



→ DENOTES UNDERSIZED SEWER

EXISTING SANITARY OUTFALL CAPACITY ANALYSIS

FROM	TO	CITY PROVIDED C-P-S	CITY PROVIDED CAPACITY (MGPD)	SIZE (IN)	LENGTH (FT)	INV. OUT (UPPER)	INV. IN (LOWER)	SLOPE (%)	PIPE AREA (SF)	MANNINGS 'N'	CAPACITY (CFS)	CAPACITY (GPD)	CAPACITY (MGPD)	REMAINING CAPACITY (MGPD)
87	104	0.468	0.30	8	351	327.53	328.00	0.4%	0.348	0.011	0.837	605414.08	0.61	0.30
104	68	0.77	0.50	10	67	325.80	324.23	2.3%	0.545	0.011	3.630	2539586.66	2.54	2.04
68	67	0.851	0.81	10	247	323.88	315.86	3.3%	0.545	0.011	4.663	3013825.18	3.01	2.40
67	66	1.008	1.00	10	520	315.00	310.00	1.6%	0.545	0.011	2.944	2820108.47	2.89	1.18
66	85	4.918	2.82	10	208	310.75	300.51	0.6%	0.545	0.011	1.990	1286210.02	1.28	-1.63
85	144	3.859	2.35	10	189	309.33	307.30	1.0%	0.545	0.011	2.602	1681955.24	1.68	-0.68
84	87	0.718	0.46	8	321	321.43	315.92	1.7%	0.349	0.011	1.859	1201388.08	1.20	0.74

FOUNDERS II PROPOSED DEVELOPMENT FLOW ESTIMATES

RESIDENTIAL	APARTMENT UNIT	GPD	BY MANHOLE # 67						BY MANHOLE # 87						BY MANHOLE # 144					
			EST. TOTAL FLOW (GPD)	EST. TOTAL FLOW (MGPD)	EST. TOTAL P-FLOW (MGPD)	EST. TOTAL P-PFF (MGPD)	EST. TOTAL FLOW (MGPD)	EST. TOTAL P-FLOW (MGPD)	EST. TOTAL FLOW (MGPD)	EST. TOTAL P-FLOW (MGPD)	EST. TOTAL FLOW (MGPD)	EST. TOTAL P-FLOW (MGPD)	EST. TOTAL FLOW (MGPD)	EST. TOTAL P-FLOW (MGPD)						
RESIDENTIAL			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COMMERCIAL			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GENERAL	2000 /ACRE	0.19	202	0.0002	0.0005	0.0008	0.0008	0.0008	0.0008	0.0014	0.0009	0.0014	0.0014	0.0007	0.0007	0.0007	0.0007	0.0000	0.0000	0.0000
TOTAL FLOW			202	0.0002	0.0005	0.0008	0.0008	0.0008	0.0008	0.0014	0.0009	0.0014	0.0014	0.0007	0.0007	0.0007	0.0007	0.0000	0.0000	0.0000

PROPOSED SANITARY OUTFALL CAPACITY ANALYSIS

FROM	TO	INCREMENTAL FLOW (MGPD)	PEAK FLOW FACTOR	NEW FLOW FROM DEVELOPMENT (MGPD)	PEAK FLOW (MGPD)	PEAK FLOW (PFF) (MGPD)	CITY PROVIDED EX. CAP. (MGPD)	TOTAL PEAK FLOW W/ 2.5 PFF (MGPD)	TOTAL PEAK FLOW W/ 4.0 PFF (MGPD)	SIZE (IN)	LENGTH (FT)	INV. OUT (UPPER)	INV. IN (LOWER)	SLOPE (%)	PIPE AREA (SF)	MANNINGS 'N'	CAPACITY (CFS)	CAPACITY (GPD)	CAPACITY (MGPD)	REMAINING CAPACITY (BASED ON 2.5 PFF) (MGPD)	REMAINING CAPACITY (BASED ON 4.0 PFF) (MGPD)
87	D	0.0002	2.5	0.0005	4.0	0.0008	0.3020	0.3029	0.3037	8	196	327.53	328.78	0.4%	0.349	0.011	0.847	605994.74	0.56	0.270	0.270
D	104	0.0379	2.5	0.0948	4.0	0.1519	0.4049	0.4058	0.4066	8	162	326.96	326.00	0.4%	0.349	0.011	0.837	579494.74	0.26	0.162	0.162
104	68	0.0000	2.5	0.0000	4.0	0.0000	0.4977	0.4978	0.4979	10	67	325.80	324.23	2.3%	0.545	0.011	3.630	2539586.66	2.54	1.947	1.947
68	E	0.0000	2.5	0.0000	4.0	0.0000	0.6148	0.7069	0.7070	10	67	325.80	324.23	2.3%	0.545	0.011	3.630	2539586.66	2.54	0.830	1.773
E	67	0.0002	2.5	0.0005	4.0	0.0008	0.7104	0.7678	0.7679	10	247	323.88	315.86	3.3%	0.545	0.011	4.663	3013825.18	3.01	2.303	2.246
67	66**	0.8510	2.5	0.1978	4.0	0.2960	1.0787	1.3070	1.4366	10	247	323.88	315.86	3.3%	0.545	0.011	4.663	3013825.18	2.96	0.964	0.892
66	85	0.0000	2.5	0.0000	4.0	0.0000	2.9251	3.1423	2.2773	10	208	310.75	300.51	0.6%	0.545	0.011	1.990	1286210.02	1.28	1.486	-1.568
85	144	0.0000	2.5	0.0000	4.0	0.0000	2.3659	2.5881	2.7221	10	189	309.33	307.30	1.0%	0.545	0.011	2.602	1681955.24	1.68	0.971	-1.334
84	C	0.0000	2.5	0.0000	4.0	0.0000	0.46	0.46	0.46	8	70	321.43	320.25	1.7%	0.349	0.011	0.842	610562.90	1.19	0.73	0.73
C	B	0.0000	2.5	0.0000	4.0	0.0000	0.46	0.46	0.46	8	208	320.10	317.53	1.2%	0.349	0.011	1.577	1019284.11	1.02	0.56	0.56
B	A	0.0000	2.5	0.0000	4.0	0.0000	0.46	0.46	0.46	8	44	317.43	316.48	0.2%	0.349	0.011	2.085	1347397.77	1.35	0.89	0.89
A	87	0.0000	2.5	0.0000	4.0	0.0000	0.46	0.46	0.46	8	23	318.38	313.92	2.0%	0.349	0.011	2.089	1348001.06	1.30	0.11	0.83

**INCREMENTAL FLOW IS FROM SMH A

SANITARY SEWER ANALYSIS SUMMARY

THIS STUDY ANALYZED 1,552 LINEAR FEET OF EXISTING SANITARY SEWER. IT WAS DETERMINED THAT THE EXISTING LINES FROM SMH 66 TO 144 ARE CURRENTLY UNDERSIZED IN THEIR EXISTING CONDITION. THE ADDITIONAL FLOW ADDED WITH THIS DEVELOPMENT DOES NOT CAUSE ANY OF THE EXISTING SEWERS OPERATING UNDER CAPACITY (SMH 67-66) TO REACH OR EXCEED CAPACITY.

SANITARY SEWER VOLUNTARY CONCESSION

- Prior to site plan approval, the Owner agrees to conduct a sewer capacity analysis of public sewers by a qualified engineer at the lateral tie-in points to a point 1,000 linear feet downstream to evaluate the existing and post-development condition of sanitary sewers.
- The City Manager and the Owner will mutually agree to sanitary sewer lateral tie-ins. Locations will be based off of the capacity analysis study.
- If the analysis shows that an increase in flow created by the proposed development causes an existing adequate pipe to become under capacity, the developer shall, at their sole cost, upgrade the section of sewer main extending to a downstream connecting/maneuvering pipe of the same or larger pipe diameter, so that the sewer has sufficient capacity for the development.
- If the sewer capacity study identifies existing pipes already experiencing capacity issues, and the developer is tying into the pipe, the City Manager will waive part or all of the Sewer Availability Fee associated with the subject Property in an amount equal to the verified costs of design and construction of said improvements. The design and construction costs to perform necessary improvements (excluding capacity analysis) will be determined during Site Plan approval. The Owner agrees to design and construct the system improvements needed for this project at no cost to the City.

SANITARY SEWER AS-BUILT

SMH 98	MANHOLE TOP =	SMH 67	MANHOLE TOP =	325.90
SMH 104	IN (SMH 98) =	SMH 67	IN (SMH 67) =	324.66
SMH 104	OUT (SMH 98) =	SMH 67	OUT (SMH 67) =	324.66
SMH 68	MANHOLE TOP =	SMH 317	MANHOLE TOP =	321.44
SMH 68	IN (SMH 68) =	SMH 317	IN (SMH 317) =	321.95
SMH 68	OUT (SMH 68) =	SMH 317	OUT (SMH 317) =	321.43
SMH 69	MANHOLE TOP =	SMH 316	MANHOLE TOP =	327.33
SMH 69	IN (SMH 69) =	SMH 316	IN (SMH 316) =	327.43
SMH 69	OUT (SMH 69) =	SMH 316	OUT (SMH 316) =	326.10
SMH 67	MANHOLE TOP =	SMH 315	MANHOLE TOP =	325.27
SMH 67	IN (SMH 67) =	SMH 315	IN (SMH 315) =	325.27
SMH 67	OUT (SMH 67) =	SMH 315	OUT (SMH 315) =	325.27
SMH 104	MANHOLE TOP =	SMH 316	MANHOLE TOP =	324.66
SMH 104	IN (SMH 104) =	SMH 316	IN (SMH 316) =	324.66
SMH 104	OUT (SMH 104) =	SMH 316	OUT (SMH 316) =	324.66
SMH 85	MANHOLE TOP =	SMH 85	MANHOLE TOP =	315.86
SMH 85	IN (SMH 85) =	SMH 85	IN (SMH 85) =	315.86
SMH 85	OUT (SMH 85) =	SMH 85	OUT (SMH 85) =	315.86

PIPE SIZES ARE PER RECORD INFORMATION

WALTER L. PHILLIPS
 Engineers • Surveyors • Planners
 Landscape Architects • Arborists
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
 (703) 532-6163 Fax (703) 533-3301
 www.WLPHill.com

SCALE: 1"=50'

NO.	REVISION	DATE	BY	APPROVED	DATE

SANITARY CAPACITY STUDY
SITE PLAN
FOUNDERS ROW II
 CITY OF FALLS CHURCH, VIRGINIA