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Water Resources Department
9379 E. San Salvador
Scottsdale, Arizona

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Wildcat Hill

Scottsdale, Arizona

Wastewater Report

Prepared for:

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1.01.0252003

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WASTEWATER BASIS OF DESIGN REPORT

Records

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1.0 INTRODUCTION

1.1 General Description

Wildcat is a proposed 353 acre master planned community located in Scottsdale, Arizona, that is to be constructed in two phases. A total approximately 122 residential dwelling units (DU) are planned at build-out. This report addresses the wastewater collection system for the proposed Wildcat development at build out, and during each phase. The proposed wastewater collection system will adhere to the requirements and guidelines set forth in the City of Scottsdale's *Design Standards & Policies Manual*, 2010.

1.2 Project Location

Wildcat is located in Sections 21, 22, 27, 28 of Township 6 North, Range 5 East of the Gila and Salt River Base and Meridian. It is bordered by Bartlett Dam Road to the north, and Cave Creek Road to the northwest. See Figures 1 and 2, Appendix A.

1.3 Land Use

Wildcat has three phases; Phase 1 consists of 75 DU's, Phase 2 consists of 34 DU's and Phase 3 consists of 13 DU's.. Phasing for Wildcat may be seen in Figure 3. The following is for the proposed Wildcat development at build out.

Table 1 – Land Use and Population

Land Use	Area (acres)	DU's	Density (DU/acre)
<i>Low Density Residential</i>	353	122	0.37

1.4 Topographic Conditions

The property slopes to the south. The Wildcat development's elevation change is approximately 225 feet, dropping from approximately 3,275 feet above mean sea level (MSL) at the northwest corner of the development to approximately 3,050 feet above MSL at the southwest corner of the development.

2.0 WASTEWATER SYSTEM DESIGN CRITERIA

The following criteria will be used in developing the wastewater report:

2.1 Design Criteria

This wastewater report is based on criteria from the City of Scottsdale's *Design Standards & Policies Manual*, dated January, 2010. The following criteria were used in developing this plan:

Table 2 – Wildcat Wastewater Demand Criteria

Land Use	Avg. Day Demand
Single Family Residential	100 gpcd

Additional design criteria for demand design criteria include:

- Peaking Factor
 - 4
- Minimum Slopes
 - 8-inch = 0.0052 ft/ft
- Velocities
 - Minimum = 2.5 ft/s
 - Maximum = 10 ft/s
- Manning's Roughness Coefficient (n) = 0.013
- Collection lines shall have a minimum drop of 0.10 feet across manholes for sewers with intersecting pipe angles other than 180 degrees
- Maximum Manhole Spacing
 - 15-inches in diameter and less = 500 feet
- Changes in Pipe Size
 - The top invert of the upstream pipe must be equal or higher than the top invert of the downstream pipe.
- Flow Depth, d/D:
 - For pipes 8-inches in diameter: $d/D \leq 0.65$
- Minimum Cover
 - Waterlines 8-inches in diameter: 4 feet of cover
- Minimum Depth of Bury for Wash Crossings
 - 100 to 499 cfs = 7 ft

2.2 Design Calculations

Table 3 contains the wastewater discharge calculations for the proposed development. The land use is single family residential for the entire development. In addition to the Wildcat Development, the sewer collection system for Wildcat was designed to accommodate flows from four tributary parcels. Wastewater flow from these parcels was calculated assuming they had the same land use as Wildcat. The tributary area may be seen in Figure 2.

Table 3 – Wastewater Flow Generation

Land Use	DU	Population ¹	Unit Flow (gpcd)	Average Flow (gpd)	Peak Flow (gpd)
Wildcat Phase 1	75	187.5	100	18,750	75,000
Wildcat Phase 2	34	85	100	8,500	34,000
Wildcat Phase 3	13	32.5	100	3,250	13,000
Wildcat Total	122	305	--	30,500	122,000
Tributary Area	4	10	100	1,000	4,000
Total	126	315	--	31,500	126,000

¹Population based on 2.5 persons per dwelling unit.

3.0 EXISTING AND PROPOSED INFRASTRUCTURE

3.1 Existing Infrastructure

Currently no infrastructure exists in the proposed Wildcat Development. Adjacent existing infrastructure includes an 8-inch sewer line in Boulder View Drive directly west of Wildcat.

3.2 Proposed Infrastructure

An 8-inch sewer collection system is proposed for Wildcat. The on-site collection system is designed to convey wastewater from the North of the site to the existing 8-inch sewer line in Boulder View Drive at the southwest corner of the site, see Figure 4.

Ultimately, wastewater flows produced by Wildcat will flow South on Boulder Drive, West on Stagecoach Pass to Pima Road then South to the existing City of Scottsdale Water Campus at 8787 East Hualapai Drive Scottsdale, Arizona.

The wastewater collection system will flow by gravity, with the exception of eight lots and will be designed to take advantage of topographic conditions wherever possible. Four lots in the northeast corner of the site and 4 lots in the south east of the site. The eight lots described above will require individual grinder pumps to pump the wastewater to the elevation of the proposed downstream manhole. The individual force mains for these grinder pumps will run in private sewer service line easements outside of the right of way and public utility easements. All other sewer lines will be located in major streets or in easements dedicated for that use and shall comply with the City's minimum requirements. The sewer mains will be sized according to the anticipated cumulative flows as the lines are routed to the trunk line tie-in location. The pipe size and minimum and maximum slope required will be determined based on the criteria established in Section 2.1. An onsite wastewater system analysis for Wildcat at Build out may be seen in Appendix B.

3.2.1 Phasing

Three phases are proposed for Wildcat. Phase 1 consists of 75 dwelling units, Phase 2 consists of 34 DU's and Phase 3 consists of 13 DU's. The wastewater collection system will be built in 3 phases. The wastewater system design for Phase 1, 2 and 3 may be seen in Figures 4, 5 and 6. Onsite wastewater system analysis for all phases may be seen in Appendix C.

4.0 SUMMARY

This Wastewater Report analysis presents the collection system design criteria and proposed wastewater infrastructure for Wildcat. The wastewater system will be owned and operated by the City of Scottsdale. The sewer infrastructure shall conform to the City's minimum standards and shall be consistent with the City's current Wastewater Master Plan.

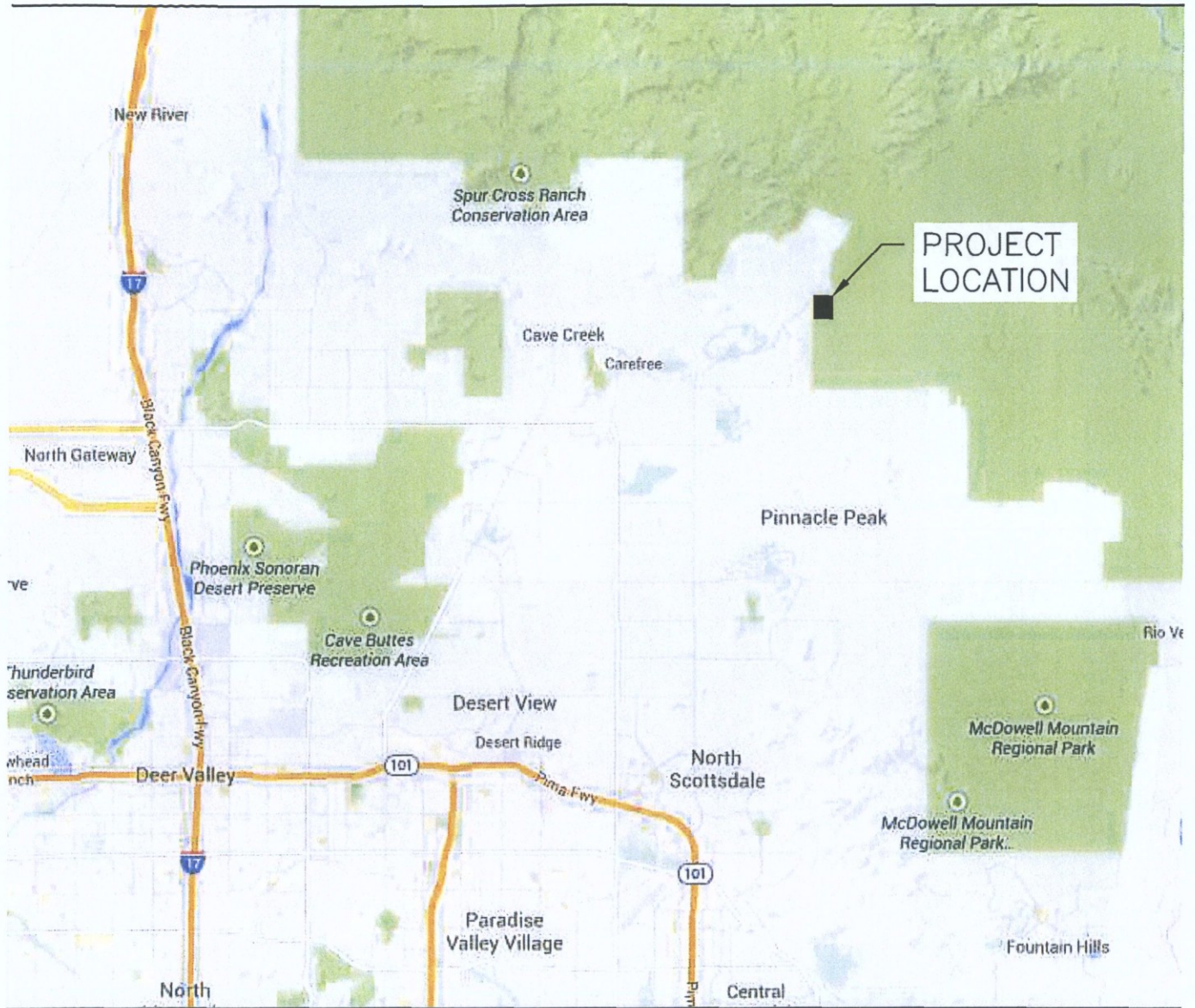
- Wastewater from Wildcat will flow by gravity to Boulder View Drive with the exception of 8 lots that will require individual grinder pumps to pump the wastewater to the nearest downstream manhole.
- The anticipated wastewater flows from Wildcat and the 4 tributary parcels are as follows:

Phase	Average Flow (gpd)	Peak Flow (gpd)
1	19,750	79,000
2	8,500	34,000
Build Out	31,500	126,000

- Sanitary sewer lines are sized to accommodate design flow requirements for the project at build out. Line sizes of 8-inches are proposed for the development and have the capacity to serve Wildcat and four tributary lots.
- Minimum depth of bury was met for all wash crossings in the sewer system design.
- The deepest manhole depth at build out is 28.41 ft. 19 manholes are between 15'-20' and 19 manholes are greater than 20' deep. A hard dig will be required for the construction of this sewer system.
- The sewer capacity analysis completed in this report is only to Boulder View Drive. Offsite sewer capacity has been confirmed by the city.
- We note that manhole depths will not be finalized until the collection system is designed as part of each phase. An effort will be made to reduce manhole depths at that time.

APPENDIX A

Figures



SCALE NTS

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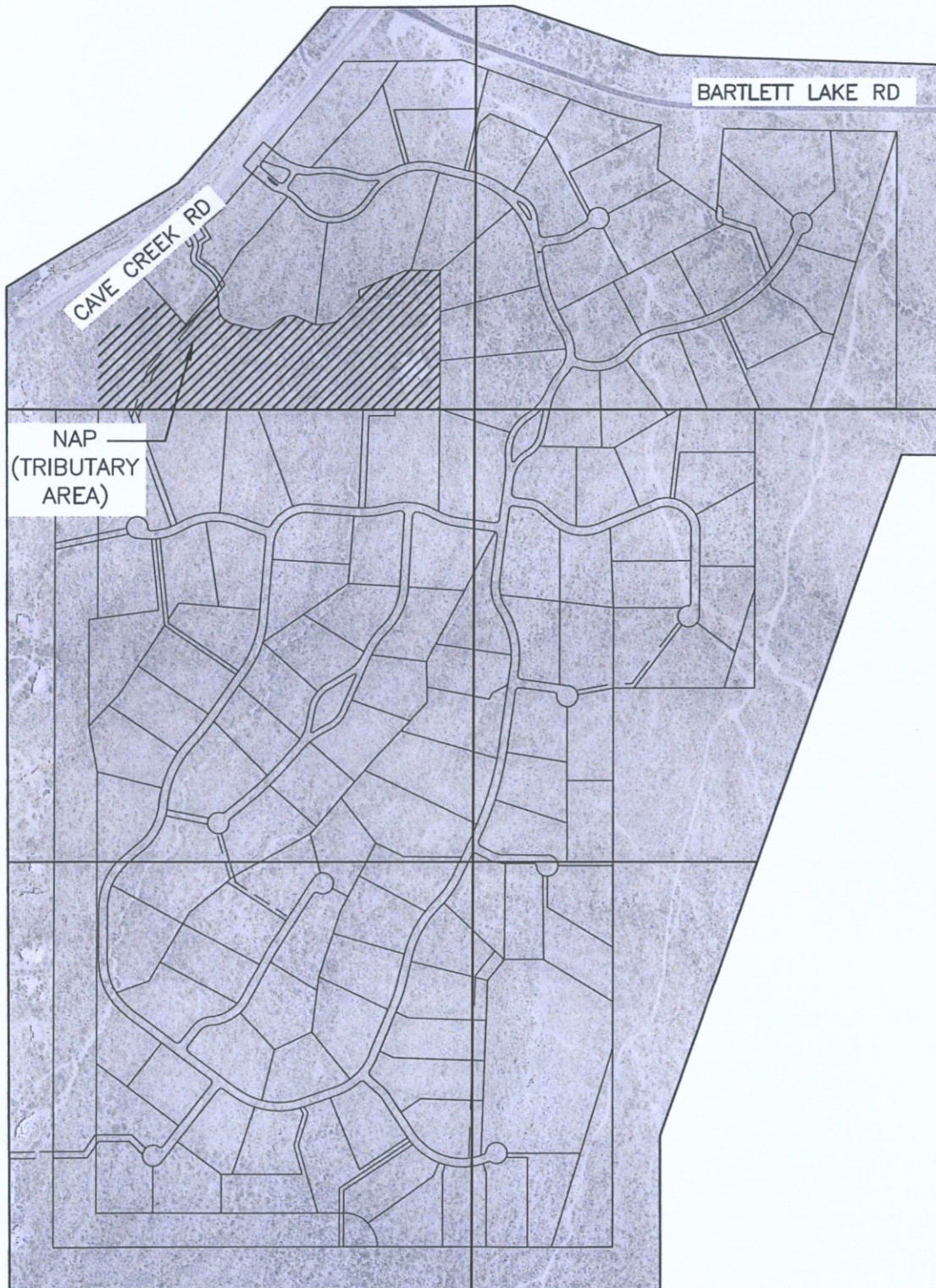
VICINITY MAP

WILDCAT HILL

FIGURE
1

4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

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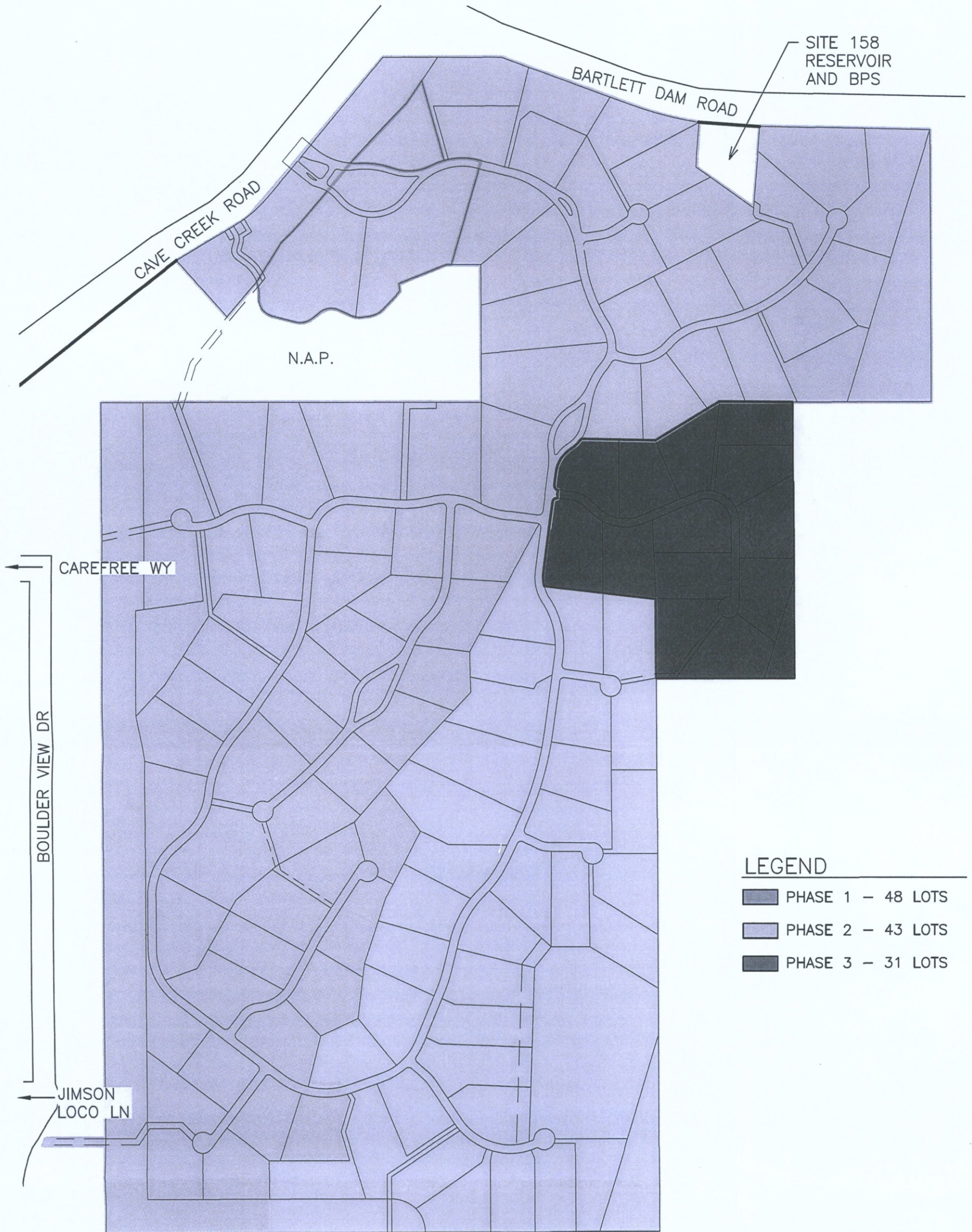
SITE MAP

WILDCAT

FIGURE
2

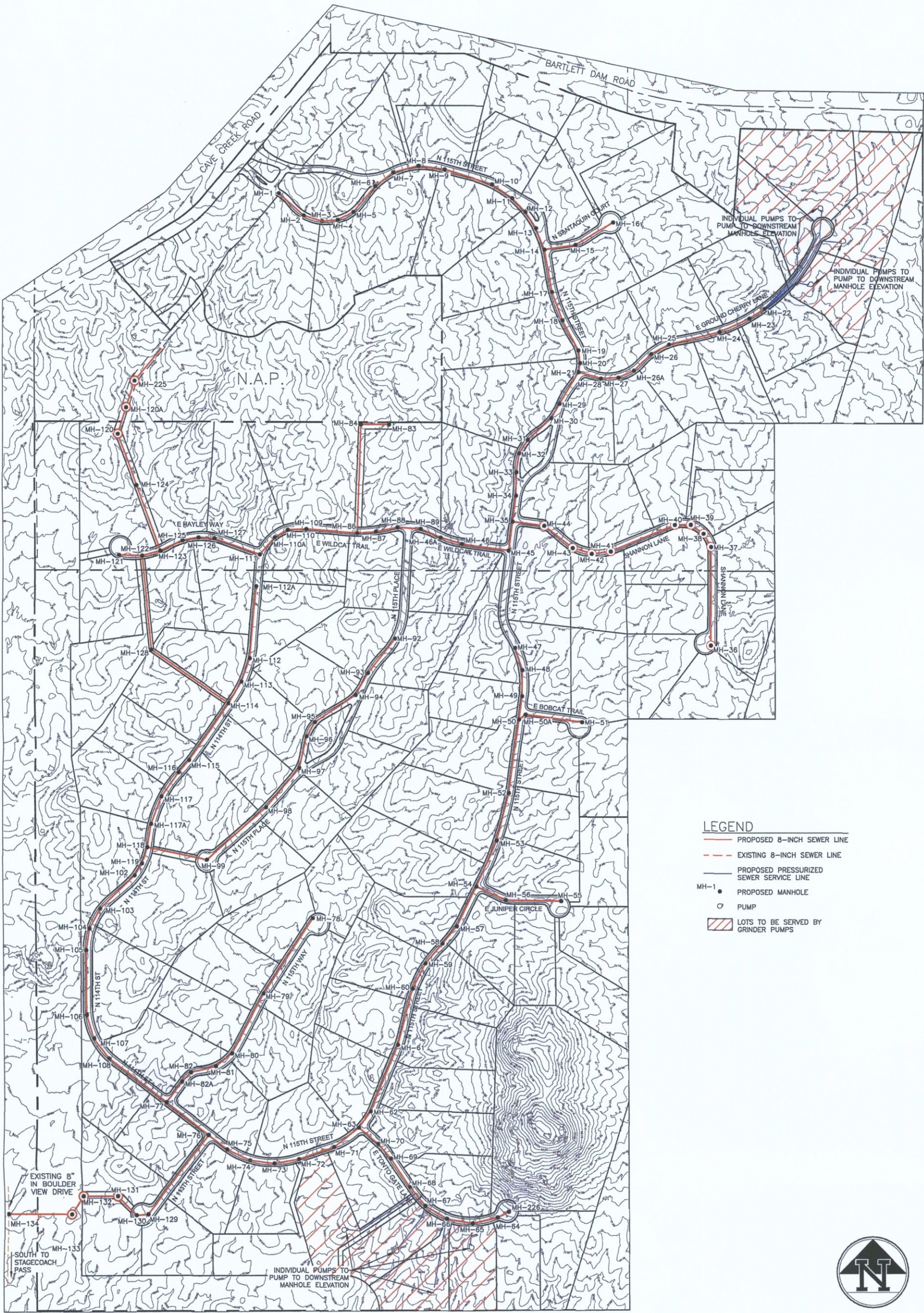
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JOB NO 1.01.0252003	PHASING	WILDCAT HILL
FIGURE 3	4550 NORTH 12TH STREET PHOENIX, ARIZONA 85014 TELEPHONE (602) 264-6831	COE & VAN LOO PLANNING • ENGINEERING • LANDSCAPE ARCHITECTURE



- LEGEND**
- PROPOSED 8-INCH SEWER LINE
 - EXISTING 8-INCH SEWER LINE
 - PROPOSED PRESSURIZED SEWER SERVICE LINE
 - MH-1
 - PUMP
 - LOTS TO BE SERVED BY GRINDER PUMPS



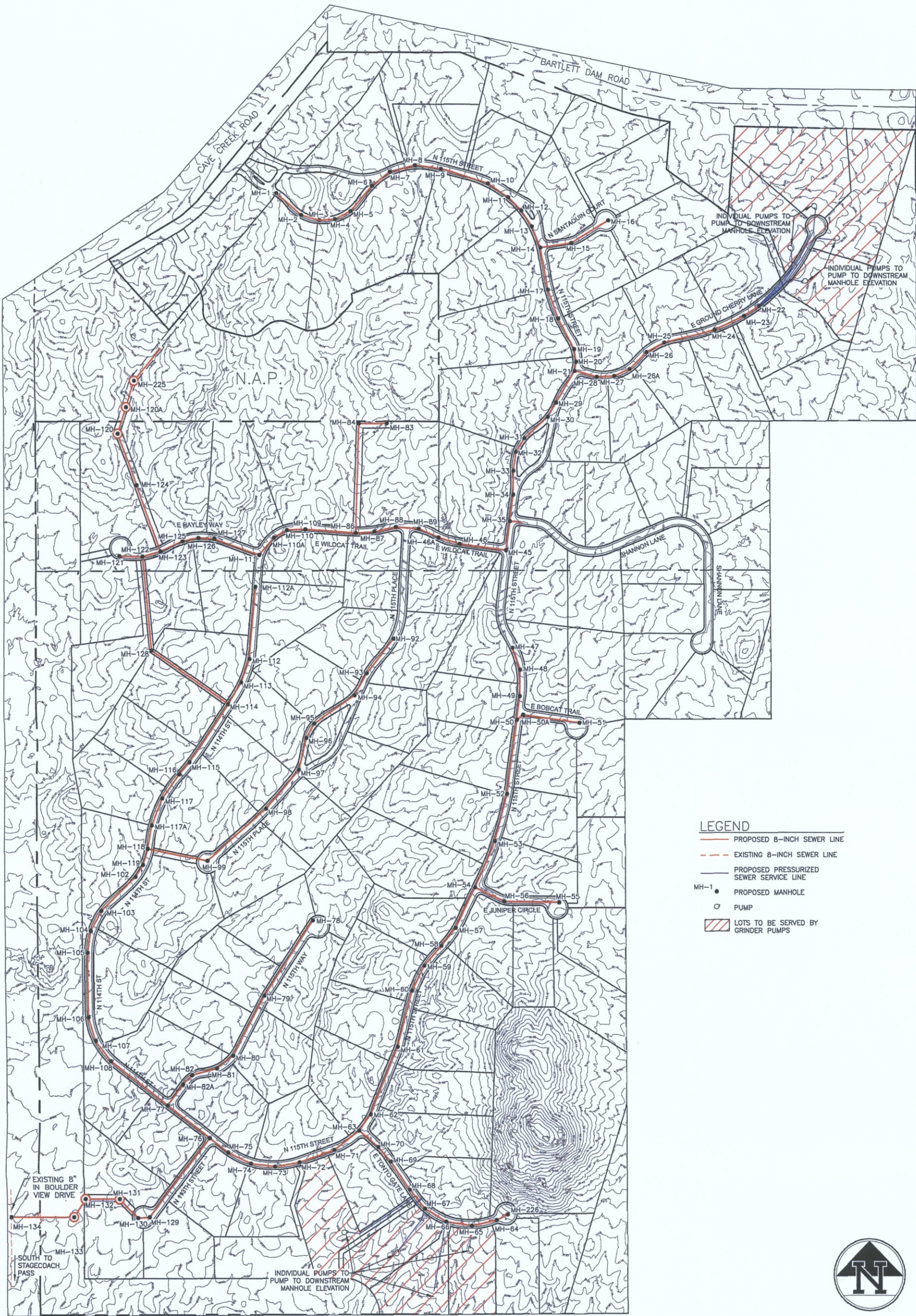
SCALE NTS



- LEGEND**
- PROPOSED 8-INCH SEWER LINE
 - EXISTING 8-INCH SEWER LINE
 - PROPOSED PRESSURIZED SEWER SERVICE LINE
 - MH-1 PROPOSED MANHOLE
 - PUMP
 - LOTS TO BE SERVED BY GRINDER PUMPS



SCALE NTS



APPENDIX B

Onsite Wastewater System Analysis At Build out

Table B-1: Wildcat System Calculations at Build Out

Coe Van Loo Consultants, Inc

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation' (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
1	2	1	2.5	100	250	4	1,000	0	1,000	1,000.00	3252	149	8	0.0336	6.57	3245.00	0.1	3240.00	1,431,391	0%	6.3	0.91	0.02
2	3	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3250	85	8	0.0328	9.23	3239.90	0.1	3237.10	1,414,248	0%	6.3	0.90	0.02
3	4	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3247	71	8	0.0550	9.53	3237.00	0.1	3233.10	1,831,344	0%	8.1	1.07	0.02
4	5	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3242	78	8	0.0064	7.83	3233.00	0.1	3232.50	624,710	0%	2.8	0.51	0.03
5	6	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3245	152	8	0.0059	11.83	3232.40	0	3231.50	599,811	0%	2.7	0.50	0.03
6	7	2	5.0	100	500	4	2,000	1,000	3,000	3,000.00	3248	101	8	0.0089	15.83	3231.50	0.1	3230.60	736,688	0%	3.3	0.80	0.05
7	8	1	2.5	100	250	4	1,000	3,000	4,000	4,000.00	3260	116	8	0.0052	28.83	3230.50	0.1	3229.90	563,106	1%	2.5	0.72	0.06
8	9	1	2.5	100	250	4	1,000	4,000	5,000	5,000.00	3250	118	8	0.0059	19.53	3229.80	0.1	3229.10	599,811	1%	2.7	0.81	0.06
9	10	3	7.5	100	750	4	3,000	5,000	8,000	8,000.00	3255	221	8	0.0050	25.33	3229.00	0.1	3227.90	552,171	1%	2.4	0.88	0.08
10	11	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3257	109	8	0.0064	28.53	3227.80	0.1	3227.10	624,710	1%	2.8	0.96	0.08
11	12	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3253	85	8	0.0059	25.33	3227.00	0.1	3226.50	599,811	1%	2.7	0.93	0.08
12	13	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3249	87	8	0.0069	21.93	3226.40	0.1	3225.80	648,654	1%	2.9	0.99	0.08
13	14	1	2.5	100	250	4	1,000	8,000	9,000	9,000.00	3246	104	8	0.0058	19.63	3225.70	0.1	3225.10	594,706	2%	2.6	0.96	0.09
16	15	5	12.5	100	1,250	4	5,000	0	5,000	5,000.00	3257	196	8	0.0506	6.33	3250.00	0.1	3240.10	1,756,564	0%	7.8	1.71	0.04
15	14	0	0.0	100	0	4	0	5,000	5,000	5,000.00	3247	140	8	0.0357	6.33	3240.00	10	3235.00	1,475,444	0%	6.5	1.51	0.04
14	17	0	0.0	100	0	4	0	14,000	14,000	14,000.00	3239	194	8	0.0052	13.33	3225.00	0.1	3224.00	562,022	2%	2.5	1.06	0.11
17	18	1	2.5	100	250	4	1,000	14,000	15,000	15,000.00	3235	138	8	0.0058	10.43	3223.90	0.1	3223.10	594,706	3%	2.6	1.12	0.11

Table B-1: Wildcat System Calculations at Build Out

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation' (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
18	19	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3240	152	8	0.0059	16.33	3223.00	0.1	3222.10	599,811	3%	2.7	1.13	0.11
19	20	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3237	58	8	0.0173	14.33	3222.00	0.1	3221.00	1,027,098	1%	4.6	1.64	0.08
20	21	1	2.5	100	250	4	1,000	15,000	16,000	16,000.00	3240	41	8	0.0959	18.43	3220.90	7	3217.00	2,418,232	1%	10.7	3.04	0.06
22	23	4	10.0	100	1,000	4	4,000	0	4,000	4,000.00	3231	82	8	0.0052	5.52	3224.72	0.1	3224.29	564,188	1%	2.5	0.72	0.06
23	24	3	7.5	100	750	4	3,000	4,000	7,000	7,000.00	3235	148	8	0.0052	10.15	3224.19	0.1	3223.42	563,106	1%	2.5	0.86	0.08
24	25	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3242	234	8	0.0052	18.02	3223.32	0.1	3222.10	563,106	2%	2.5	0.93	0.09
25	26	0	0.0	100	0	4	0	9,000	9,000	9,000.00	3245	91	8	0.0099	22.33	3222.00	0.1	3221.10	776,974	1%	3.4	1.16	0.08
26	26A	2	5.0	100	500	4	2,000	9,000	11,000	11,000.00	3243	107	8	0.0084	21.53	3221.00	0.1	3220.10	715,695	2%	3.2	1.16	0.09
26A	27	2	5.0	100	500	4	2,000	11,000	13,000	13,000.00	3239	76	8	0.0119	18.03	3220.00	0.1	3219.10	851,848	2%	3.8	1.38	0.09
27	28	2	5.0	100	500	4	2,000	13,000	15,000	15,000.00	3236	76	8	0.0118	15.84	3219.00	0.1	3218.10	848,261	2%	3.8	1.44	0.09
28	21	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3234	106	8	0.0283	15.34	3218.00	5	3215.00	1,313,657	1%	5.8	1.95	0.08
21	29	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3233	164	8	0.0183	22.44	3210.00	0.1	3207.00	1,056,365	3%	4.7	2.09	0.12
29	30	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3225	74	8	0.0135	17.74	3206.90	0.1	3205.90	907,310	3%	4.0	1.87	0.13
30	31	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3222	142	8	0.0367	15.24	3205.80	0.1	3200.60	1,495,966	2%	6.6	2.66	0.10
31	32	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3215	72	8	0.0194	13.84	3200.50	0.1	3199.10	1,087,651	3%	4.8	2.13	0.12
32	33	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3212	85	8	0.0435	11.94	3199.00	0.1	3195.30	1,628,671	2%	7.2	2.82	0.10

Table B-1: Wildcat System Calculations at Build Out

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
33	34	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3208	105	8	0.0368	11.83	3195.20	0.1	3191.35	1,498,002	2%	6.6	2.66	0.10
34	35	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3205	116	8	0.0434	13.28	3191.25	0.1	3186.20	1,626,797	2%	7.2	2.82	0.10
36	37	6	15.0	100	1,500	4	6,000	0	6,000	6,000.00	3211	440	8	0.0043	6.44	3204.00	0.1	3202.09	514,439	1%	2.3	0.77	0.08
37	38	0	0.0	100	0	4	0	6,000	6,000	6,000.00	3216	69	8	0.0044	13.75	3201.99	0.09	3201.69	515,031	1%	2.3	0.77	0.08
38	39	1	2.5	100	250	4	1,000	6,000	7,000	7,000.00	3219	69	8	0.0072	16.73	3201.60	0.1	3201.10	662,605	1%	2.9	0.96	0.07
39	40	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3222	72	8	0.0070	19.93	3201.00	0.1	3200.50	653,338	1%	2.9	1.03	0.08
40	41	1	2.5	100	250	4	1,000	9,000	10,000	10,000.00	3222	312	8	0.0047	21.14	3200.40	0.1	3198.95	532,494	2%	2.4	0.92	0.09
41	42	1	2.5	100	250	4	1,000	10,000	11,000	11,000.00	3215	86	8	0.0087	15.09	3198.85	0.1	3198.10	728,364	2%	3.2	1.18	0.09
42	43	0	0.0	100	0	4	0	11,000	11,000	11,000.00	3212	88	8	0.0215	13.64	3198.00	0.1	3196.10	1,145,006	1%	5.1	1.61	0.07
43	44	0	0.0	100	0	4	0	11,000	11,000	11,000.00	3210	161	8	0.0305	12.84	3196.00	0.1	3191.10	1,363,762	1%	6.0	1.82	0.06
44	35	2	5.0	100	500	4	2,000	11,000	13,000	13,000.00	3204	142	8	0.0337	12.74	3191.00	0.1	3186.20	1,433,519	1%	6.4	1.98	0.07
35	45	0	0.0	100	0	4	0	44,000	44,000	44,000.00	3204	131	8	0.0084	16.84	3186.10	0.1	3185.00	715,695	6%	3.2	1.76	0.17
45	46	1	2.5	100	250	4	1,000	44,000	45,000	45,000.00	3195	211	8	0.0052	9.44	3184.90	0.1	3183.80	563,106	8%	2.5	1.50	0.19
46	46A	0	0.0	100	0	4	0	45,000	45,000	45,000.00	3201	99	8	0.0052	16.93	3183.70	0.1	3183.19	563,106	8%	2.5	1.50	0.19
46A	89	0	0.0	100	0	4	0	45,000	45,000	45,000.00	3202	97	8	0.0052	18.65	3183.09	0.1	3182.58	563,106	8%	2.5	1.50	0.19
89	88	0	0.0	100	0	4	0	45,000	45,000	45,000.00	3211	103	8	0.0052	27.95	3182.48	0.1	3181.95	563,106	8%	2.5	1.50	0.19

Table B-1: Wildcat System Calculations at Build Out

Coe Van Loo Consultants, Inc

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
88	87	1	2.5	100	250	4	1,000	45,000	46,000	46,000.00	3209	98	8	0.0052	26.19	3181.85	0.1	3181.34	563,106	8%	2.5	1.51	0.19
87	86	0	0.0	100	0	4	0	46,000	46,000	46,000.00	3202	83	8	0.0052	20.00	3181.24	0.1	3180.80	565,268	8%	2.5	1.51	0.19
83	84	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3220	125	8	0.0552	11.33	3208.00	0.2	3201.10	1,834,671	0%	8.1	1.33	0.02
84	86	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3216	484	8	0.0415	14.63	3200.90	0.1	3180.80	1,590,789	0%	7.1	1.21	0.03
86	109	0	0.0	100	0	4	0	48,000	48,000	48,000.00	3197	227	8	0.0052	15.23	3180.70	0.1	3179.52	563,106	9%	2.5	1.53	0.20
109	110	1	2.5	100	250	4	1,000	48,000	49,000	49,000.00	3200	83	8	0.0052	19.41	3179.42	0.1	3178.99	563,106	9%	2.5	1.54	0.20
110	110A	1	2.5	100	250	4	1,000	49,000	50,000	50,000.00	3201	67	8	0.0052	21.75	3178.89	0.1	3178.54	563,106	9%	2.5	1.54	0.20
110A	111	0	0.0	100	0	4	0	50,000	50,000	50,000.00	3199	102	8	0.0533	20.29	3178.44	0.1	3173.00	1,802,819	3%	8.0	3.50	0.11
111	127	0	0.0	100	0	4	0	50,000	50,000	50,000.00	3191	215	8	0.0413	17.84	3172.90	0.1	3164.00	1,587,336	3%	7.0	3.20	0.12
127	126	1	2.5	100	250	4	1,000	50,000	51,000	51,000.00	3176	71	8	0.0546	11.34	3163.90	0.1	3160.00	1,824,673	3%	8.1	3.55	0.11
126	125	1	2.5	100	250	4	1,000	51,000	52,000	52,000.00	3175	73	8	0.0398	14.33	3159.90	0.1	3157.00	1,557,866	3%	6.9	3.20	0.12
125	123	0	0.0	100	0	4	0	52,000	52,000	52,000.00	3172	109	8	0.0265	14.84	3156.90	0.1	3154.00	1,271,193	4%	5.6	2.77	0.14
225	120A	1	2.5	100	250	4	1,000	0	1,000	1,000.00	3196	123	8	0.0052	10.96	3184.38	0.1	3183.74	563,106	0%	2.5	0.47	0.03
120A	120	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3196	123	8	0.0052	11.70	3183.64	0.1	3183.00	563,106	0%	2.5	0.47	0.03
120	124	2	5.0	100	500	4	2,000	1,000	3,000	3,000.00	3194	244	8	0.0764	10.63	3182.90	0.1	3164.30	2,158,417	0%	9.6	1.69	0.03
124	123	0	0.0	100	0	4	0	3,000	3,000	3,000.00	3175	310	8	0.0135	10.44	3164.20	6.1	3160.00	907,981	0%	4.0	0.92	0.04
123	122	0	0.0	100	0	4	0	55,000	55,000	55,000.00	3169	85	8	0.0106	14.53	3153.90	0.1	3153.00	803,973	7%	3.6	2.04	0.18

Table B-1: Wildcat System Calculations at Build Out

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
121	122	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3168	104	8	0.0067	13.44	3153.70	0.1	3153.00	639,184	0%	2.8	0.64	0.04
122	128	1	2.5	100	250	4	1,000	57,000	58,000	58,000.00	3168	418	8	0.0310	14.84	3152.90	0.1	3139.93	1,374,895	4%	6.1	3.03	0.14
128	114	0	0.0	100	0	4	0	58,000	58,000	58,000.00	3148	417	8	0.0052	7.31	3139.83	0.1	3137.66	563,106	10%	2.5	1.61	0.22
112A	112	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3182	320	8	0.0308	11.77	3169.86	0.1	3160.00	1,370,452	0%	6.1	1.09	0.03
112	113	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3173	111	8	0.0443	12.73	3159.90	0.1	3155.00	1,643,579	0%	7.3	1.23	0.03
113	114	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3169	112	8	0.0438	13.33	3154.90	12.44	3150.00	1,634,277	0%	7.2	1.23	0.03
114	115	1	2.5	100	250	4	1,000	60,000	61,000	61,000.00	3163	312	8	0.0052	24.67	3137.56	0.1	3135.94	563,106	11%	2.5	1.64	0.22
115	116	0	0.0	100	0	4	0	61,000	61,000	61,000.00	3148	71	8	0.0328	11.00	3135.84	0.1	3133.50	1,414,248	4%	6.3	3.13	0.14
116	117	1	2.5	100	250	4	1,000	61,000	62,000	62,000.00	3146	132	8	0.0258	12.03	3133.40	0.1	3130.00	1,254,291	5%	5.6	2.89	0.15
117	117A	1	2.5	100	250	4	1,000	62,000	63,000	63,000.00	3144	130	8	0.0607	13.13	3129.90	0.1	3122.00	1,923,902	3%	8.5	3.93	0.12
117A	118	1	2.5	100	250	4	1,000	63,000	64,000	64,000.00	3139	104	8	0.0375	15.93	3121.90	0.1	3118.00	1,512,183	4%	6.7	3.33	0.14
92	93	1	2.5	100	250	4	1,000	0	1,000	1,000.00	3181	195	8	0.0457	11.23	3169.00	0.1	3160.10	1,669,347	0%	7.4	1.01	0.02
93	94	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3173	112	8	0.0260	11.93	3160.00	0.1	3157.10	1,259,144	0%	5.6	0.83	0.02
94	95	2	5.0	100	500	4	2,000	1,000	3,000	3,000.00	3170	220	8	0.0268	12.63	3157.00	0.1	3151.10	1,278,368	0%	5.7	1.17	0.04
95	96	0	0.0	100	0	4	0	3,000	3,000	3,000.00	3166	73	8	0.0123	14.74	3151.00	0.1	3150.10	866,046	0%	3.8	0.89	0.04
96	97	2	5.0	100	500	4	2,000	3,000	5,000	5,000.00	3164	147	8	0.0674	13.34	3150.00	0.1	3140.10	2,027,303	0%	9.0	1.89	0.04

Table B-1: Wildcat System Calculations at Build Out

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
97	98	2	5.0	100	500	4	2,000	5,000	7,000	7,000.00	3150	229	8	0.0411	9.03	3140.00	0.1	3130.60	1,582,141	0%	7.0	1.76	0.05
98	99	1	2.5	100	250	4	1,000	7,000	8,000	8,000.00	3149	352	8	0.0239	17.43	3130.50	0.1	3122.10	1,207,223	1%	5.4	1.52	0.06
99	118	2	5.0	100	500	4	2,000	8,000	10,000	10,000.00	3132	273	8	0.0147	9.44	3122.00	0.1	3118.00	945,810	1%	4.2	1.37	0.07
118	119	0	0.0	100	0	4	0	74,000	74,000	74,000.00	3134	75	8	0.0521	15.13	3117.90	0.1	3114.00	1,782,409	4%	7.9	3.90	0.14
119	102	0	0.0	100	0	4	0	74,000	74,000	74,000.00	3130	63	8	0.0302	15.44	3113.90	0.1	3112.00	1,357,038	5%	6.0	3.22	0.16
102	103	0	0.0	100	0	4	0	74,000	74,000	74,000.00	3127	214	8	0.0131	14.43	3111.90	0.1	3109.10	893,767	8%	4.0	2.40	0.19
103	104	0	0.0	100	0	4	0	74,000	74,000	74,000.00	3117	101	8	0.0485	7.23	3109.00	0.1	3104.10	1,719,727	4%	7.6	3.81	0.14
104	105	1	2.5	100	250	4	1,000	74,000	75,000	75,000.00	3112	98	8	0.0500	7.63	3104.00	0.1	3099.10	1,746,118	4%	7.7	3.86	0.14
105	106	0	0.0	100	0	4	0	75,000	75,000	75,000.00	3108	288	8	0.0240	8.03	3099.00	0.1	3092.10	1,209,746	6%	5.4	2.99	0.17
106	107	0	0.0	100	0	4	0	75,000	75,000	75,000.00	3101	108	8	0.0409	8.53	3092.00	0.1	3087.60	1,579,248	5%	7.0	3.60	0.15
107	108	1	2.5	100	250	4	1,000	75,000	76,000	76,000.00	3100	112	8	0.0348	11.64	3087.50	0.1	3083.60	1,456,727	5%	6.5	3.42	0.15
108	77	0	0.0	100	0	4	0	76,000	76,000	76,000.00	3098	321	8	0.0062	13.83	3083.50	0	3081.50	615,863	12%	2.7	1.86	0.24
78	79	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3142	403	8	0.0518	11.33	3130.00	0.1	3109.10	1,777,270	0%	7.9	1.47	0.03
79	80	2	5.0	100	500	4	2,000	3,000	5,000	5,000.00	3119	299	8	0.0231	9.63	3109.00	0.1	3102.10	1,186,847	0%	5.3	1.30	0.05
80	81	1	2.5	100	250	4	1,000	5,000	6,000	6,000.00	3111	93	8	0.0339	8.14	3102.00	0.15	3098.85	1,437,767	0%	6.4	1.57	0.05
81	82	1	2.5	100	250	4	1,000	6,000	7,000	7,000.00	3107	115	8	0.0312	7.14	3098.70	0.1	3095.10	1,379,323	1%	6.1	1.60	0.05

Table B-1: Wildcat System Calculations at Build Out

Coe Van Loo Consultants, Inc

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation' (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
82	82A	1	2.5	100	250	4	1,000	7,000	8,000	8,000.00	3102	57	8	0.0523	6.23	3095.00	0.1	3092.00	1,785,827	0%	7.9	2.00	0.05
82A	77	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3099	116	8	0.0423	6.03	3091.90	5.5	3087.00	1,606,049	0%	7.1	1.85	0.05
77	76	0	0.0	100	0	4	0	84,000	84,000	84,000.00	3094	237	8	0.0312	11.43	3081.50	0.1	3074.1	1,379,323	6%	6.1	3.39	0.17
47	48	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3190	104	8	0.0377	9.53	3180.00	0.1	3176.10	1,516,210	0%	6.7	1.17	0.03
48	49	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3188	116	8	0.0335	11.14	3176.00	0.1	3172.10	1,429,259	0%	6.3	1.12	0.03
49	50	1	2.5	100	250	4	1,000	2,000	3,000	3,000.00	3185	105	8	0.0086	12.13	3172.00	0.1	3171.10	724,166	0%	3.2	0.79	0.05
51	50A	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3196	254	8	0.0244	15.83	3179.00	0.1	3172.80	1,219,786	0%	5.4	1.14	0.04
50A	50	0	0.0	100	0	4	0	3,000	3,000	3,000.00	3183	37	8	0.0164	9.93	3172.70	1.1	3172.10	1,000,024	0%	4.4	0.99	0.04
50	52	1	2.5	100	250	4	1,000	6,000	7,000	7,000.00	3182	332	8	0.0223	10.63	3171.00	0.1	3163.60	1,166,114	1%	5.2	1.42	0.06
52	53	3	7.5	100	750	4	3,000	7,000	10,000	10,000.00	3174	218	8	0.0293	9.84	3163.50	0.1	3157.10	1,336,665	1%	5.9	1.75	0.06
53	54	2	5.0	100	500	4	2,000	10,000	12,000	12,000.00	3168	223	8	0.0175	10.43	3157.00	0.1	3153.10	1,033,017	1%	4.6	1.54	0.08
55	56	5	12.5	100	1,250	4	5,000	0	5,000	5,000.00	3181	246	8	0.0442	12.74	3168.00	0.1	3157.10	1,641,723	0%	7.3	1.63	0.04
56	54	0	0.0	100	0	4	0	5,000	5,000	5,000.00	3164	145	8	0.0263	6.03	3157.00	0.2	3153.20	1,266,387	0%	5.6	1.36	0.05
54	57	0	0.0	100	0	4	0	17,000	17,000	17,000.00	3163	200	8	0.0095	9.13	3153.00	0.1	3151.10	761,115	2%	3.4	1.38	0.10
57	58	2	5.0	100	500	4	2,000	17,000	19,000	19,000.00	3159	101	8	0.0189	7.73	3151.00	0.1	3149.10	1,073,543	2%	4.8	1.82	0.09
58	59	1	2.5	100	250	4	1,000	19,000	20,000	20,000.00	3158	118	8	0.0620	8.13	3149.00	0.1	3141.70	1,944,395	1%	8.6	2.80	0.07
59	60	1	2.5	100	250	4	1,000	20,000	21,000	21,000.00	3151	126	8	0.0756	8.93	3141.60	0.1	3132.10	2,147,086	1%	9.5	3.04	0.07

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Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
60	61	2	5.0	100	500	4	2,000	21,000	23,000	23,000.00	3141	256	8	0.0582	8.43	3132.00	0.1	3117.10	1,883,866	1%	8.4	2.85	0.08
61	62	1	2.5	100	250	4	1,000	23,000	24,000	24,000.00	3128	321	8	0.0652	9.93	3117.00	0.1	3096.10	1,993,942	1%	8.8	3.01	0.08
62	63	0	0.0	100	0	4	0	24,000	24,000	24,000.00	3114	89	8	0.0451	17.53	3096.00	5.1	3092.00	1,658,353	1%	7.4	2.65	0.08
226	64	0	0.0	100	0	4	0	0	0	0.00	3118	58	8	0.0854	9.45	3108.09	0.1	3103.16	2,282,010	0%	10.1	0.00	0.00
64	65	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3113	114	8	0.0786	9.67	3103.06	0.1	3094.10	2,189,273	0%	9.7	1.70	0.03
65	66	1	2.5	100	250	4	1,000	3,000	4,000	4,000.00	3104	117	8	0.0086	9.13	3094.00	0.1	3093.00	722,057	1%	3.2	0.86	0.05
66	67	1	2.5	100	250	4	1,000	4,000	5,000	5,000.00	3103	112	8	0.0072	9.43	3092.90	0.1	3092.10	662,605	1%	2.9	0.87	0.06
67	68	2	5.0	100	500	4	2,000	5,000	7,000	7,000.00	3106	108	8	0.0084	12.93	3092.00	0.1	3091.10	713,562	1%	3.2	1.01	0.07
68	69	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3108	155	8	0.0058	16.63	3091.00	0.1	3090.10	594,706	2%	2.6	0.96	0.09
69	70	1	2.5	100	250	4	1,000	9,000	10,000	10,000.00	3112	87	8	0.0104	21.33	3090.00	0.1	3089.10	796,352	1%	3.5	1.22	0.08
70	63	0	0.0	100	0	4	0	10,000	10,000	10,000.00	3111	112	8	0.0089	21.13	3089.00	1.1	3088.00	736,688	1%	3.3	1.15	0.08
63	71	0	0.0	100	0	4	0	34,000	34,000	34,000.00	3111	141	8	0.0057	23.13	3086.90	0.1	3086.10	589,557	6%	2.6	1.42	0.16
71	72	0	0.0	100	0	4	0	34,000	34,000	34,000.00	3105	165	8	0.0115	17.83	3086.00	0.1	3084.10	837,409	4%	3.7	1.82	0.14
72	73	3	7.5	100	750	4	3,000	34,000	37,000	37,000.00	3098	112	8	0.0081	12.93	3084.00	0.1	3083.10	702,799	5%	3.1	1.65	0.16
73	74	0	0.0	100	0	4	0	37,000	37,000	37,000.00	3094	110	8	0.0082	10.43	3083.00	0.1	3082.10	707,124	5%	3.1	1.66	0.16
74	75	0	0.0	100	0	4	0	37,000	37,000	37,000.00	3095	114	8	0.0079	12.73	3082.00	0.1	3081.10	694,068	5%	3.1	1.64	0.16
																3077.75							

Table B-1: Wildcat System Calculations at Build Out																							
Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
75	76	0	0.0	100	0	4	0	37,000	37,000	37,000.00	3094	105	8	0.0656	12.13	3081.00	0.1	3074.10	2,000,049	2%	8.9	3.44	0.09
76	129	3	7.5	100	750	4	3,000	121,000	124,000	124,000.00	3092	448	8	0.0277	16.83	3074.00	0.1	3061.60	1,299,656	10%	5.8	3.64	0.21
129	130	0	0.0	100	0	4	0	124,000	124,000	124,000.00	3067	53	8	0.0171	5.24	3061.50	0.1	3060.60	1,021,143	12%	4.5	3.07	0.23
130	131	1	2.5	100	250	4	1,000	124,000	125,000	125,000.00	3068	117	8	0.0119	6.73	3060.50	0.1	3059.10	851,848	15%	3.8	2.70	0.26
131	132	0	0.0	100	0	4	0	125,000	125,000	125,000.00	3073	153	8	0.0059	13.63	3059.00	0.1	3058.10	599,811	21%	2.7	2.10	0.31
132	133	0	0.0	100	0	4	0	125,000	125,000	125,000.00	3068	94	8	0.0202	9.13	3058.00	0.1	3056.10	1,109,850	11%	4.9	3.26	0.23
133	134	0	0.0	100	0	4	0	125,000	125,000	125,000.00	3072	436	8	0.0138	15.53	3056.00		3050.00	916,670	14%	4.1	2.85	0.25

- Existing pipe elevation based on shots taken by CVL survey team
- Flow from grinder pumps enters here
- Flow from off-site parcels enters here

APPENDIX C

Onsite Wastewater System Analysis Phase 1, and 2

Table B-1: Wildcat System Calculations Phase 1

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
1	2	1	2.5	100	250	4	1,000	0	1,000	1,000.00	3252	149	8	0.0336	6.57	3245.00	0.1	3240.00	1,431,391	0%	6.3	0.91	0.02
2	3	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3250	85	8	0.0328	9.23	3239.90	0.1	3237.10	1,414,248	0%	6.3	0.90	0.02
3	4	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3247	71	8	0.0550	9.53	3237.00	0.1	3233.10	1,831,344	0%	8.1	1.07	0.02
4	5	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3242	78	8	0.0064	7.83	3233.00	0.1	3232.50	624,710	0%	2.8	0.51	0.03
5	6	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3245	152	8	0.0059	11.83	3232.40	0	3231.50	599,811	0%	2.7	0.50	0.03
6	7	2	5.0	100	500	4	2,000	1,000	3,000	3,000.00	3248	101	8	0.0089	15.83	3231.50	0.1	3230.60	736,688	0%	3.3	0.80	0.05
7	8	1	2.5	100	250	4	1,000	3,000	4,000	4,000.00	3260	116	8	0.0052	28.83	3230.50	0.1	3229.90	563,106	1%	2.5	0.72	0.06
8	9	1	2.5	100	250	4	1,000	4,000	5,000	5,000.00	3250	118	8	0.0059	19.53	3229.80	0.1	3229.10	599,811	1%	2.7	0.81	0.06
9	10	3	7.5	100	750	4	3,000	5,000	8,000	8,000.00	3255	221	8	0.0050	25.33	3229.00	0.1	3227.90	552,171	1%	2.4	0.88	0.08
10	11	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3257	109	8	0.0064	28.53	3227.80	0.1	3227.10	624,710	1%	2.8	0.96	0.08
11	12	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3253	85	8	0.0059	25.33	3227.00	0.1	3226.50	599,811	1%	2.7	0.93	0.08
12	13	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3249	87	8	0.0069	21.93	3226.40	0.1	3225.80	648,654	1%	2.9	0.99	0.08
13	14	1	2.5	100	250	4	1,000	8,000	9,000	9,000.00	3246	104	8	0.0058	19.63	3225.70	0.1	3225.10	594,706	2%	2.6	0.96	0.09
16	15	5	12.5	100	1,250	4	5,000	0	5,000	5,000.00	3257	196	8	0.0506	6.33	3250.00	0.1	3240.10	1,756,564	0%	7.8	1.71	0.04
15	14	0	0.0	100	0	4	0	5,000	5,000	5,000.00	3247	140	8	0.0357	6.33	3240.00	10	3235.00	1,475,444	0%	6.5	1.51	0.04
14	17	0	0.0	100	0	4	0	14,000	14,000	14,000.00	3239	194	8	0.0052	13.33	3225.00	0.1	3224.00	562,022	2%	2.5	1.06	0.11
17	18	1	2.5	100	250	4	1,000	14,000	15,000	15,000.00	3235	138	8	0.0058	10.43	3223.90	0.1	3223.10	594,706	3%	2.6	1.12	0.11

Table B-1: Wildcat System Calculations Phase 1

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
18	19	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3240	152	8	0.0059	16.33	3223.00	0.1	3222.10	599,811	3%	2.7	1.13	0.11
19	20	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3237	58	8	0.0173	14.33	3222.00	0.1	3221.00	1,027,098	1%	4.6	1.64	0.08
20	21	1	2.5	100	250	4	1,000	15,000	16,000	16,000.00	3240	41	8	0.0959	18.43	3220.90	7	3217.00	2,418,232	1%	10.7	3.04	0.06
22	23	4	10.0	100	1,000	4	4,000	0	4,000	4,000.00	3231	82	8	0.0052	5.52	3224.72	0.1	3224.29	564,188	1%	2.5	0.72	0.06
23	24	3	7.5	100	750	4	3,000	4,000	7,000	7,000.00	3235	148	8	0.0052	10.15	3224.19	0.1	3223.42	563,106	1%	2.5	0.86	0.08
24	25	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3242	234	8	0.0052	18.02	3223.32	0.1	3222.10	563,106	2%	2.5	0.93	0.09
25	26	0	0.0	100	0	4	0	9,000	9,000	9,000.00	3245	91	8	0.0099	22.33	3222.00	0.1	3221.10	776,974	1%	3.4	1.16	0.08
26	26A	2	5.0	100	500	4	2,000	9,000	11,000	11,000.00	3243	107	8	0.0084	21.53	3221.00	0.1	3220.10	715,695	2%	3.2	1.16	0.09
26A	27	2	5.0	100	500	4	2,000	11,000	13,000	13,000.00	3239	76	8	0.0119	18.03	3220.00	0.1	3219.10	851,848	2%	3.8	1.38	0.09
27	28	2	5.0	100	500	4	2,000	13,000	15,000	15,000.00	3236	76	8	0.0118	15.84	3219.00	0.1	3218.10	848,261	2%	3.8	1.44	0.09
28	21	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3234	106	8	0.0283	15.34	3218.00	5	3215.00	1,313,657	1%	5.8	1.95	0.08
21	29	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3233	164	8	0.0183	22.44	3210.00	0.1	3207.00	1,056,365	3%	4.7	2.09	0.12
29	30	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3225	74	8	0.0135	17.74	3206.90	0.1	3205.90	907,310	3%	4.0	1.87	0.13
30	31	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3222	142	8	0.0367	15.24	3205.80	0.1	3200.60	1,495,966	2%	6.6	2.66	0.10
31	32	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3215	72	8	0.0194	13.84	3200.50	0.1	3199.10	1,087,651	3%	4.8	2.13	0.12
32	33	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3212	85	8	0.0435	11.94	3199.00	0.1	3195.30	1,628,671	2%	7.2	2.82	0.10

Table B-1: Wildcat System Calculations Phase 1

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
33	34	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3208	105	8	0.0368	11.83	3195.20	0.1	3191.35	1,498,002	2%	6.6	2.66	0.10
34	35	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3205	116	8	0.0434	13.28	3191.25	0.1	3186.20	1,626,797	2%	7.2	2.82	0.10
35	45	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3204	131	8	0.0084	16.84	3186.10	0.1	3185.00	715,695	4%	3.2	1.59	0.14
45	46	1	2.5	100	250	4	1,000	31,000	32,000	32,000.00	3195	211	8	0.0052	9.44	3184.90	0.1	3183.80	563,106	6%	2.5	1.35	0.16
46	46A	0	0.0	100	0	4	0	32,000	32,000	32,000.00	3201	99	8	0.0052	16.93	3183.70	0.1	3183.19	563,106	6%	2.5	1.35	0.16
46A	89	0	0.0	100	0	4	0	32,000	32,000	32,000.00	3202	97	8	0.0052	18.65	3183.09	0.1	3182.58	563,106	6%	2.5	1.35	0.16
89	88	0	0.0	100	0	4	0	32,000	32,000	32,000.00	3211	103	8	0.0052	27.95	3182.48	0.1	3181.95	563,106	6%	2.5	1.35	0.16
88	87	1	2.5	100	250	4	1,000	32,000	33,000	33,000.00	3209	98	8	0.0052	26.19	3181.85	0.1	3181.34	563,106	6%	2.5	1.37	0.16
87	86	0	0.0	100	0	4	0	33,000	33,000	33,000.00	3202	83	8	0.0052	20.00	3181.24	0.1	3180.80	565,268	6%	2.5	1.37	0.16
83	84	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3220	125	8	0.0552	11.33	3208.00	0.2	3201.10	1,834,671	0%	8.1	1.33	0.02
84	86	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3216	484	8	0.0415	14.63	3200.90	0.1	3180.80	1,590,789	0%	7.1	1.21	0.03
86	109	0	0.0	100	0	4	0	35,000	35,000	35,000.00	3197	227	8	0.0052	15.23	3180.70	0.1	3179.52	563,106	6%	2.5	1.39	0.17
109	110	1	2.5	100	250	4	1,000	35,000	36,000	36,000.00	3200	83	8	0.0052	19.41	3179.42	0.1	3178.99	563,106	6%	2.5	1.40	0.17
110	110A	1	2.5	100	250	4	1,000	36,000	37,000	37,000.00	3201	67	8	0.0052	21.75	3178.89	0.1	3178.54	563,106	7%	2.5	1.41	0.17
110A	111	0	0.0	100	0	4	0	37,000	37,000	37,000.00	3199	102	8	0.0533	20.29	3178.44	0.1	3173.00	1,802,819	2%	8.0	3.20	0.10
111	127	0	0.0	100	0	4	0	37,000	37,000	37,000.00	3191	215	8	0.0413	17.84	3172.90	0.1	3164.00	1,587,336	2%	7.0	2.92	0.11

Table B-1: Wildcat System Calculations Phase 1

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
127	126	1	2.5	100	250	4	1,000	37,000	38,000	38,000.00	3176	71	8	0.0546	11.34	3163.90	0.1	3160.00	1,824,673	2%	8.1	3.25	0.10
126	125	1	2.5	100	250	4	1,000	38,000	39,000	39,000.00	3175	73	8	0.0398	14.33	3159.90	0.1	3157.00	1,557,866	3%	6.9	2.93	0.11
125	123	0	0.0	100	0	4	0	39,000	39,000	39,000.00	3172	109	8	0.0265	14.84	3156.90	0.1	3154.00	1,271,193	3%	5.6	2.54	0.12
225	120A	1	2.5	100	250	4	1,000	0	1,000	1,000.00	3196	123	8	0.0052	10.96	3184.38	0.1	3183.74	563,106	0%	2.5	0.47	0.03
120A	120	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3196	123	8	0.0052	11.70	3183.64	0.1	3183.00	563,106	0%	2.5	0.47	0.03
120	124	2	5.0	100	500	4	2,000	1,000	3,000	3,000.00	3194	244	8	0.0764	10.63	3182.90	0.1	3164.30	2,158,417	0%	9.6	1.69	0.03
124	123	0	0.0	100	0	4	0	3,000	3,000	3,000.00	3175	310	8	0.0135	10.44	3164.20	6.1	3160.00	907,981	0%	4.0	0.92	0.04
123	122	0	0.0	100	0	4	0	42,000	42,000	42,000.00	3169	85	8	0.0106	14.53	3153.90	0.1	3153.00	803,973	5%	3.6	1.89	0.16
121	122	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3168	104	8	0.0067	13.44	3153.70	0.1	3153.00	639,184	0%	2.8	0.64	0.04
122	128	1	2.5	100	250	4	1,000	44,000	45,000	45,000.00	3168	418	8	0.0310	14.84	3152.90	0.1	3139.93	1,374,895	3%	6.1	2.80	0.12
128	114	0	0.0	100	0	4	0	45,000	45,000	45,000.00	3148	417	8	0.0052	7.31	3139.83	0.1	3137.66	563,106	8%	2.5	1.50	0.19
112A	112	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3182	320	8	0.0308	11.77	3169.86	0.1	3160.00	1,370,452	0%	6.1	1.09	0.03
112	113	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3173	111	8	0.0443	12.73	3159.90	0.1	3155.00	1,643,579	0%	7.3	1.23	0.03
113	114	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3169	112	8	0.0438	13.33	3154.90	12.44	3150.00	1,634,277	0%	7.2	1.23	0.03
114	115	1	2.5	100	250	4	1,000	47,000	48,000	48,000.00	3163	312	8	0.0052	24.67	3137.56	0.1	3135.94	563,106	9%	2.5	1.53	0.20
115	116	0	0.0	100	0	4	0	48,000	48,000	48,000.00	3148	71	8	0.0328	11.00	3135.84	0.1	3133.50	1,414,248	3%	6.3	2.92	0.13
116	117	1	2.5	100	250	4	1,000	48,000	49,000	49,000.00	3146	132	8	0.0258	12.03	3133.40	0.1	3130.00	1,254,291	4%	5.6	2.70	0.13

Table B-1: Wildcat System Calculations Phase 1

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation' (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
117	117A	1	2.5	100	250	4	1,000	49,000	50,000	50,000.00	3144	130	8	0.0607	13.13	3129.90	0.1	3122.00	1,923,902	3%	8.5	3.66	0.11
117A	118	1	2.5	100	250	4	1,000	50,000	51,000	51,000.00	3139	104	8	0.0375	15.93	3121.90	0.1	3118.00	1,512,183	3%	6.7	3.11	0.13
92	93	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3181	195	8	0.0457	11.23	3169.00	0.1	3160.10	1,669,347	0%	7.4	1.41	0.03
93	94	2	5.0	100	500	4	2,000	3,000	5,000	5,000.00	3173	112	8	0.0260	11.93	3160.00	0.1	3157.10	1,259,144	0%	5.6	1.36	0.05
94	95	2	5.0	100	500	4	2,000	5,000	7,000	7,000.00	3170	220	8	0.0268	12.63	3157.00	0.1	3151.10	1,278,368	1%	5.7	1.52	0.05
95	96	0	0.0	100	0	4	0	7,000	7,000	7,000.00	3166	73	8	0.0123	14.74	3151.00	0.1	3150.10	866,046	1%	3.8	1.16	0.06
96	97	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3164	147	8	0.0674	13.34	3150.00	0.1	3140.10	2,027,303	0%	9.0	2.26	0.05
97	98	2	5.0	100	500	4	2,000	9,000	11,000	11,000.00	3150	229	8	0.0411	9.03	3140.00	0.1	3130.60	1,582,141	1%	7.0	2.02	0.06
98	99	1	2.5	100	250	4	1,000	11,000	12,000	12,000.00	3149	352	8	0.0239	17.43	3130.50	0.1	3122.10	1,207,223	1%	5.4	1.72	0.07
99	118	2	5.0	100	500	4	2,000	12,000	14,000	14,000.00	3132	273	8	0.0147	9.44	3122.00	0.1	3118.00	945,810	1%	4.2	1.52	0.08
118	119	0	0.0	100	0	4	0	65,000	65,000	65,000.00	3134	75	8	0.0521	15.13	3117.90	0.1	3114.00	1,782,409	4%	7.9	3.76	0.13
119	102	0	0.0	100	0	4	0	65,000	65,000	65,000.00	3130	63	8	0.0302	15.44	3113.90	0.1	3112.00	1,357,038	5%	6.0	3.10	0.15
102	103	0	0.0	100	0	4	0	65,000	65,000	65,000.00	3127	214	8	0.0131	14.43	3111.90	0.1	3109.10	893,767	7%	4.0	2.31	0.18
103	104	0	0.0	100	0	4	0	65,000	65,000	65,000.00	3117	101	8	0.0485	7.23	3109.00	0.1	3104.10	1,719,727	4%	7.6	3.66	0.13
104	105	1	2.5	100	250	4	1,000	65,000	66,000	66,000.00	3112	98	8	0.0500	7.63	3104.00	0.1	3099.10	1,746,118	4%	7.7	3.72	0.13
105	106	0	0.0	100	0	4	0	66,000	66,000	66,000.00	3108	288	8	0.0240	8.03	3099.00	0.1	3092.10	1,209,746	5%	5.4	2.87	0.16

Table B-1: Wildcat System Calculations Phase 1

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation' (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
106	107	0	0.0	100	0	4	0	66,000	66,000	66,000.00	3101	108	8	0.0409	8.53	3092.00	0.1	3087.60	1,579,248	4%	7.0	3.47	0.14
107	108	1	2.5	100	250	4	1,000	66,000	67,000	67,000.00	3100	112	8	0.0348	11.64	3087.50	0.1	3083.60	1,456,727	5%	6.5	3.29	0.15
108	77	0	0.0	100	0	4	0	67,000	67,000	67,000.00	3098	321	8	0.0062	13.83	3083.50	0	3081.50	615,863	11%	2.7	1.79	0.22
78	79	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3142	403	8	0.0518	11.33	3130.00	0.1	3109.10	1,777,270	0%	7.9	1.47	0.03
79	80	2	5.0	100	500	4	2,000	3,000	5,000	5,000.00	3119	299	8	0.0231	9.63	3109.00	0.1	3102.10	1,186,847	0%	5.3	1.30	0.05
80	81	1	2.5	100	250	4	1,000	5,000	6,000	6,000.00	3111	93	8	0.0339	8.14	3102.00	0.15	3098.85	1,437,767	0%	6.4	1.57	0.05
81	82	1	2.5	100	250	4	1,000	6,000	7,000	7,000.00	3107	115	8	0.0312	7.14	3098.70	0.1	3095.10	1,379,323	1%	6.1	1.60	0.05
82	82A	1	2.5	100	250	4	1,000	7,000	8,000	8,000.00	3102	57	8	0.0523	6.23	3095.00	0.1	3092.00	1,785,827	0%	7.9	2.00	0.05
82A	77	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3099	116	8	0.0423	6.03	3091.90	5.5	3087.00	1,606,049	0%	7.1	1.85	0.05
77	76	0	0.0	100	0	4	0	75,000	75,000	75,000.00	3094	237	8	0.0312	11.43	3081.50	0.1	3074.1	1,379,323	5%	6.1	3.27	0.16
73	74	0	0.0	100	0	4	0	0	0	0.00	3094	110	8	0.0082	10.43	3083.00	0.1	3082.10	707,124	0%	3.1	0.00	0.00
74	75	0	0.0	100	0	4	0	0	0	0.00	3095	114	8	0.0079	12.73	3082.00	0.1	3081.10	694,068	0%	3.1	0.00	0.00
75	76	0	0.0	100	0	4	0	0	0	0.00	3094	105	8	0.0656	12.13	3081.00	0.1	3074.10	2,000,049	0%	8.9	0.00	0.00
76	129	3	7.5	100	750	4	3,000	75,000	78,000	78,000.00	3092	448	8	0.0277	16.83	3074.00	0.1	3061.60	1,299,656	6%	5.8	3.18	0.17
129	130	0	0.0	100	0	4	0	78,000	78,000	78,000.00	3067	53	8	0.0171	5.24	3061.50	0.1	3060.60	1,021,143	8%	4.5	2.68	0.19
130	131	1	2.5	100	250	4	1,000	78,000	79,000	79,000.00	3068	117	8	0.0119	6.73	3060.50	0.1	3059.10	851,848	9%	3.8	2.37	0.21

Table B-1: Wildcat System Calculations Phase 1																							
Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
131	132	0	0.0	100	0	4	0	79,000	79,000	79,000.00	3073	153	8	0.0059	13.63	3059.00	0.1	3058.10	599,811	13%	2.7	1.85	0.24
132	133	0	0.0	100	0	4	0	79,000	79,000	79,000.00	3068	94	8	0.0202	9.13	3058.00	0.1	3056.10	1,109,850	7%	4.9	2.85	0.18
133	134	0	0.0	100	0	4	0	79,000	79,000	79,000.00	3072	436	8	0.0138	15.53	3056.00		3050.00	916,670	9%	4.1	2.49	0.20

- Existing pipe elevation based on shots taken by CVL survey team
- Flow from grinder pumps enters here
- Flow from off-site parcels enters here

Table B-1: Wildcat System Calculations Phase 2

Coe Van Loo Consultants, Inc

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
1	2	1	2.5	100	250	4	1,000	0	1,000	1,000.00	3252	149	8	0.0336	6.57	3245.00	0.1	3240.00	1,431,391	0%	6.3	0.91	0.02
2	3	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3250	85	8	0.0328	9.23	3239.90	0.1	3237.10	1,414,248	0%	6.3	0.90	0.02
3	4	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3247	71	8	0.0550	9.53	3237.00	0.1	3233.10	1,831,344	0%	8.1	1.07	0.02
4	5	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3242	78	8	0.0064	7.83	3233.00	0.1	3232.50	624,710	0%	2.8	0.51	0.03
5	6	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3245	152	8	0.0059	11.83	3232.40	0	3231.50	599,811	0%	2.7	0.50	0.03
6	7	2	5.0	100	500	4	2,000	1,000	3,000	3,000.00	3248	101	8	0.0089	15.83	3231.50	0.1	3230.60	736,688	0%	3.3	0.80	0.05
7	8	1	2.5	100	250	4	1,000	3,000	4,000	4,000.00	3260	116	8	0.0052	28.83	3230.50	0.1	3229.90	563,106	1%	2.5	0.72	0.06
8	9	1	2.5	100	250	4	1,000	4,000	5,000	5,000.00	3250	118	8	0.0059	19.53	3229.80	0.1	3229.10	599,811	1%	2.7	0.81	0.06
9	10	3	7.5	100	750	4	3,000	5,000	8,000	8,000.00	3255	221	8	0.0050	25.33	3229.00	0.1	3227.90	552,171	1%	2.4	0.88	0.08
10	11	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3257	109	8	0.0064	28.53	3227.80	0.1	3227.10	624,710	1%	2.8	0.96	0.08
11	12	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3253	85	8	0.0059	25.33	3227.00	0.1	3226.50	599,811	1%	2.7	0.93	0.08
12	13	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3249	87	8	0.0069	21.93	3226.40	0.1	3225.80	648,654	1%	2.9	0.99	0.08
13	14	1	2.5	100	250	4	1,000	8,000	9,000	9,000.00	3246	104	8	0.0058	19.63	3225.70	0.1	3225.10	594,706	2%	2.6	0.96	0.09
16	15	5	12.5	100	1,250	4	5,000	0	5,000	5,000.00	3257	196	8	0.0506	6.33	3250.00	0.1	3240.10	1,756,564	0%	7.8	1.71	0.04
15	14	0	0.0	100	0	4	0	5,000	5,000	5,000.00	3247	140	8	0.0357	6.33	3240.00	10	3235.00	1,475,444	0%	6.5	1.51	0.04
14	17	0	0.0	100	0	4	0	14,000	14,000	14,000.00	3239	194	8	0.0052	13.33	3225.00	0.1	3224.00	562,022	2%	2.5	1.06	0.11
17	18	1	2.5	100	250	4	1,000	14,000	15,000	15,000.00	3235	138	8	0.0058	10.43	3223.90	0.1	3223.10	594,706	3%	2.6	1.12	0.11

Table B-1: Wildcat System Calculations Phase 2

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
18	19	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3240	152	8	0.0059	16.33	3223.00	0.1	3222.10	599,811	3%	2.7	1.13	0.11
19	20	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3237	58	8	0.0173	14.33	3222.00	0.1	3221.00	1,027,098	1%	4.6	1.64	0.08
20	21	1	2.5	100	250	4	1,000	15,000	16,000	16,000.00	3240	41	8	0.0959	18.43	3220.90	7	3217.00	2,418,232	1%	10.7	3.04	0.06
22	23	4	10.0	100	1,000	4	4,000	0	4,000	4,000.00	3231	82	8	0.0052	5.52	3224.72	0.1	3224.29	564,188	1%	2.5	0.72	0.06
23	24	3	7.5	100	750	4	3,000	4,000	7,000	7,000.00	3235	148	8	0.0052	10.15	3224.19	0.1	3223.42	563,106	1%	2.5	0.86	0.08
24	25	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3242	234	8	0.0052	18.02	3223.32	0.1	3222.10	563,106	2%	2.5	0.93	0.09
25	26	0	0.0	100	0	4	0	9,000	9,000	9,000.00	3245	91	8	0.0099	22.33	3222.00	0.1	3221.10	776,974	1%	3.4	1.16	0.08
26	26A	2	5.0	100	500	4	2,000	9,000	11,000	11,000.00	3243	107	8	0.0084	21.53	3221.00	0.1	3220.10	715,695	2%	3.2	1.16	0.09
26A	27	2	5.0	100	500	4	2,000	11,000	13,000	13,000.00	3239	76	8	0.0119	18.03	3220.00	0.1	3219.10	851,848	2%	3.8	1.38	0.09
27	28	2	5.0	100	500	4	2,000	13,000	15,000	15,000.00	3236	76	8	0.0118	15.84	3219.00	0.1	3218.10	848,261	2%	3.8	1.44	0.09
28	21	0	0.0	100	0	4	0	15,000	15,000	15,000.00	3234	106	8	0.0283	15.34	3218.00	5	3215.00	1,313,657	1%	5.8	1.95	0.08
21	29	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3233	164	8	0.0183	22.44	3210.00	0.1	3207.00	1,056,365	3%	4.7	2.09	0.12
29	30	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3225	74	8	0.0135	17.74	3206.90	0.1	3205.90	907,310	3%	4.0	1.87	0.13
30	31	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3222	142	8	0.0367	15.24	3205.80	0.1	3200.60	1,495,966	2%	6.6	2.66	0.10
31	32	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3215	72	8	0.0194	13.84	3200.50	0.1	3199.10	1,087,651	3%	4.8	2.13	0.12
32	33	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3212	85	8	0.0435	11.94	3199.00	0.1	3195.30	1,628,671	2%	7.2	2.82	0.10

Table B-1: Wildcat System Calculations Phase 2

Coe Van Loo Consultants, Inc

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
33	34	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3208	105	8	0.0368	11.83	3195.20	0.1	3191.35	1,498,002	2%	6.6	2.66	0.10
34	35	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3205	116	8	0.0434	13.28	3191.25	0.1	3186.20	1,626,797	2%	7.2	2.82	0.10
35	45	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3204	131	8	0.0084	16.84	3186.10	0.1	3185.00	715,695	4%	3.2	1.59	0.14
45	46	1	2.5	100	250	4	1,000	31,000	32,000	32,000.00	3195	211	8	0.0052	9.44	3184.90	0.1	3183.80	563,106	6%	2.5	1.35	0.16
46	46A	0	0.0	100	0	4	0	32,000	32,000	32,000.00	3201	99	8	0.0052	16.93	3183.70	0.1	3183.19	563,106	6%	2.5	1.35	0.16
46A	89	0	0.0	100	0	4	0	32,000	32,000	32,000.00	3202	97	8	0.0052	18.65	3183.09	0.1	3182.58	563,106	6%	2.5	1.35	0.16
89	88	0	0.0	100	0	4	0	32,000	32,000	32,000.00	3211	103	8	0.0052	27.95	3182.48	0.1	3181.95	563,106	6%	2.5	1.35	0.16
88	87	1	2.5	100	250	4	1,000	32,000	33,000	33,000.00	3209	98	8	0.0052	26.19	3181.85	0.1	3181.34	563,106	6%	2.5	1.37	0.16
87	86	0	0.0	100	0	4	0	33,000	33,000	33,000.00	3202	83	8	0.0052	20.00	3181.24	0.1	3180.80	565,268	6%	2.5	1.37	0.16
83	84	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3220	125	8	0.0552	11.33	3208.00	0.2	3201.10	1,834,671	0%	8.1	1.33	0.02
84	86	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3216	484	8	0.0415	14.63	3200.90	0.1	3180.80	1,590,789	0%	7.1	1.21	0.03
86	109	0	0.0	100	0	4	0	35,000	35,000	35,000.00	3197	227	8	0.0052	15.23	3180.70	0.1	3179.52	563,106	6%	2.5	1.39	0.17
109	110	1	2.5	100	250	4	1,000	35,000	36,000	36,000.00	3200	83	8	0.0052	19.41	3179.42	0.1	3178.99	563,106	6%	2.5	1.40	0.17
110	110A	1	2.5	100	250	4	1,000	36,000	37,000	37,000.00	3201	67	8	0.0052	21.75	3178.89	0.1	3178.54	563,106	7%	2.5	1.41	0.17
110A	111	0	0.0	100	0	4	0	37,000	37,000	37,000.00	3199	102	8	0.0533	20.29	3178.44	0.1	3173.00	1,802,819	2%	8.0	3.20	0.10
111	127	0	0.0	100	0	4	0	37,000	37,000	37,000.00	3191	215	8	0.0413	17.84	3172.90	0.1	3164.00	1,587,336	2%	7.0	2.92	0.11

Table B-1: Wildcat System Calculations Phase 2

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
127	126	1	2.5	100	250	4	1,000	37,000	38,000	38,000.00	3176	71	8	0.0546	11.34	3163.90	0.1	3160.00	1,824,673	2%	8.1	3.25	0.10
126	125	1	2.5	100	250	4	1,000	38,000	39,000	39,000.00	3175	73	8	0.0398	14.33	3159.90	0.1	3157.00	1,557,866	3%	6.9	2.93	0.11
125	123	0	0.0	100	0	4	0	39,000	39,000	39,000.00	3172	109	8	0.0265	14.84	3156.90	0.1	3154.00	1,271,193	3%	5.6	2.54	0.12
225	120A	1	2.5	100	250	4	1,000	0	1,000	1,000.00	3196	123	8	0.0052	10.96	3184.38	0.1	3183.74	563,106	0%	2.5	0.47	0.03
120A	120	0	0.0	100	0	4	0	1,000	1,000	1,000.00	3196	123	8	0.0052	11.70	3183.64	0.1	3183.00	563,106	0%	2.5	0.47	0.03
120	124	2	5.0	100	500	4	2,000	1,000	3,000	3,000.00	3194	244	8	0.0764	10.63	3182.90	0.1	3164.30	2,158,417	0%	9.6	1.69	0.03
124	123	0	0.0	100	0	4	0	3,000	3,000	3,000.00	3175	310	8	0.0135	10.44	3164.20	6.1	3160.00	907,981	0%	4.0	0.92	0.04
123	122	0	0.0	100	0	4	0	42,000	42,000	42,000.00	3169	85	8	0.0106	14.53	3153.90	0.1	3153.00	803,973	5%	3.6	1.89	0.16
121	122	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3168	104	8	0.0067	13.44	3153.70	0.1	3153.00	639,184	0%	2.8	0.64	0.04
122	128	1	2.5	100	250	4	1,000	44,000	45,000	45,000.00	3168	418	8	0.0310	14.84	3152.90	0.1	3139.93	1,374,895	3%	6.1	2.80	0.12
128	114	0	0.0	100	0	4	0	45,000	45,000	45,000.00	3148	417	8	0.0052	7.31	3139.83	0.1	3137.66	563,106	8%	2.5	1.50	0.19
112A	112	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3182	320	8	0.0308	11.77	3169.86	0.1	3160.00	1,370,452	0%	6.1	1.09	0.03
112	113	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3173	111	8	0.0443	12.73	3159.90	0.1	3155.00	1,643,579	0%	7.3	1.23	0.03
113	114	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3169	112	8	0.0438	13.33	3154.90	12.44	3150.00	1,634,277	0%	7.2	1.23	0.03
114	115	1	2.5	100	250	4	1,000	47,000	48,000	48,000.00	3163	312	8	0.0052	24.67	3137.56	0.1	3135.94	563,106	9%	2.5	1.53	0.20
115	116	0	0.0	100	0	4	0	48,000	48,000	48,000.00	3148	71	8	0.0328	11.00	3135.84	0.1	3133.50	1,414,248	3%	6.3	2.92	0.13
116	117	1	2.5	100	250	4	1,000	48,000	49,000	49,000.00	3146	132	8	0.0258	12.03	3133.40	0.1	3130.00	1,254,291	4%	5.6	2.70	0.13

Table B-1: Wildcat System Calculations Phase 2

Coe Van Loo Consultants, Inc

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
117	117A	1	2.5	100	250	4	1,000	49,000	50,000	50,000.00	3144	130	8	0.0607	13.13	3129.90	0.1	3122.00	1,923,902	3%	8.5	3.66	0.11
117A	118	1	2.5	100	250	4	1,000	50,000	51,000	51,000.00	3139	104	8	0.0375	15.93	3121.90	0.1	3118.00	1,512,183	3%	6.7	3.11	0.13
92	93	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3181	195	8	0.0457	11.23	3169.00	0.1	3160.10	1,669,347	0%	7.4	1.41	0.03
93	94	2	5.0	100	500	4	2,000	3,000	5,000	5,000.00	3173	112	8	0.0260	11.93	3160.00	0.1	3157.10	1,259,144	0%	5.6	1.36	0.05
94	95	2	5.0	100	500	4	2,000	5,000	7,000	7,000.00	3170	220	8	0.0268	12.63	3157.00	0.1	3151.10	1,278,368	1%	5.7	1.52	0.05
95	96	0	0.0	100	0	4	0	7,000	7,000	7,000.00	3166	73	8	0.0123	14.74	3151.00	0.1	3150.10	866,046	1%	3.8	1.16	0.06
96	97	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3164	147	8	0.0674	13.34	3150.00	0.1	3140.10	2,027,303	0%	9.0	2.26	0.05
97	98	2	5.0	100	500	4	2,000	9,000	11,000	11,000.00	3150	229	8	0.0411	9.03	3140.00	0.1	3130.60	1,582,141	1%	7.0	2.02	0.06
98	99	1	2.5	100	250	4	1,000	11,000	12,000	12,000.00	3149	352	8	0.0239	17.43	3130.50	0.1	3122.10	1,207,223	1%	5.4	1.72	0.07
99	118	2	5.0	100	500	4	2,000	12,000	14,000	14,000.00	3132	273	8	0.0147	9.44	3122.00	0.1	3118.00	945,810	1%	4.2	1.52	0.08
118	119	0	0.0	100	0	4	0	65,000	65,000	65,000.00	3134	75	8	0.0521	15.13	3117.90	0.1	3114.00	1,782,409	4%	7.9	3.76	0.13
119	102	0	0.0	100	0	4	0	65,000	65,000	65,000.00	3130	63	8	0.0302	15.44	3113.90	0.1	3112.00	1,357,038	5%	6.0	3.10	0.15
102	103	0	0.0	100	0	4	0	65,000	65,000	65,000.00	3127	214	8	0.0131	14.43	3111.90	0.1	3109.10	893,767	7%	4.0	2.31	0.18
103	104	0	0.0	100	0	4	0	65,000	65,000	65,000.00	3117	101	8	0.0485	7.23	3109.00	0.1	3104.10	1,719,727	4%	7.6	3.66	0.13
104	105	1	2.5	100	250	4	1,000	65,000	66,000	66,000.00	3112	98	8	0.0500	7.63	3104.00	0.1	3099.10	1,746,118	4%	7.7	3.72	0.13
105	106	0	0.0	100	0	4	0	66,000	66,000	66,000.00	3108	288	8	0.0240	8.03	3099.00	0.1	3092.10	1,209,746	5%	5.4	2.87	0.16

Table B-1: Wildcat System Calculations Phase 2

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation' (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
106	107	0	0.0	100	0	4	0	66,000	66,000	66,000.00	3101	108	8	0.0409	8.53	3092.00	0.1	3087.60	1,579,248	4%	7.0	3.47	0.14
107	108	1	2.5	100	250	4	1,000	66,000	67,000	67,000.00	3100	112	8	0.0348	11.64	3087.50	0.1	3083.60	1,456,727	5%	6.5	3.29	0.15
108	77	0	0.0	100	0	4	0	67,000	67,000	67,000.00	3098	321	8	0.0062	13.83	3083.50	0	3081.50	615,863	11%	2.7	1.79	0.22
78	79	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3142	403	8	0.0518	11.33	3130.00	0.1	3109.10	1,777,270	0%	7.9	1.47	0.03
79	80	2	5.0	100	500	4	2,000	3,000	5,000	5,000.00	3119	299	8	0.0231	9.63	3109.00	0.1	3102.10	1,186,847	0%	5.3	1.30	0.05
80	81	1	2.5	100	250	4	1,000	5,000	6,000	6,000.00	3111	93	8	0.0339	8.14	3102.00	0.15	3098.85	1,437,767	0%	6.4	1.57	0.05
81	82	1	2.5	100	250	4	1,000	6,000	7,000	7,000.00	3107	115	8	0.0312	7.14	3098.70	0.1	3095.10	1,379,323	1%	6.1	1.60	0.05
82	82A	1	2.5	100	250	4	1,000	7,000	8,000	8,000.00	3102	57	8	0.0523	6.23	3095.00	0.1	3092.00	1,785,827	0%	7.9	2.00	0.05
82A	77	0	0.0	100	0	4	0	8,000	8,000	8,000.00	3099	116	8	0.0423	6.03	3091.90	5.5	3087.00	1,606,049	0%	7.1	1.85	0.05
77	76	0	0.0	100	0	4	0	75,000	75,000	75,000.00	3094	237	8	0.0312	11.43	3081.50	0.1	3074.1	1,379,323	5%	6.1	3.27	0.16
47	48	2	5.0	100	500	4	2,000	0	2,000	2,000.00	3190	104	8	0.0377	6.66	3182.87	0.1	3178.97	1,516,210	0%	6.7	1.17	0.03
48	49	0	0.0	100	0	4	0	2,000	2,000	2,000.00	3188	116	8	0.0335	8.26	3178.87	0.1	3174.98	1,429,259	0%	6.3	1.12	0.03
49	50	-2	-5.0	100	-500	4	-2,000	2,000	0	0.00	3185	129	8	0.0293	9.86	3174.88	0.1	3171.10	1,336,665	0%	5.9	0.00	0.00
51	50A	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3196	254	8	0.0244	15.83	3179.00	0.1	3172.80	1,219,786	0%	5.4	1.14	0.04
50A	50	0	0.0	100	0	4	0	3,000	3,000	3,000.00	3183	37	8	0.0164	9.93	3172.70	1.1	3172.10	1,000,024	0%	4.4	0.99	0.04
50	52	1	2.5	100	250	4	1,000	3,000	4,000	4,000.00	3182	332	8	0.0223	10.63	3171.00	0.1	3163.60	1,166,114	0%	5.2	1.20	0.04

Table B-1: Wildcat System Calculations Phase 2

Coe Van Loo Consultants, Inc.

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation' (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
52	53	3	7.5	100	750	4	3,000	4,000	7,000	7,000.00	3174	218	8	0.0293	9.84	3163.50	0.1	3157.10	1,336,665	1%	5.9	1.57	0.05
53	54	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3168	223	8	0.0175	10.43	3157.00	0.1	3153.10	1,033,017	1%	4.6	1.41	0.07
55	56	5	12.5	100	1,250	4	5,000	0	5,000	5,000.00	3181	246	8	0.0442	12.74	3168.00	0.1	3157.10	1,641,723	0%	7.3	1.63	0.04
56	54	0	0.0	100	0	4	0	5,000	5,000	5,000.00	3164	145	8	0.0263	6.03	3157.00	0.2	3153.20	1,266,387	0%	5.6	1.36	0.05
54	57	0	0.0	100	0	4	0	14,000	14,000	14,000.00	3163	200	8	0.0095	9.13	3153.00	0.1	3151.10	761,115	2%	3.4	1.31	0.09
57	58	2	5.0	100	500	4	2,000	14,000	16,000	16,000.00	3159	101	8	0.0189	7.73	3151.00	0.1	3149.10	1,073,543	1%	4.8	1.73	0.09
58	59	1	2.5	100	250	4	1,000	16,000	17,000	17,000.00	3158	118	8	0.0620	8.13	3149.00	0.1	3141.70	1,944,395	1%	8.6	2.66	0.07
59	60	1	2.5	100	250	4	1,000	17,000	18,000	18,000.00	3151	126	8	0.0756	8.93	3141.60	0.1	3132.10	2,147,086	1%	9.5	2.90	0.06
60	61	2	5.0	100	500	4	2,000	18,000	20,000	20,000.00	3141	256	8	0.0582	8.43	3132.00	0.1	3117.10	1,883,866	1%	8.4	2.74	0.07
61	62	1	2.5	100	250	4	1,000	20,000	21,000	21,000.00	3128	321	8	0.0652	9.93	3117.00	0.1	3096.10	1,993,942	1%	8.8	2.89	0.07
62	63	0	0.0	100	0	4	0	21,000	21,000	21,000.00	3114	89	8	0.0451	17.53	3096.00	5.1	3092.00	1,658,353	1%	7.4	2.54	0.08
226	64	0	0.0	100	0	4	0	0	0	0.00	3118	58	8	0.0854	9.45	3108.09	0.1	3103.16	2,282,010	0%	10.1	0.00	0.00
64	65	3	7.5	100	750	4	3,000	0	3,000	3,000.00	3113	114	8	0.0786	9.67	3103.06	0.1	3094.10	2,189,273	0%	9.7	1.70	0.03
65	66	1	2.5	100	250	4	1,000	3,000	4,000	4,000.00	3104	117	8	0.0086	9.13	3094.00	0.1	3093.00	722,057	1%	3.2	0.86	0.05
66	67	1	2.5	100	250	4	1,000	4,000	5,000	5,000.00	3103	112	8	0.0072	9.43	3092.90	0.1	3092.10	662,605	1%	2.9	0.87	0.06
67	68	2	5.0	100	500	4	2,000	5,000	7,000	7,000.00	3106	108	8	0.0084	12.93	3092.00	0.1	3091.10	713,562	1%	3.2	1.01	0.07
68	69	2	5.0	100	500	4	2,000	7,000	9,000	9,000.00	3108	155	8	0.0058	16.63	3091.00	0.1	3090.10	594,706	2%	2.6	0.96	0.09

Upstream MH	Downstream MH	DU	Population	Average Day Flow (gpcd)	Average Day Flow (gpd)	Peaking Factor	Peak Flow Dry Weather (gpd)	Upstream Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Total Estimated Peak Flow (gpd)	Estimated Ground Elevation ¹ (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Drop Through Manhole (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Velocity at Peak Flow (fps)	d/D
69	70	1	2.5	100	250	4	1,000	9,000	10,000	10,000.00	3112	87	8	0.0104	21.33	3090.00	0.1	3089.10	796,352	1%	3.5	1.22	0.08
70	63	0	0.0	100	0	4	0	10,000	10,000	10,000.00	3111	112	8	0.0089	21.13	3089.00	1.1	3088.00	736,688	1%	3.3	1.15	0.08
63	71	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3111	141	8	0.0057	23.13	3086.90	0.1	3086.10	589,557	5%	2.6	1.39	0.16
71	72	0	0.0	100	0	4	0	31,000	31,000	31,000.00	3105	165	8	0.0115	17.83	3086.00	0.1	3084.10	837,409	4%	3.7	1.77	0.13
72	73	3	7.5	100	750	4	3,000	31,000	34,000	34,000.00	3098	112	8	0.0081	12.93	3084.00	0.1	3083.10	702,799	5%	3.1	1.61	0.15
73	74	0	0.0	100	0	4	0	34,000	34,000	34,000.00	3094	110	8	0.0082	10.43	3083.00	0.1	3082.10	707,124	5%	3.1	1.62	0.15
74	75	0	0.0	100	0	4	0	34,000	34,000	34,000.00	3095	114	8	0.0079	12.73	3082.00	0.1	3081.10	694,068	5%	3.1	1.60	0.15
75	76	0	0.0	100	0	4	0	34,000	34,000	34,000.00	3094	105	8	0.0656	12.13	3081.00	0.1	3074.10	2,000,049	2%	8.9	3.35	0.09
76	129	3	7.5	100	750	4	3,000	109,000	112,000	112,000.00	3092	448	8	0.0277	16.83	3074.00	0.1	3061.60	1,299,656	9%	5.8	3.53	0.20
129	130	0	0.0	100	0	4	0	112,000	112,000	112,000.00	3067	53	8	0.0171	5.24	3061.50	0.1	3060.60	1,021,143	11%	4.5	2.98	0.22
130	131	1	2.5	100	250	4	1,000	112,000	113,000	113,000.00	3068	117	8	0.0119	6.73	3060.50	0.1	3059.10	851,848	13%	3.8	2.63	0.25
131	132	0	0.0	100	0	4	0	113,000	113,000	113,000.00	3073	153	8	0.0059	13.63	3059.00	0.1	3058.10	599,811	19%	2.7	2.05	0.29
132	133	0	0.0	100	0	4	0	113,000	113,000	113,000.00	3068	94	8	0.0202	9.13	3058.00	0.1	3056.10	1,109,850	10%	4.9	3.17	0.22
133	134	0	0.0	100	0	4	0	113,000	113,000	113,000.00	3072	436	8	0.0138	15.53	3056.00		3050.00	916,670	12%	4.1	2.77	0.24

Existing pipe elevation based on shots taken by CVL survey team

Flow from grinder pumps enters here

Flow from off-site parcels enters here

APPENDIX D

Grinder Pump

TECHNICAL BROCHURE

BRGS2012



RGS2012

SUBMERSIBLE GRINDER PUMP

 **GOULDS**
WATER TECHNOLOGY
a xylem brand

Goulds Water Technology

Wastewater

FEATURES

Design: Capable of grinding domestic sewage in individual residential applications.

Cutter System: Anti-roping design. Two blade rotary cutter is threaded to shaft. Stationary cutter ring is reversible for extended service.

Impeller: Silicon bronze, semi-open, non-overloading two-vane design with pump-out vanes for mechanical seal protection. Balanced for smooth operation.

Casing: Cast iron, volute type for high efficiency. Adaptable for guide rail system.

Motor: Fully submerged in oil-filled chamber. High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal, and protection against outside environment.

Motor Shaft: 300 series stainless steel, short overhang for minimum shaft deflection.

Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

Bearings: Upper and lower ball bearings for precision positioning of parts and to carry all radial and thrust loads.

Mechanical Seal: Hardfaced Silicon carbide for longer life, stainless steel metal parts, BUNA-N elastomers.

Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking.

O-Ring: Assures positive sealing against contaminants and oil leakage.

Paint: Electro-coat paint process protects all casting surfaces.

May be used with optional guide rail. See Fittings or Pump Removal Systems.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



Underwriters Laboratories

APPLICATIONS

Designed for high head residential sewage applications where a gravity system is not practical. Ideal for pressure sewage systems.

SPECIFICATIONS

Pump:

- Capacities: to 41 GPM
- Total heads: to 95' TDH
- Discharge: 1 1/4" NPT
- Temperature: 104°F (40°C) maximum continuous, 140°F (60°C) maximum intermittent
- Single mechanical seal: silicon carbide rotary/silicon carbide stationary, 300 series stainless steel metal parts, BUNA-N elastomers
- Fasteners: 300 series stainless steel
- Rotating cutter and cutter ring: 440 C hardened stainless steel

Motor:

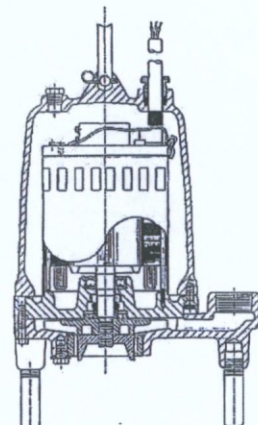
- Single phase: 2 HP, 60 Hz, 3450 RPM, 208/230 V, capacitor start with on winding thermal protector. No external capacitor kits required.
- Class F insulation
- Shaft: 300 series stainless steel threaded design
- Bearings: ball bearings upper and lower

Power Cord with bare lead ends:

- Use for connections in a control panel or junction box
- Standard length 20', 14/3 STOW
- Optional lengths of 30', 50' and 100'

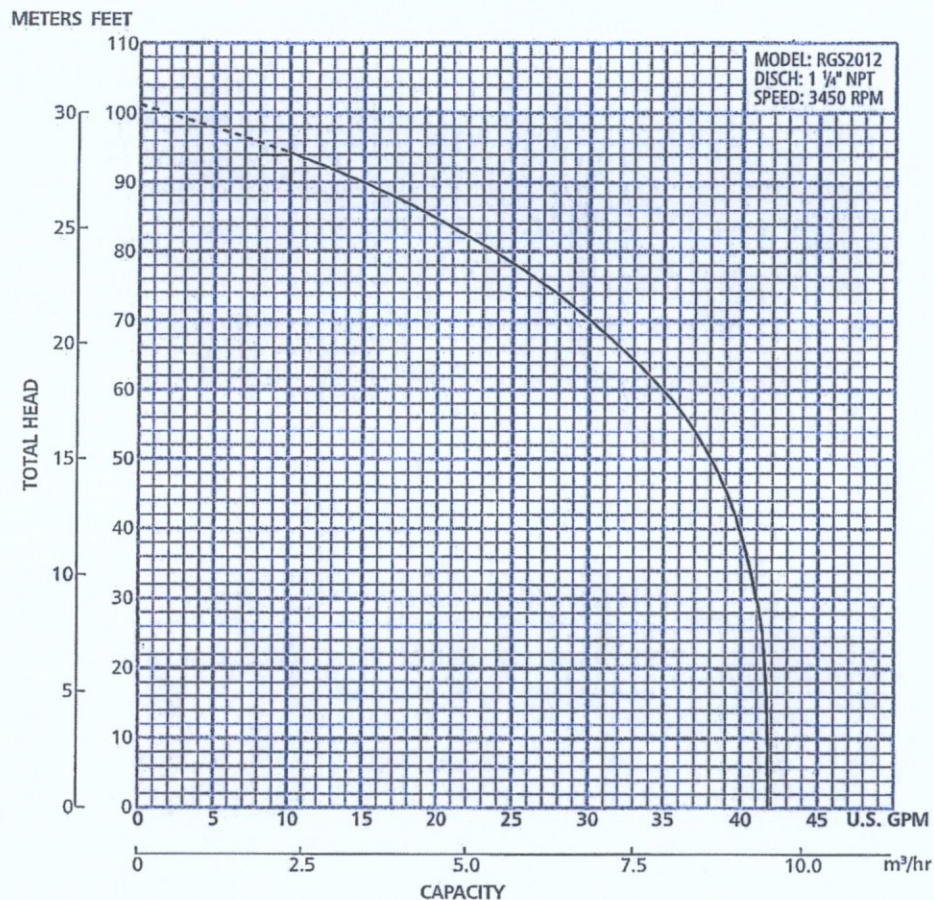
Power Cord with 230 V NEMA three prong grounding plug:

- P suffix equals a 20' long cord with plug
- PS suffix equals a 30' long cord with plug
- Allows direct connection to piggyback type float switch



Goulds Water Technology

Wastewater



⌋ = A 1 1/4" minimum discharge pipe requires a minimum flow of 10 gpm to maintain a 2 ft./sec. scouring velocity. Flows less than 10 gpm will allow solids to settle in the pipe.

MODEL INFORMATION

Order Number	HP	Volts	Phase	RPM	Operation	Discharge Size	Impeller Diameter (inches)	Maximum Amps	LRA	Power Cord	Weight (lbs.)
RGS2012	2	208/230	1	3450	Manual	1 1/4"	5.69"	15	59	20' with Bare Leads	75
RGS2012P					Automatic					20' with 230 V Plug	
RGS2012PA					Manual					20' with 230 V Plug and Float	76
RGS2012PS					Manual					30' with 230 V Plug	

A non-stock pump may be special ordered with optional legs by adding an "L" suffix to the Order Number. Example: RGS2012L, RGS2012SL, RGS2012PSL, etc. See "L" List Adder in price book.

MOTOR DATA

HP	Volts	Phase	RPM	Maximum Amps	LRA	Full Load Motor Efficiency	Resistance		Power Cable	Fuse/Circuit Breaker
							Start	Line-Line		
2	208/230	1	3450	15	59	70	2.47	0.6	14/3	30

APPLICATION DATA

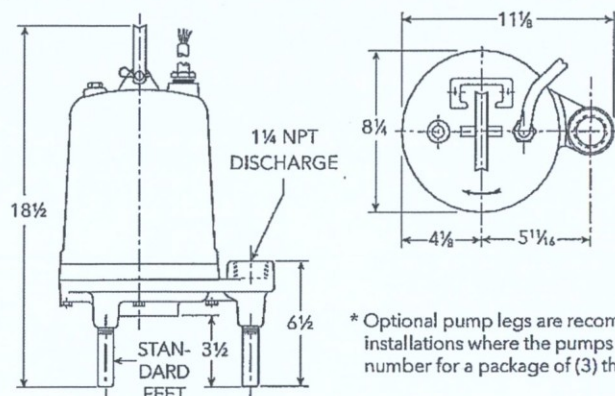
Minimum Casing Thickness	5/16"
Casing Corrosion Allowance	1/8"
Maximum Working Pressure	50 PSI
Maximum Submergence	50 feet
Minimum Submergence	Fully submerged for continuous operation 6" below top of motor for intermittent operation
Maximum Environmental Temperature	40°C (104°F) continuous operation 60°C (140°F) intermittent operation
Maximum Number of Evenly Distributed Starts per hour	10
Bearings	B-10 life of 30,000 hours min.
Minimum Basin Size	Simplex - 24" x 36" Fiberglass Duplex - 36" x 36" Fiberglass
1 1/4" Minimum Discharge Pipe Diameter	Requires a minimum flow of 10 gpm to maintain a 2 ft./sec. scouring velocity
2" Maximum Discharge Pipe Diameter	Requires a minimum flow of 21 gpm to maintain a 2 ft./sec. scouring velocity

STANDARD PARTS

Ball Bearing - upper	Single row ball - SKF 6203-2Z
Ball Bearing - lower	Single row ball - SKF 6204-2Z
Mechanical Seal	Silicon carbide/silicon carbide; Type 16
O-Ring - motor cover	BUNA-N, AS 568A-166

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



* Optional pump legs are recommended for poly or fiberglass basin installations where the pumps contact the basin floor. The order number for a package of (3) three optional pump legs is 4K639.

CONSTRUCTION DETAILS

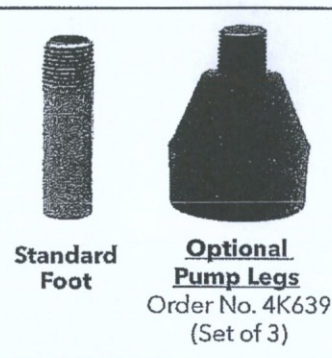
Power Cable - type	14/3 STOW, single phase with bare leads 14/3 STOW, with 230 V NEMA three prong grounding plug
Motor Cover	Gray cast iron - ASTM A48, Class 30
Bearing Housing	Gray cast iron - ASTM A48, Class 30
Seal Housing	Gray cast iron - ASTM A48, Class 30
Casing	Gray cast iron - ASTM A48, Class 30
Impeller	Cast silicon bronze - ASTM B584 C87600
Motor Shaft	AISI 300 series stainless steel
Motor Design	NEMA 48 frame, oil filled with Class F insulation
Motor Overload Protection	On winding thermal protector - auto reset
External Hardware	300 series stainless steel
Impeller Type	Semi-opened with pump out vanes on back shroud
Cutter	Two blades; type 440C hardened stainless steel
Oil Capacity - motor chamber	.88 gallons

CUTTER ASSEMBLY

2-Blade Rotating Cutter



Reversible Cutter Ring



Standard Foot

Optional Pump Legs
Order No. 4K639
(Set of 3)

xylem
Let's Solve Water

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