0.13	48	3.0			141.97	133.98		
		12+89	16+00				"	"	"			0.00009	0.056	0.087	311	0.40			8"	0.54	0.83	2.4	0.10	0.22	65	1.6			133.93	132.69		
		16+00	19+15				"	"	"			0.00009	0.056	0.087	315	0.40			8"	"	"	"	"	0.22	65	1.6			132.64	131.38		
		19+15	23+10				"	"	"			0.00012	0.056	0.087	395	0.40			8"	"	"	"	"						131.33	129.75		
		23+10	27+10				0.023	"	0.056			0.00012	0.057	0.087	400	0.40			8"	0.54	0.83	2.4	0.10	0.22	65	1.6			129.70	128.10		FLOW INTO PUMP STATION
		83+83	80+58				0.020	"	0.050			0.00010	0.050	0.077	325	3.68			8"	1.62	2.51	7.2	0.03	0.11	41	3.0			160.07	148.12		PICK UP FLOW FROM CLUBHOUSE AREA OF COUNTRY CLUB
		80+54	77+69				"	"	"			0.00008	"	"	285	1.80			8"	1.14	1.76	5.0	0.04	0.13	48	2.4			148.07	142.93		
		77+69	75+69				"	"	"			0.00006	"	"	200	0.40			8"	0.54	0.83	2.4	0.09	0.21	63	1.5			142.88	142.08		
		75+69	72+26				"	"	"			0.00010	0.050	0.077	343	0.40			8"	0.54	0.83	2.4	0.09	0.21	63	1.5			142.03	140.66		
		72+26	68+66				0.0216	"	0.054			0.00011	0.054	0.084	360	0.28			10"	0.81	1.25	2.3	0.07	0.18	58	1.3			140.61	139.60		PICK UP FLOW FROM EXISTING HOUSES
		68+66	66+18				"	"	"			0.00007	"	"	248	0.28			10"	"	"	2.3	0.07	0.18	58	1.3			139.55	138.86		
		66+32	64+50				"	"	"			0.00005	"	"	182	"			10"	"	"	"	"	"	"	"			138.81	138.30		
		64+50	61+74				"	"	"			0.00008	0.054	0.084	276	"			10"	"	"	"	"	"	"	"			138.25	137.48		
		61+74	58+03				"	"	"			0.00011	0.055	0.085	371	"			10"	"	"	"	"	"	"	"			137.43	136.39		
		58+04	54+03				"	"	"			0.00012	"	"	401	"			10"	"	"	"	"	"	"	"			136.34	135.22		
		54+03	50+06				0.0216	"	0.054			0.00012	0.055	0.085	397	"			10"	"	"	"	0.07	18	58	1.3			135.17	134.06		
		50+01	48+36				0.0576	"	0.1440			0.00005	0.145	0.224	165	"			10"	"	"	"	0.18	0.28	75	1.7			134.01	133.55		PICK UP FLOW FROM FUTURE RESIDENTIAL AREA
		48+36	45+50				"	"	"			0.00009	"	"	286	"			10"	"	"	"	"	"	"	"			133.50	132.70		
		45+50	43+02				"	"	"			0.00007	"	"	248	"			10"	"	"	"	"	"	"	"			132.65	131.96		
		43+02	39+36				"	"	"			0.00011	0.145	0.224	366	"			10"	"	"	"	"	"	"	"			131.91	130.88		
		39+36	36+62				"	"	"			0.00008	0.146	0.225	274	"			10"	"	"	"	"	"	"	"			130.83	130.06		
		36+62	33+12				"	"	"			0.00011	0.146	0.225	350	"			10"	"	"	"	"	"	"	"			130.01	129.03		
		33+12	27+62				0.0576	2.5	0.1440			0.00011	0.146	0.225	350	0.28			10"	0.81	1.25	2.3	0.18	0.28	75	1.7			128.98	128.00		FLOW INTO PUMP STATION

APPLICABLE NOT

RECEIVED
AUG 3 1981
BRO

RECEIVED
APR 24 1981
STATE DEPT. OF HEALTH
DIVISION OF WATER PROGRAMS
VA. BEACH REGIONAL OFFICE

4498 PRINTED ON NO. 1000H CLEARPRINT