APPENDIX K

Utilities

Water Availability Letter

APPENDIX K

County Waterworks District No. 8
City of Simi Valley
2929 Tapo Canyon Road, Simi Valley, California 93063 (805) 583-6700

WATER AVAILABILITY LETTER

Date: 04/01/2024

SVJV Partners, LLC
PO Box 701 North 44th Street
Phoenix, AZ 85008

SUBJECT: CONSTRUCTION OF 160-SFR AND 50-MFR
0 east of Falcon St.
Simi Valley, CA 93063
APN: 6150500075

To: SVJV Partners, LLC,

With regard to the availability of water service for the proposed development, the following relates to the availability of the public water system:

1. Project Location: The subject property is located within Zone 1248 AND 1190 of Waterworks District No. 8 (District) service area and is therefore eligible for public water service.

2. Availability of Water Service: Based on the information provided in your Application, the District has determined the following for the subject property and it's proposed use:
   - Average water demand is 154 gallons per minute (gpm)
   - Peak water demand is 344 gpm
   - Water service pressure is 45 pounds per square inch (psi)
   - Fire flow requirement is 1,500 gpm with a residual pressure of 20 psi at the fire hydrant(s) for the property

3. Water Delivery: Potable water is available for the proposed project. Additional on-site and off-site water improvements will need to be installed to provide potable water to the site. It is the Applicant's responsibility to provide the infrastructure from the District's point of connection to the proposed development. The Applicant shall
construct all water facilities in compliance with the Water Design and Construction Standards adopted by the District Board of Directors on July 26, 2021, and subsequent revisions.

Next step for Applicant: Obtain a "Water Will-Serve Letter" from the District and all applicable water service connection fees are to be paid prior to issuance of a Certificate of Occupancy.

If you have any questions, please contact the undersigned at (805) 583-6767.

Sincerely,

Michelle Elorde, P.E.
Principal Engineer, Waterworks District No. 8

TetraTech Hydraulic Report Jun 21, 2021

APPENDIX K

TETRA TECH

Technical Memorandum

Date:	June 21, 2021		
To:	Keith Christiansen, Christiansen & Company		
From:	Ken Berard		
Project:	Simi Valley – North Canyon Ranch Development	***Project Number:***	200-328532-21001
Subject:	Water System Hydraulic Analysis for Tentative Tract 5658-A		

1.0 Background

1.1 Location

The proposed North Canyon Ranch development (Tentative Tract Map 5658) is located in the City of Simi Valley and is bounded by the Simi Valley Town Center to the south and the Big Sky Ranch residential development to the east. Currently, the site is an undeveloped mountain/hillside that generally slopes from north to south.

1.2 Proposed Project

The North Canyon Ranch project site area is approximately 160 acres. The proposed development will consist of 159 lots of low density single family housing, 50-units of multi-family housing, and a park. The lots range from an elevation of 998.9 ft. to 1137.7 ft. The tentative tract map of the development is included in Appendix 1.

1.3 Water System

The proposed potable water system consists of a series of branching and looped pipelines of various diameter PVC pipes. The proposed system will tie into the City of Simi Valley's water system at Falcon St. to the southeast, which is at pressure zone 1248. It will also tie into the City's lower pressure zone of 1190 in the southwest with a normally closed Pressure Reducing connection. Proposed pipe diameters range from 6" up to 12". Figure 1 shows the proposed water system layout.

2.0 Criteria

The proposed potable water system has been analyzed in accordance with the Ventura County Waterworks District No. 8 (VCWWD #8) *Water Design and Construction Standards* which is summarized as follows.

2.1 Pressure Criteria

Water mains shall be designed to provide for service pressures between a minimum of **40 psi** and a maximum of **150 psi**. A minimum service pressures of 40 psi should be available during a high demand period and when the source tank is at its lowest operating level. The maximum available service pressure should not exceed 150 psi, and should be analyzed during a low demand period and when the source tank is at its highest level. The preferred operating service pressure range is between 45 psi and 80 psi. Static service pressures in excess of 80

psi will require installation of individual pressure regulators at the house or building on the customer side of the meter.

2.2 Velocity Criteria

Water mains shall be designed to provide a mean velocity of not more than **5 ft/s** under maximum day demands.

2.3 Fire Flow Criteria

The North Canyon Ranch Development consists of low to medium density residences. Fire flow required is **1500 gpm** at **20 psi** residual pressure.

Fire hydrant locations can be spaced a maximum of 500' and a fire hydrant must be placed within 150' from the last house in a cul-de-sac.

2.4 Demands

The Average Day Demand (ADD) are calculated based on a water duty for "small detached residential" of **420 gpd/unit** and **259 gpd/unit** for "condominium". The Maximum Day Demand (MDD) peaking factor is **2.15** times the ADD and the Peak Hour Demand (PHD) peaking factor is **4.50** times the ADD.

3.0 Hydraulic Model

3.1 Hydraulic Modeling Software

The proposed water system for the development was modeled using H2ONET™ Version 13.5 from Innovyze, that runs as an AutoCAD add-on.

3.2 Model Development

The hydraulic model pipeline alignment was created using the proposed water alignment of the tentative tract map no. 5658-A, where the pipe alignment follows street centerline. Pipe sizing generally followed the Potable Water Analysis Report prepared by TGA Engineering Inc., in 2009 (updated in 2016). However, the previous analysis report was based on a somewhat different lot configuration, and assumptions were made for pipe size at certain locations as well as pipe sizing adjustments based on model results.

Model nodes are located at dead ends, pipe intersections, and strategic locations along pipe spans to adequately capture lot demands. Node elevations were set based on street surface elevation. For the purposes of fire flow analysis, nodes were located at a maximum spacing of 500' along residential streets which matches the *Water Design and Construction Standards* maximum of 500 ft. spacing for fire hydrants.

The connection to pressure zone 1248 at Falcon St. to the east was modeled as a pump with a multi-point curve in order to represent the ability of the existing system to provide flow to the development. The points along the pump curve were calculated based on the static and dynamic pressure/flow readings from the fire flow test conducted in March of 2021. City staff mentioned that the fire flow test was performed during the high demand period of the day, and the tank level noted during the flow test was at the low operating tank level of 18 ft. The fire flow test was performed during a high demand period and low tank level to represent the possibility of a fire occurring when the system is already stressed by high demands.

The fire flow test results performed by the City are included in Appendix 6. The test form indicates a static pressure of 98 psi (at 0 gpm flow). The test form also indicates a dynamic flow of 7,814.4 gpm @ 20 psi.

System supply curves were developed based on the fire flow test and input into the hydraulic model. The system curves are included in Appendix 7. Two curves were developed: one based on a high demand period when the level in the tank is at 18' and one based on when the tank is full at 32'.

The connection to pressure zone 1190 is at the end of First St. and the location where the Falcon St. extension connects. This location was modeled as a normally closed valve, separating pressure zone 1248 and 1190.

The complete modeled system is shown in Figure 1.

3.3 User Demands

The user demands were determined based on the number of lots, the water duty noted in the Criteria section and the peaking factors noted in the Criteria section. A summary of node demands for ADD, MDD, and PHD is included in Appendix 2.

4.0 Analysis and Results

4.1 Average Day Demand Runs (High Pressure Scenario)

The average day demand scenario is run to simulate high pressure conditions in the system. The average day demand scenario was modeled with a system curve corresponding to the high tank level. High system pressure will occur at low elevation locations. High pressure is considered as pressure exceeding the criteria of 80 psi, as previously defined. At these locations, individual pressure regulating devices will need to be installed.

Pressures under the ADD scenario range from 48 psi to 110 psi. It was found that pressure exceeded 80 psi in all but the highest area of the development. Lots 43 to 96, that are located at higher elevations, do not exceed 80 psi, and do not require pressure regulators. All other lots require pressure regulators. It should be noted that at the highest elevation in the development, the pressure in the distribution system gets as low as 47 psi, which is above the preferred minimum pressure.

Pressure results for average day demand runs are included in Appendix 3 and a table of the lots requiring pressure regulators is included in Appendix 8.

4.2 Peak Hour Demand Runs (Low Pressure/High Velocity Scenario)

The peak hour demand scenario is run to simulate low pressure conditions and high average velocities in the system. The peak hour demand scenario was modeled with a system curve corresponding to the low operating tank level. The peak hour demand occurs one time out of the year. Low system pressure will often occur at high elevations. Desired pressure is a minimum of 45 psi, and low pressure is considered as pressure below 40 psi. Under PHD, only Node J56 at elevation 1136 ft. is just above the minimum pressure and is estimated to be 41 psi, measured at the watermain in the street (i.e. in the City's system). It is estimated that this will equate to about 40 psi at the building pad elevation of the last lot in the cul-de-sac (lot 70). In addition, lots 68 and 69 are expected to have pressure between 40 and 43 psi. All other lots will have pressures of 45 psi or higher.

The peak hour demand scenario is also run to simulate high pipeline velocities, however, there are no pipe velocity concerns for this run. All pipe velocities are below 1 ft/s which is well below the maximum velocity of 5 ft/s. Since there are no high velocities under peak hour demands, there will be no high velocities under maximum day demand (maximum day demand is the criteria for checking velocities).

Pressure and velocity for peak hour demand runs are included in Appendix 3 and Appendix 4, respectively.

4.3 Maximum Day Plus Fire Flow Runs

The maximum day plus fire flow scenario is run to determine if adequate fire flow can be provided. The maximum day plus fire flow scenario was modeled with a system curve corresponding to the low operating tank level. As previously stated, the criteria for fire flow is 1500 gpm at 20 psi residual pressure. The specific locations for the fire hydrants were not available at the time of this analysis, and fire flow analysis was run for all nodes in the model.

Results indicate that all nodes can provide the minimum fire flow. The nodes with the lowest available fire flows are typically at the end of cul-de-sacs at higher elevations. Node J72 is located at the end of the street near lot 10 and has an available fire flow of 1,641 gpm. Node J56 is located at the highest elevation near lot 70 and has an available fire flow of 1,565 gpm. Both nodes meet the minimum required fire flow.

Fire flows of 1,500 gpm in a 6-inch watermain with only one flow direction (e.g. at a cul-de-sac) result in velocities of just over 17 ft/s. Fire flows of 1,500 gpm in a 6-inch watermain where flow is served from two

directions (e.g. at the middle of a block) result in velocities just over 10 ft/s. Since a maximum velocity during fire flow is not published, we checked with the City and verified that 6-inch watermains at cul-de-sacs are acceptable where they can provide the required fire flow.

Fire flow results are included in Appendix 5.

5.0 Conclusion

Because of the range in elevations of the development, the system experiences a wide range of pressures. A majority of the development will require individual pressure regulators since system pressures will be above the 80 psi maximum. Refer to Figure 1 For pipeline sizes and locations of lots requiring individual pressure regulators.

All lots will meet the minimum required pressure of 40 psi as shown in Appendix 8.

All lots will meet the minimum fire flow requirement at 20 psi.

LOTS THAT REQUIRE PRESSURE REGULATORS (>80 psi)

ZONE 1190 - PRESSURE REGULATING STATION (NORMALLY CLOSED)

EXIST 16" PIPE

TO FIRST ST.

FALCON ST. EXTENSION

FALCON ST.

CONNECT TO EXIST 12" PIPE

ZONE 1248

BUTTERFLY VALVE (NORMALLY OPEN)

LOT 160 5.39 AC.

J26 J32 J34 J36 J38 J40 J42 J44 J46 J48 J50 J52 J54 J56 J58 J60 J62 J64 J66 J68 J70 J72 J74 J76 J78 J80 J82 J84

P13 P19 P21 P23 P25 P27 P29 P31 P33 P35 P37 P39 P41 P43 P45 P47 P49 P51 P53 P55 P57 P59 P61 P63 P65 P67 P69 P71 P73 P75 P77 P79 P81 P87 P89 P91

TETRA TECH
www.tetratech.com

MARK	DATE	DESCRIPTION	BY

CITY OF SIMI VALLEY

NORTH CANYON RANCH (TTM 5658)

POTABLE WATER SYSTEM

Project No.:
Designed By:
Drawn By:
Checked By:

FIGURE 1

Bar Measures 1 inch

Copyright Tetra Tech

Appendix 1

TENTATIVE TRACT MAP NO. 5658-A

NORTH CANYON RANCH

PROJECT CONTACTS

SVJV PARTNERS, LLC
701 N. 44TH STREET
PHOENIX, CA 85008
CONTACT: PATRICK SOVEREIGN
PH: 480-429-7000
FAX: 480-429-3100
EMAIL: PSOVEREIGN@BEUSGILBERT.COM

CIVIL ENGINEER/ PLAN PREPARER

CHRISTIANSEN & COMPANY
3649 NINTH STREET
RIVERSIDE, CA 92501
CONTACT: KEITH CHRISTIANSEN- RCE 50083
PH: 951-323-4713
FAX: 951-684-4497
EMAIL: KEITHCHRISTIANSEN@CCOCIVIL.COM

LANDSCAPE ARCHITECT

LAND ARQ, INC.
865 S. MILLIKEN AVE., STE E
ONTARIO, CA 91761
CONTACT: FAUSTO REYES
PH: 951-538-8001
EMAIL: FAUSTO@LANDARQ.COM

MAP PREPARATION DATE

DECEMBER 30, 2017

ASSESSOR PARCEL NO.

615-0-160-455

ZONING

EXISTING: OS-160 IN UNINCORPORATED VENTURA COUNTY
PROPOSED: RMOD, (SFR-DETACHED & MF-ATTACHED), OS
SURROUNDING: RCC (SP), RM, RMOD

GENERAL PLAN DESIGNATION:

EXISTING: OS-160
PROPOSED: MDR, RMOD
SURROUNDING: URBAN, OPEN SPACE- URBAN RESERVE

AREA CALCULATION

ITEM	DEVELOPABLE PURPOSE	OWNER	AREA (AC)	%
RESIDENTIAL (LOTS 1-159)	SINGLE FAMILY RESIDENTIAL	PRIVATE	27.22	16.98
RESIDENTIAL (LOT 160)	MULTIFAMILY (TOWNHOME 50 UNITS)	PRIVATE	5.39	3.36
STREET LOTS (LOTS A-LOT K)	INGRESS/EGREES	HOA	17.34	10.82
OPEN SPACE (LOT L)	OPEN SPACE	PARK DIST.	70.82	44.17
POCKET PARKS (LOTS R & W)	LANDSCAPE	HOA	0.43	0.27
LANDSCAPE (LOT O-Q & S-T)	LANDSCAPE	HOA	1.38	0.96
DRAINAGE BASINS (LOTS M-N)	GRADING/DRAINAGE	HOA	13.93	8.69
SLOPES (LOT U & V)	GRADING/DRAINAGE	HOA	23.81	14.85
TOTAL:			160.32	100.00

MINIMUM LOT SIZE FOR SFR=5000 SF MAXIMUM LOT SIZE FOP SFR=23857 SF
AVERAGE LOT SIZE FOR SFR=7669 SF

* DEVELOPMENT LIMIT LINE CORRESPONDS WITH THE 20 PERCENT LINE, BUT EXTENDS WHERE A LANDSLIDE REMOVAL AND SLOPE STABILITY IS REQUIRED. LETTERED LOTS ARE TO BE DEDICATED TO MAINTENANCE ASSOCIATION

PARKING:

	SPACES	ADA	TOTAL
TOWNHOMES	18	2	20

UTILITIES

SEWER: CITY OF SIMI VALLEY SANITATION DIVISION
2929 TAPO CANYON ROAD
SIMI VALLEY, CA 93063
PH: 805-583-6786

WATER: CITY OF SIMI VALLEY WATER WORKS DISTRICT NO. 8
2929 TAPO CANYON ROAD
SIMI VALLEY, CA 93063
PH: 805-583-6786

ELECTRIC: SOUTHERN CALIFORNIA EDISON COMPANY
3589 FOOTHILL DR.
THOUSAND OAKS, CA 91361
PH: 805-494-7013

GAS: SOUTHERN CALIFORNIA GAS COMPANY
977 CHAMBERS LANE
SIMI VALLEY, CA 93065
PH: 818-701-3233

TELEPHONE/CABLE: AT&T
2250 WARD AVENUE
SIMI VALLEY, CA 93605
PH: 818-373-6864

FIRE: VENTURA COUNTY FIRE PROTECTION DISTRICT
165 DURLEY AVENUE
CAMARILLO, CA 93010
PH: 805-389-9710

EARTHWORK

	CUT (C.Y)	FILL (C.Y.)
RAW:	1,216,800	606,150
LOSSES (30%):	(365,040)	
TOTAL:	851,760 CY	606,150 CY

IMPORT/EXPORT: 245,610 CY USED FOR REMEDIAL GRADING LOSSES
DISTURBED AREA: 86.50 AC.

SCHOOL DISTRICT:

SIMI VALLEY UNITED SCHOOL DISTRICT
875 E. COCHRAN ST.
SIMI VALLEY, CA 93605
PH: 805-520-6500

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE AREA OF SIMI VALLEY, COUNTY OF VENTURA, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A AS SHOWN AND DESIGNATED ON THAT CERTAIN PARCEL MAP WAIVER NO. 1246, RECORDED AUGUST 11, 2004 AS INSTRUMENT NO. 04-0221269 OF OFFICIAL RECORDS AND BEING A PORTION OF SUBDIVISION DELINEATED AS TAPO UPON THAT CERTAIN MAP ENTITLED MAP OF THE LANDS OF RANCHO SIMI VALLEY IN VENTURA AND LOS ANGELES COUNTIES, IN THE COUNTY OF VENTURA, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 3, PAGE 7 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

AERIAL PHOTOGRAMMETRY FLOWN: JANUARY 2015 PREPARED BY INLAND AERIAL

NOTE:

NO OBJECTS OVER 30" IN HEIGHT THAT AFFECT SIGHT DISTANCE SHALL BE PLACED WITHIN LINE OF SIGHT LIMITS.

NOTE:

ALL LETTERED LOTS, ROAD RIGHT-OF WAY LANDSCAPING, AND DETENTION BASINS SHALL BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION (HOA). HOA SHALL MAINTAIN FUEL MODIFICATION ZONE.

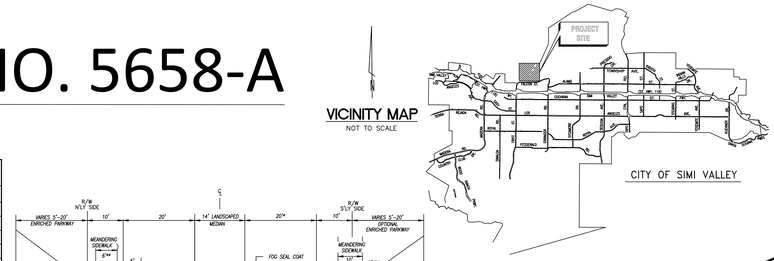
Parcel	Area (AC)
A	3.01
B	1.90
C	0.55
D	0.64
E	0.29
F	0.66
G	0.86
H	0.57
I	0.88
J	6.57
K	1.37
L	57.94
M	4.04
N	9.89
O	0.13
P	0.06
Q	0.05
R	0.16
S	0.99
T	0.17
U	36.69

Parcel	Area (SF)
1	8268
2	10799
3	8198
4	7775
5	7195
6	7667
7	6761
8	6991
9	15829
10	9671
11	8931
12	11864
13	9345
14	9030
15	8919
16	10683
17	10732
18	13626
19	8035
20	8155
21	10090
22	7561
23	7082
24	6757
25	6575
26	6929
27	11312
28	9855
29	8225
30	7915
31	8934
32	8633
33	7261
34	5668
35	5357
36	5268
37	5255
38	5902
39	7314
40	6099
41	5264
42	5263
43	5787
44	5786
45	5784

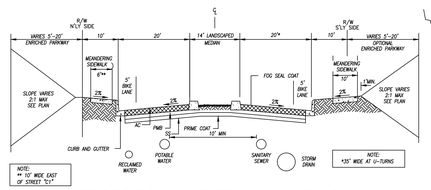
Parcel	Area (SF)
46	5782
47	5781
48	6185
49	6150
50	6910
51	7573
52	7634
53	8326
54	6673
55	7228
56	6742
57	6499
58	6391
59	7155
60	6144
61	6067
62	6530
63	8218
64	9187
65	8144
66	6935
67	6932
68	6998
69	12320
70	14075
71	8466
72	7475
73	6612
74	6505
75	6484
76	7011
77	6859
78	6877
79	6871
80	6865
81	6859
82	7993
83	7983
84	5696
85	5696
86	5696
87	5696
88	5696
89	5683
90	5167

Parcel	Area (SF)
91	6750
92	5536
93	5550
94	5550
95	5529
96	7375
97	9534
98	7436
99	5640
100	5659
101	6313
102	6484
103	5504
104	7446
105	7279
106	6175
107	6982
108	6709
109	7144
110	7484
111	6664
112	8191
113	7435
114	5000
115	5431
116	5299
117	5185
118	5088
119	5710
120	6518
121	7627
122	7200
123	6730
124	7033
125	9886
126	10940
127	11326
128	9433
129	8449
130	9084
131	17511
132	11573
133	5093
134	5093
135	5000

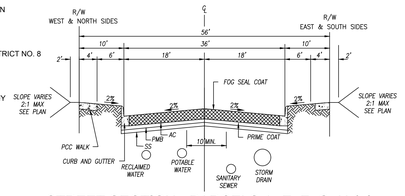
Parcel	Area (SF)
136	5000
137	5000
138	5000
139	5000
140	5000
141	5000
142	5000
143	5000
144	5000
145	5659
146	5395
147	5094
148	5000
149	5000
150	5000
151	5227
152	8712
154	8455
155	6506
156	6979
157	7149
158	15084
159	23857
160	234578 CONDOMINIUM LOT (50 UNITS)



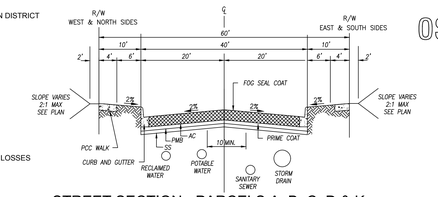
VICINITY MAP
NOT TO SCALE



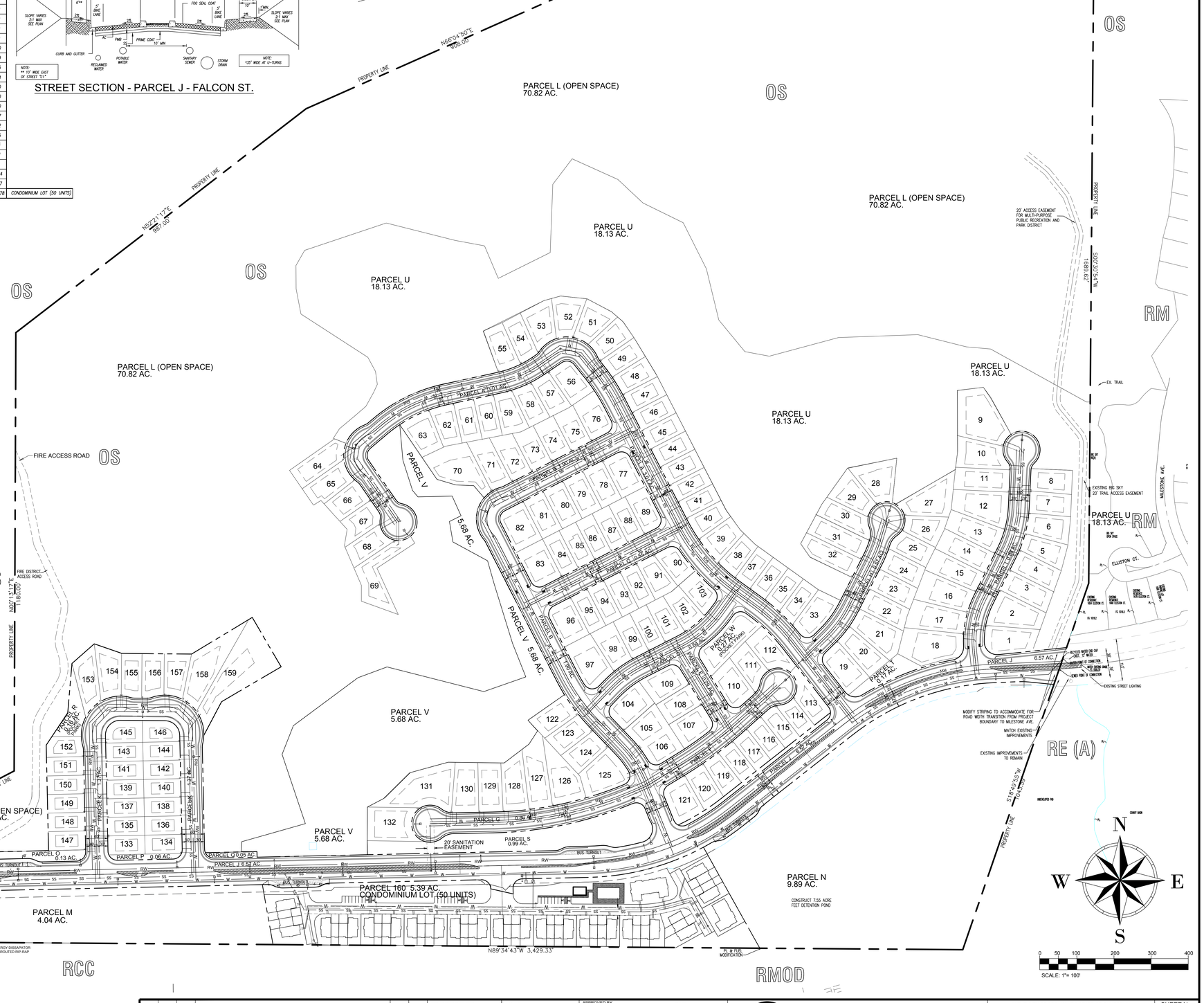
STREET SECTION - PARCEL J - FALCON ST.



STREET SECTION - PARCELS A, E, F, G, H & I



STREET SECTION - PARCELS A, B, C, D & K



DATE	BY	MARK	APPR.	DATE	
ENGINEER		REVISIONS	CITY		
DESIGNED BY: KAC		DRAWN BY: RH	CHECKED BY: KAC		

RECOMMENDED FOR APPROVAL
DATE
CHECKED BY
DATE

SEAL — REGISTERED PROFESSIONAL ENGINEER — KEITH A. CHRISTIANSEN No. 50083 Civil Exp. 06/30/2019 — STATE OF CALIFORNIA

APPROVED BY DATE
PREPARED UNDER THE DIRECT SUPERVISION OF: DATE
KEITH A. CHRISTIANSEN - RCE 50083 - EXPIRES 06-30-2019

SCALE: 1" = 100'
DATE: NOVEMBER 2017

Christiansen & Company
3649 Ninth Street
Riverside, Calif. 92501
Ph: 951-323-4713 Fax: 951-684-4497
email: keith.christiansenco@gmail.com

BENCHMARK:
STANDARD VENTURA COUNTY BENCH MARK IN THE CITY OF SIMI VALLEY AT THE INTERSECTION OF COCHRAN STREET AND ERRINGER ROAD, A BRASS DISK SET IN THE CONCRETE, ENCASED IN STANDARD MONUMENT WELL. DISK IS 18 INCHES BELOW SURFACE ELEVATION: 882.745

IN THE CITY OF SIMI VALLEY, STATE OF CALIFORNIA

TENTATIVE TRACT NO. 5658-A
NORTH CANYON RANCH

FOR SLPR, LLC
JOB No.

SHEET No. 1 OF 1 SHTS
FILE No.

Appendix 2

APPENDIX 2

DEMAND ALLOCATION							
				ADD Demand	Demand (GPM)		
ID (Char)	Elevation (ft)	No. of Residential Homes	No. of Condos	(GPD/unit)	ADD	MDD	PHD
J26	967.5	0	0	--	0.00	0.00	0.00
J28	1,009.00	0	0	--	0.00	0.00	0.00
J30	1,008.50	4	0	420	1.17	2.51	5.25
J32	994	0	0	--	0.00	0.00	0.00
J34	1,006.00	5	0	420	1.46	3.14	6.56
J36	1,004.00	6	0	420	1.75	3.76	7.88
J38	1,037.50	0	0	--	0.00	0.00	0.00
J40	1,029.50	7	0	420	2.04	4.39	9.19
J42	1,030.40	0	0	--	0.00	0.00	0.00
J44	1,079.00	7	0	420	2.04	4.39	9.19
J46	1,032.00	7	0	420	2.04	4.39	9.19
J48	1,048.30	7	0	420	2.04	4.39	9.19
J50	1,035.60	8	0	420	2.33	5.02	10.50
J52	1,050.00	7	0	420	2.04	4.39	9.19
J54	1,041.00	5	0	420	1.46	3.14	6.56
J56	1,136.00	3	0	420	0.88	1.88	3.94
J58	1,029.40	0	0	--	0.00	0.00	0.00
J60	1,053.90	10	0	420	2.92	6.27	13.13
J62	1,068.90	7	0	420	2.04	4.39	9.19
J64	1,077.00	0	0	--	0.00	0.00	0.00
J66	1,067.00	12	0	420	3.50	7.53	15.75
J68	1,029.90	6	0	420	1.75	3.76	7.88
J70	1,048.50	10	0	420	2.92	6.27	13.13
J72	1,044.10	18	0	420	5.25	11.29	23.63
J74	1,016.00	0	0	--	0.00	0.00	0.00
J76	1,081.00	10	0	420	2.92	6.27	13.13
J78	1,121.00	8	0	420	2.33	5.02	10.50
*J80	1,017.80	0	50	259	108.99	119.34	140.47
J82	994.00	8	0	420	2.33	5.02	10.50
J84	1,001.00	4	0	420	1.17	2.51	5.25
J86	998.00	0	0	--	0	0	0
				TOTAL	**154.20**	**216.53**	**343.91**

*includes 100 gpm irrigation demand for multi-family common areas

Appendix 3

APPENDIX 3

PRESSURE				
		Pressure		
ID (Char)	Elevation (ft)	ADD	MDD	PHD
J26	967.5	121.2	114.74	113.91
J28	1,009.00	103.25	96.81	96.06
J30	1,008.50	103.43	96.97	96.14
J32	994	109.72	103.25	102.43
J34	1,006.00	104.52	98.05	97.22
J36	1,004.00	105.38	98.92	98.09
J38	1,037.50	90.88	84.42	83.6
J40	1,029.50	94.34	87.89	87.06
J42	1,030.40	93.95	87.49	86.68
J44	1,079.00	72.9	66.44	65.62
J46	1,032.00	93.26	86.8	85.98
J48	1,048.30	86.2	79.74	78.92
J50	1,035.60	91.7	85.24	84.42
J52	1,050.00	85.46	79	78.18
J54	1,041.00	89.37	82.91	82.09
J56	1,136.00	48.2	41.74	40.92
J58	1,029.40	94.39	87.94	87.13
J60	1,053.90	83.78	77.32	76.5
J62	1,068.90	77.28	70.82	70
J64	1,077.00	73.77	67.31	66.49
J66	1,067.00	78.1	71.64	70.82
J68	1,029.90	94.18	87.72	86.91
J70	1,048.50	86.12	79.66	78.84
J72	1,044.10	88.03	81.59	80.79
J74	1,016.00	100.21	93.77	92.99
J76	1,081.00	72.03	65.57	64.75
J78	1,121.00	54.7	48.24	47.42
J80	1,017.80	99.4	92.94	92.11
J82	994.00	107.98	101.52	100.69
J84	1,001.00	106.68	100.22	99.39
J86	998.00	107.98	101.52	100.69

Appendix 4

APPENDIX 4

VELOCITY				
ID	Diameter (in)	Length (ft)	Flow (gpm)	Velocity (ft/s)
P19	12	945.85	0	0
P21	8	212.34	18.36	0.12
P23	8	148.94	5.27	0.03
P25	6	593.99	9.19	0.1
P27	8	201.83	10.99	0.07
P29	8	268.56	2.82	0.02
P31	8	259.83	22.51	0.14
P33	8	222.2	44.73	0.29
P35	8	248.63	3.94	0.03
P37	8	460.56	20.13	0.13
P39	8	33.85	2.58	0.02
P41	6	430.04	13.13	0.15
P43	6	638.58	24.94	0.28
P45	8	156.22	0	0
P47	12	468.21	175.91	0.5
P49	12	610.57	164.92	0.47
P51	12	343.4	325.57	0.92
P53	12	228.07	350.51	0.99
P55	12	288.76	55.09	0.16
P57	12	228.48	88.35	0.25
P59	12	258.83	139.64	0.4
P61	12	230.85	160.65	0.46
P63	8	253.34	17.36	0.11
P65	8	329.54	13.52	0.09
P67	8	159.96	2.58	0.02
P69	8	534.37	11.77	0.08
P71	8	300.24	13.03	0.08
P73	6	177.21	9.19	0.1
P75	10	619.01	14.44	0.06
P77	12	308.25	27.57	0.08
P79	12	823.28	35.44	0.1
P81	8	212.34	7.86	0.05
P87	12	269.98	18.36	0.05
P89	8	212	17.08	0.11
P91	8	212	11.83	0.08

Appendix 5

APPENDIX 5

FIRE FLOW				
ID	Fire-Flow Demand (gpm)	Available Flow at Hydrant (gpm)	Available Flow Pressure (psi)	Check
J26	1,500.00	4,570.40	20	GOOD
J28	1,500.00	7,595.85	20	GOOD
J30	1,500.00	4,041.37	20	GOOD
J32	1,500.00	4,771.40	20	GOOD
J34	1,500.00	4,108.08	20	GOOD
J36	1,500.00	4,120.57	20	GOOD
J38	1,500.00	5,119.02	20	GOOD
J40	1,500.00	1,749.98	20	GOOD
J42	1,500.00	5,463.97	20	GOOD
J44	1,500.00	3,781.92	20	GOOD
J46	1,500.00	2,806.32	20	GOOD
J48	1,500.00	4,861.09	20	GOOD
J50	1,500.00	4,777.07	20	GOOD
J52	1,500.00	4,778.17	20	GOOD
J54	1,500.00	5,325.07	20	GOOD
J56	1,500.00	1,571.66	20	GOOD
J58	1,500.00	5,918.44	20	GOOD
J60	1,500.00	4,919.10	20	GOOD
J62	1,500.00	4,240.12	20	GOOD
J64	1,500.00	3,841.56	20	GOOD
J66	1,500.00	4,429.76	20	GOOD
J68	1,500.00	5,691.26	20	GOOD
J70	1,500.00	1,904.18	20	GOOD
J72	1,500.00	1,641.10	20	GOOD
J74	1,500.00	6,827.31	20	GOOD
J76	1,500.00	3,886.71	20	GOOD
J78	1,500.00	2,239.65	20	GOOD
J80	1,500.00	5,321.50	20	GOOD
J82	1,500.00	4,335.11	20	GOOD
J84	1,500.00	4,334.88	20	GOOD
J86	1,500.00	4,856.18	20	GOOD

Appendix 6

Full Flow - Tank Level 18 FT

4"

VENTURA COUNTY FIRE PROTECTION DISTRICT
BUREAU OF FIRE PREVENTION

165 Durley Avenue, Camarillo, CA 93010
Phone: (805) 389-9738 Web: www.fire.countyofventura.org

REQUIREMENTS FOR CONSTRUCTION – APPLICATION

Notice: Approval of this application expires 6 months from date of issuance, unless a building permit for this project has been applied for, in which case this approval expires at the date of building permit expiration.

Section I

Project Address: Falcon St. Near Erringer Rd. Simi Valley 93065 (NUMBER / STREET / CITY / ZIP CODE)

APN: 615-160-465 Tract No.: Tent 5658-A Lot No.: _____ Planning No.: _____

BUILDING DESCRIPTION: Sq. Ft. Proposed: N/A Existing: _____ No. of Stories: _____

Use of Building: SFR & MFR Construction Type: VB

☐ Existing structure has automatic fire sprinklers installed.

☐ Manufactured Home - (see instructions for important note)

Applicant Name: Keith Christiansen	Owner Name: SVJV Partners, LLC
Address: 3649 Nonth St. (STREET)	Address: 701 N. 44th St. (STREET)
Riverside 92501 (CITY / ZIP CODE)	Phone Address: Phoenix AZ 85008 (CITY / ZIP CODE)
Phone: 951-323-4713	Phone: 480-429-3000
Email: keith@ccocivil.com	Email: PSOVEREIGN@BEUSGILBERT.COM

Contractor/Professional License # _____

When complete: ☐ Call for Pick up number: _____ or Mail to: ☒ Applicant ☐ Owner

I certify that water and access for Fire Protection will be provided as specified in the Fire District's requirements.

SIGNATURE OF OWNER/APPLICANT _____

Section II

Fire flow shall not be less than _____ **GPM @ 20 P.S.I.** **Fire Prevention (Initials)** _____

(WATER SUPPLY TO BE FILLED OUT BY WATER PURVEYOR)

Static Head at Fire Hydrant: 98 System is Designed for Normal Flow of: 7914.4 GPM @ 20 PSI

Size and Location of Main: 12" Distance from Parcel: _____

Nearest Fire Hydrant Location: WEST END OF FALCON Distance from Parcel: _____

Type: WET BARREL Size: 6" No. of outlets: 1 (4) 1 2½"

Size of Reservoir Serving Fire Hydrant: _____

Other: Request static, full flow, and partial flow data points. Test during peak demand period. Note 1248 reservoir water level.

VCWWD8 (WATER PURVEYOR)	Ryan Cu (SIGNATURE)	3-8-21 (DATE)

☐ Private on-site water system proposed. Separate plan submittal required.

☐ Water Purveyor approves use of private water system in their service area (Purveyor signature required above)

FOR OFFICIAL USE ONLY

Fire District Record #: FNC _____ - _____

STATIC PSI - 98

RESIDUAL - 88

PARTIAL FLOW - TANK LEVEL 18FT

2½"

VENTURA COUNTY FIRE PROTECTION DISTRICT
BUREAU OF FIRE PREVENTION

165 Durley Avenue, Camarillo, CA 93010
Phone: (805) 389-9738 Web: www.fire.countyofventura.org

REQUIREMENTS FOR CONSTRUCTION – APPLICATION

Notice: Approval of this application expires 6 months from date of issuance, unless a building permit for this project has been applied for, in which case this approval expires at the date of building permit expiration.

Section I

Project Address: Falcon St. Near Erringer Rd. Simi Valley 93065 (NUMBER / STREET / CITY / ZIP CODE)

APN: 615-160-455 Tract No.: Tent 5858-A Lot No.: _____ Planning No.: _____

BUILDING DESCRIPTION: Sq. Ft. Proposed: N/A Existing: _____ No. of Stories: _____

Use of Building: SFR & MFR Construction Type: VB

☐ Existing structure has automatic fire sprinklers installed.

☐ Manufactured Home - (see instructions for important note)

Applicant Name: Keith Christiansen	Owner Name: SVJV Partners, LLC
Address: 3649 Nonth St. (STREET)	Address: 701 N. 44th St. (STREET)
Riverside 92501 (CITY / ZIP CODE)	Phone Address: Phoenix AZ 85008 (CITY / ZIP CODE)
Phone: 951-323-4713	Phone: 480-429-3000
Email: keith@ccocivil.com	Email: PSOVEREIGN@BEUSGILBERT.COM

Contractor/Professional License # _____

When complete: ☐ Call for Pick up number: _____ or Mail to: ■ Applicant ☐ Owner

I certify that water and access for Fire Protection will be provided as specified in the Fire District's requirements

SIGNATURE OF OWNER/APPLICANT _____

Section II

Fire flow shall not be less than _____ **GPM @ 20 P.S.I.** **Fire Prevention (Initials)** _____

(WATER SUPPLY TO BE FILLED OUT BY WATER PURVEYOR)

Static Head at Fire Hydrant: 98 System is Designed for Normal Flow of: 3052.5 GPM @ 20 PSI

Size and Location of Main: 12" Distance from Parcel: _____

Nearest Fire Hydrant Location: WEST END OF FALCON Distance from Parcel: _____

Type: WET BARREL Size: 6" No. of outlets: 1 4" 1 (2½")

Size of Reservoir Serving Fire Hydrant: _____

Other: Request static, full flow, and partial flow data points. Test during peak demand period. Note 1248 reservoir water level.

VCWWD8 (WATER PURVEYOR)	Bryan Cl (SIGNATURE)	3-8-21 (DATE)

☐ Private on-site water system proposed. Separate plan submittal required.

☐ Water Purveyor approves use of private water system in their service area (Purveyor signature required above)

FOR OFFICIAL USE ONLY

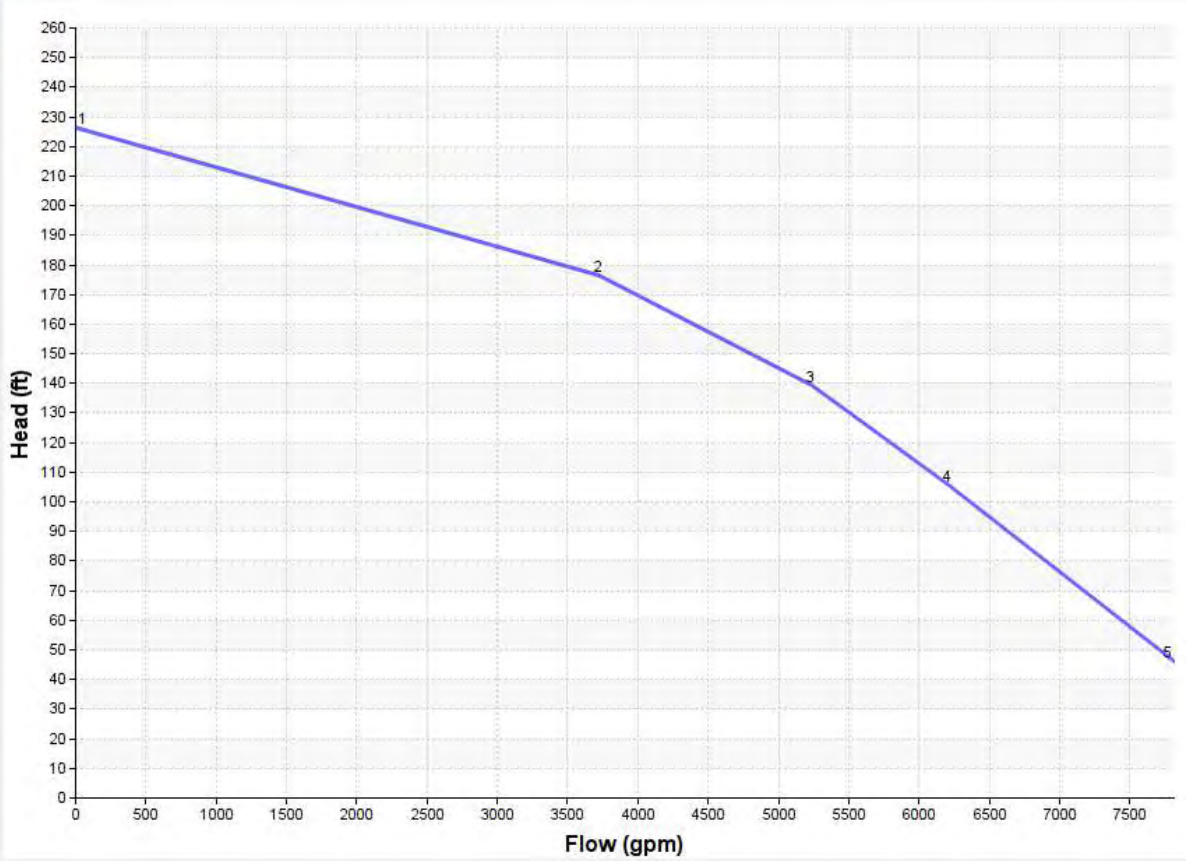
Fire District Record #: FNC _____ - _____

STATIC PSI - 99 RESIDUAL - 94

Appendix 7

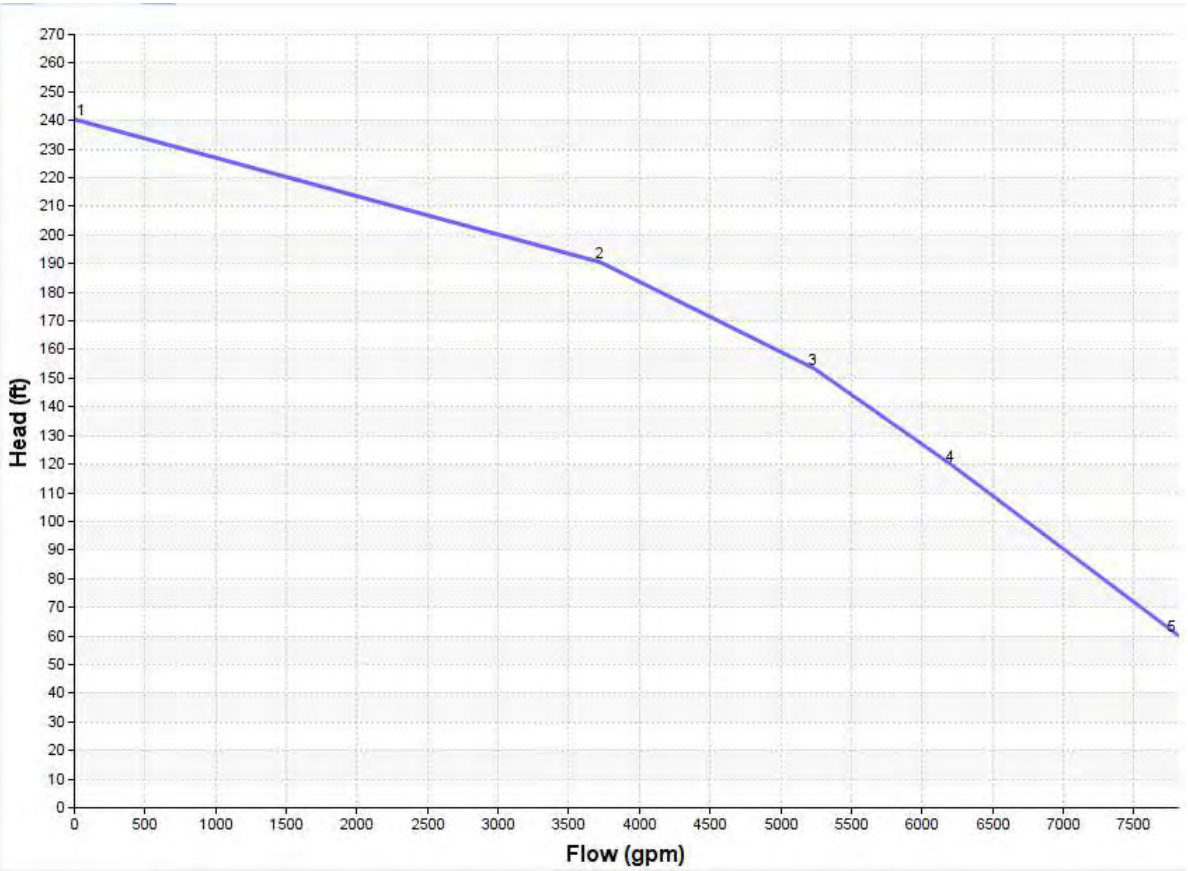
System Curve @ Low Tank Level, 18 ft.:

	Flow (gpm)	Head (ft)
1	0.00	226.38
2	3722.00	176.50
3	5236.00	139.40
4	6210.00	105.70
5	7814.40	46.20



System Curve @ High Tank Level, 32 ft.:

	Flow (gpm)	Head (ft)
1	0.00	240.38
2	3722.00	190.50
3	5236.00	153.40
4	6210.00	119.70
5	7814.40	60.20



Appendix 8

APPENDIX 8

Lot Pressures					
Lot #	Pad Elev.	Low Pressure, PHD (psi)	Low Pressure Mitigation Required?	High Static Pressure , ADD (psi)	High Pressure Mitigation Required?
1	1018.9	91.70	No	98.94	Yes
2	1025	89.06	No	96.30	Yes
3	1028.4	87.59	No	94.83	Yes
4	1031.7	86.16	No	93.40	Yes
5	1034.1	85.12	No	92.36	Yes
6	1037	83.86	No	91.10	Yes
7	1040.4	82.39	No	89.63	Yes
8	1043.5	81.05	No	88.29	Yes
9	1045.9	80.01	No	87.25	Yes
10	1045.2	80.31	No	87.55	Yes
11	1043.4	81.09	No	88.33	Yes
12	1039.9	82.61	No	89.85	Yes
13	1033.9	85.21	No	92.45	Yes
14	1029.8	86.98	No	94.22	Yes
15	1026.4	88.45	No	95.69	Yes
16	1023.4	89.75	No	96.99	Yes
17	1020.2	91.14	No	98.38	Yes
18	1017.2	92.44	No	99.68	Yes
19	1036.1	84.23	No	91.50	Yes
20	1038.2	83.32	No	90.59	Yes
21	1040.4	82.36	No	89.63	Yes
22	1043.1	81.20	No	88.47	Yes
23	1045.8	80.01	No	87.29	Yes
24	1048.3	78.93	No	86.21	Yes
25	1049.5	78.41	No	85.69	Yes
26	1049.9	78.23	No	85.51	Yes
27	1050.4	78.02	No	85.30	Yes
28	1050.4	78.02	No	85.30	Yes
29	1050	78.19	No	85.47	Yes
30	1049.5	78.41	No	85.69	Yes
31	1048.5	78.84	No	86.12	Yes
32	1045.9	79.97	No	87.25	Yes
33	1036.5	84.05	No	91.32	Yes
34	1038.5	83.19	No	90.46	Yes
35	1040.9	82.13	No	89.41	Yes
36	1043.1	81.18	No	88.46	Yes
37	1045.5	80.14	No	87.42	Yes
38	1048.5	78.84	No	86.12	Yes
39	1052.5	77.11	No	84.39	Yes
40	1055.7	75.72	No	83.00	Yes

41	1058	74.73	No	82.01	Yes
42	1060.5	73.64	No	80.92	Yes
43	1063	72.55	No	79.83	No
44	1065.6	71.43	No	78.71	No
45	1068.2	70.30	No	77.58	No
46	1070.7	69.22	No	76.50	No
47	1073.1	68.18	No	75.46	No
48	1075.5	67.14	No	74.42	No
49	1077.8	66.14	No	73.42	No
50	1080	65.18	No	72.46	No
51	1081.5	64.53	No	71.81	No
52	1083	63.88	No	71.16	No
53	1085.3	62.89	No	70.17	No
54	1088.3	61.59	No	68.87	No
55	1092.3	59.86	No	67.14	No
56	1085.4	62.85	No	70.13	No
57	1088	61.72	No	69.00	No
58	1090.9	60.46	No	67.74	No
59	1094	59.11	No	66.39	No
60	1097.5	57.59	No	64.87	No
61	1101.3	55.95	No	63.23	No
62	1106.2	53.83	No	61.11	No
63	1112.3	51.19	No	58.47	No
64	1123.4	46.38	No	53.66	No
65	1126.8	44.91	No	52.19	No
66	1131.4	42.92	No	50.20	No
67	1135	41.35	No	48.63	No
68	1136.6	40.66	No	47.94	No
69	1137.7	40.18	No	47.46	No
70	1082.3	64.19	No	71.47	No
71	1081.4	64.58	No	71.86	No
72	1080.4	65.01	No	72.29	No
73	1077.2	66.40	No	73.68	No
74	1074	67.79	No	75.07	No
75	1070.8	69.17	No	76.45	No
76	1067.7	70.52	No	77.80	No
77	1067.6	70.56	No	77.84	No
78	1070.7	69.22	No	76.50	No
79	1073.8	67.88	No	75.16	No
80	1076.9	66.53	No	73.81	No
81	1080.1	65.14	No	72.42	No
82	1081.3	64.62	No	71.90	No
83	1068.5	70.17	No	77.45	No
84	1068.7	70.09	No	77.37	No
85	1068.7	70.09	No	77.37	No
86	1068.3	70.26	No	77.54	No
87	1067.8	70.47	No	77.75	No

88	1067.4	70.65	No	77.93	No
89	1066.9	70.86	No	78.14	No
90	1066.9	70.87	No	78.15	No
91	1067.4	70.66	No	77.94	No
92	1067.9	70.44	No	77.72	No
93	1068.4	70.22	No	77.50	No
94	1068.7	70.09	No	77.37	No
95	1068.7	70.09	No	77.37	No
96	1068.4	70.22	No	77.50	No
97	1052.5	77.10	No	84.38	Yes
98	1052.8	76.97	No	84.25	Yes
99	1052.6	77.06	No	84.34	Yes
100	1051.9	77.36	No	84.64	Yes
101	1050.8	77.84	No	85.12	Yes
102	1048.8	78.70	No	85.98	Yes
103	1046.5	79.70	No	86.98	Yes
104	1050.5	77.96	No	85.24	Yes
105	1047.8	79.13	No	86.41	Yes
106	1044.8	80.43	No	87.71	Yes
107	1049.7	78.32	No	85.60	Yes
108	1048.1	79.01	No	86.29	Yes
109	1043.4	81.04	No	88.32	Yes
110	1036.5	84.03	No	91.31	Yes
111	1035.5	84.46	No	91.74	Yes
112	1034.5	84.90	No	92.18	Yes
113	1034.5	84.90	No	92.18	Yes
114	1035.3	84.55	No	91.83	Yes
115	1036	84.25	No	91.53	Yes
116	1036.8	83.90	No	91.18	Yes
117	1037.5	83.60	No	90.88	Yes
118	1038.2	83.29	No	90.57	Yes
119	1039	82.95	No	90.23	Yes
120	1039.7	82.65	No	89.93	Yes
121	1039.7	82.65	No	89.93	Yes
122	1055.9	75.63	No	82.91	Yes
123	1053.3	76.75	No	84.03	Yes
124	1050.6	77.92	No	85.20	Yes
125	1047.6	79.22	No	86.50	Yes
126	1040.7	82.21	No	89.49	Yes
127	1038.9	82.99	No	90.27	Yes
128	1036.8	83.90	No	91.18	Yes
129	1034.3	84.98	No	92.26	Yes
130	1032	85.98	No	93.26	Yes
131	1031.4	86.24	No	93.52	Yes
132	1031.8	86.06	No	93.34	Yes
133	996.4	99.65	No	106.94	Yes
134	1000.8	99.48	No	106.77	Yes

135	998	98.96	No	106.25	Yes
136	1001.8	99.04	No	106.33	Yes
137	999.5	98.31	No	105.60	Yes
138	1002.9	98.57	No	105.86	Yes
139	1001.5	97.44	No	104.73	Yes
140	1004	98.09	No	105.38	Yes
141	1002.8	98.61	No	105.90	Yes
142	1005	97.65	No	104.95	Yes
143	1004	98.09	No	105.38	Yes
144	1006	97.22	No	104.52	Yes
145	1006	97.22	No	104.51	Yes
146	1007.5	96.57	No	103.86	Yes
147	996.8	99.48	No	106.77	Yes
148	998.4	98.79	No	106.08	Yes
149	1000	98.09	No	105.38	Yes
150	1001.6	97.40	No	104.69	Yes
151	1003.2	98.44	No	105.73	Yes
152	1005	97.66	No	104.95	Yes
153	1007.6	96.53	No	103.82	Yes
154	1009	95.93	No	103.22	Yes
155	1010	95.49	No	102.78	Yes
156	1010	95.49	No	102.78	Yes
157	1009.3	95.79	No	103.09	Yes
158	1013	94.19	No	101.49	Yes
159	1015	93.32	No	100.62	Yes
160	1000	99.82	No	107.11	Yes

Sewer Availability Letter

APPENDIX K

County Waterworks District No. 8
City of Simi Valley
2929 Tapo Canyon Road, Simi Valley, California 93063 (805) 583-6700

WATER AVAILABILITY LETTER

Date: 04/01/2024

SVJV Partners, LLC
PO Box 701 North 44th Street
Phoenix, AZ 85008

SUBJECT: CONSTRUCTION OF 160-SFR AND 50-MFR
0 east of Falcon St.
Simi Valley, CA 93063
APN: 6150500075

To: SVJV Partners, LLC,

With regard to the availability of water service for the proposed development, the following relates to the availability of the public water system:

1. Project Location: The subject property is located within Zone 1248 AND 1190 of Waterworks District No. 8 (District) service area and is therefore eligible for public water service.

2. Availability of Water Service: Based on the information provided in your Application, the District has determined the following for the subject property and it's proposed use:
   - Average water demand is 154 gallons per minute (gpm)
   - Peak water demand is 344 gpm
   - Water service pressure is 45 pounds per square inch (psi)
   - Fire flow requirement is 1,500 gpm with a residual pressure of 20 psi at the fire hydrant(s) for the property

3. Water Delivery: Potable water is available for the proposed project. Additional on-site and off-site water improvements will need to be installed to provide potable water to the site. It is the Applicant's responsibility to provide the infrastructure from the District's point of connection to the proposed development. The Applicant shall
construct all water facilities in compliance with the Water Design and Construction Standards adopted by the District Board of Directors on July 26, 2021, and subsequent revisions.

Next step for Applicant: Obtain a "Water Will-Serve Letter" from the District and all applicable water service connection fees are to be paid prior to issuance of a Certificate of Occupancy.

If you have any questions, please contact the undersigned at (805) 583-6767.

Sincerely,

Michelle Elorde, P.E.
Principal Engineer, Waterworks District No. 8

C&C Sewer Study Feb 19, 2019

APPENDIX K

North Canyon Ranch (TTM 5658-A)
Preliminary Sewer Study

Prepared for:
The City of Simi Valley Department of Public Works

SLPR, LLC.
710 North 44th Street
Phoenix, Arizona 85008

Prepared by:

Christiansen & Company
3649 Ninth Street
Riverside, CA 92501
(951) 323-4713 Office
(951) 684-4497 Fax

DATE:2/19/2019

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List of Appendicies

Christiansen & Company
3649 NINTH STREET
RIVERSIDE, CALIFORNIA 92501
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EMAIL: KEITH@CCOCIVIL.COM

Section 1 - Introduction and Background

1.1 Existing Site Conditions

The proposed North Canyon Ranch (TTM 5658A) development is located in Simi Valley and is bound by the Simi Valley Town Center to the south and the Big Sky Ranch residential development to the east. The development will consist of single family housing and multi-family housing. Currently the site is undeveloped mountain/hillside that generally slopes from north to south.

1.2 Proposed Project

The North Canyon Ranch (TTM 5658A) development project site consists of approximately 160 acres, 75.5 of which is planned to be developed. The proposed development will consist of single family housing and multi-family housing.

1.3 Scope of Work

This report provides an evaluation of the proposed sanitary sewer system for the North Canyon Ranch (TTM 5658) development, and addresses average and peak loading for the proposed conditions as well as determines the effectiveness of the proposed system and impact to the existing sewer system.

1.4 Previous Studies

The sanitary sewer system downstream of the proposed project was evaluated in the *Sanitary Sewer Master Plan for Simi Valley TownCenter at N. Side of I-118 Between First Street and Erringer Road* by Paller-Roberts Engineering, Inc. (November 2003). Based on this report, the sanitary sewer system downstream of the Town Center accounted for sewer flow of 0.07 cfs (0.21 cfs peak). The report discusses the limitation of the existing sewer in First Street just north of the 118 Freeway. The existing 8-inch line flowing at a slope of 1.1% was determined to have a capacity of 0.63 cfs. Under the Town Center build out phase, the generated flow from the Town Center, the Unocal property (now known as TTM5658), and the existing flow would generate approximately 0.78 cfs and would exceed the capacity of the existing pipe. The recommendation was to add a second sewer line around the critical pipe. Section 2.4 further discusses the downstream impact.

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Section 2 - Approach and Methodology

2.1 Standards and Guidelines

The proposed sanitary sewer system has been analyzed according to the City of Simi Valley Public Works Departments *Manual & Standard Plans for the Design and Construction of Sanitary Sewerage Facilities dated August 28, 2006.*

2.2 Assumptions

The analysis presented in this report assumes an un-pressurized, steady state system with uniform flow and normal depth. A Manning's roughness coefficient of 0.011 was also assumed for the analysis even though the proposed sewer mains will be HDPE/PVC and would correspond to a lower coefficient. For older pipes south of Simi Valley Town Center Way, a roughness coefficient of 0.013 was used. The proposed sanitary sewer system will consist of gravity mains and manholes. Due to the location of the project and the sloped terrain, pumps, wet wells and force mains are unnecessary.

2.3 Methodology and Approach

The average dry weather flow rates within the proposed system were determined according to the designated land use (Table 2.1) and number of equivalent dwelling units (Table 2.2) as outlined in the *Manual & Standard Plans for the Design and Construction of Sanitary Sewerage Facilities.* Calculations were prepared to account for the sewer flow going to First Street and for sewer flow going to Erringer Road. This study was also expanded to include the downstream conditions all the way to the main sewer trunk in Easy Street.

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Sewer Flow to Erringer Road

The generated sewer flow from the proposed easterly single family units will be conveyed to the Erringer Road sewer system. The average dry weather flow rate calculated using designated land use is 0.053 cfs, while the average flow rate calculated using equivalent dwelling units is 0.062 cfs. Since the flow rate based on designated land use is the greatest, it is accepted as the average dry weather flow rate for the project and was used for pipe sizing and analysis. Table 1-1 contains a summary of the results for each method.

With the average dry weather flow rate established, the dry weather peak flow rate was determined using Standard Drawing SV-40-310. According to said standard, an average dry weather flow rate of **0.059** cfs corresponds to a peak dry weather flow rate of **0.16** cfs (using a peaking factor of 3.0). Appendix A includes a copy of Standard SV 40-310.

TABLE 1-1: DRY WEATHER FLOW RATE

(TRIBUTARY TO ERRINGER ROAD)

Method 1

Land Use	Coefficient (Table 2.1)	Quantity		GPD	Flow (cfs)
Residential	100 gpcd	340 people	1	34000	0.053 cfs
				Peak Flow	**0.159 cfs**

Method 2

Land Use	EDU's (table 2-2)	Quantity	GPD	Flow (cfs)
Residential	1	104	28600	**0.044 cfs**

Note: 1-(20 people/acre)(17.39 acres)=340 people (using res. Lot area)
3- 1 EDU=275 gpd

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Sewer Flow to First Street

The generated sewer flow from the proposed westerly 28 lots and the proposed apartments will be conveyed to the First Street sewer system. The overall average dry weather flow rate calculated using designated land use was 0.068 cfs, while the overall average flow rate calculated using equivalent dwelling units was 0.040 cfs. Since the flow rate based on designated land use was the greatest, it is assumed to be the average dry weather flow rate for this portion of the project. Table 1-2 contains a summary of the results for each method. Using Standard Drawing SV-40-310, an average dry weather flow rate of **0.068** cfs corresponds to a peak dry weather prorated flow rate of approximately **0.224** cfs (using a 3.3 peaking factor).

TABLE 1-2: DRY WEATHER FLOW RATE

(TRIBUTARY TO FIRST STREET)

Method 1

Land Use	Coefficient (Table 2.1)	Quantity	Note	GPD	Flow (cfs)
Residential Multi Family	100 gpcd	100 people	1	10000	0.015 cfs
Residential	100 gpcd	187 people	2	18700	0.053 cfs
				Total	**0.068 cfs**
				Peak Flow	**0.224 cfs**

Method 2

Land Use	EDU's (table 2-2)	Quantity	GPD (3)	Flow (cfs)
Multi Family Residential	0.75	50 units	10312	0.016 cfs
Residential	1	56 sf homes	15400	0.024 cfs
			Total	**0.040 cfs**

Note: 1-(20 people/acre)(5 acres)=100 people
2-(20 people/acre)(9.33 acres)=187 people
3- 1 EDU=275 gpd

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Sewer Flow to Easy Street

The sewer flow from First Street is conveyed to the sewer trunk in Easy Street. The existing lines travel west in Cochran Street then travel southerly across easements until it reaches the trunk in Easy Street. The overall average dry weather flow rate calculated using the designated land use was 0.153 cfs, while the overall average flow rate calculated using equivalent dwelling units was 0.073 cfs. Since the flow rate based on designated land use was the greatest, it is assumed to be the average dry weather flow rate for this portion of the project. Table 1-3 contains a summary of the results for each method. The combined flows from First Street including TTM5658A, the Simi Valley Town Center and the existing flow plus the expected sewer from undeveloped areas along with combine for a total of **0.38** cfs.

The previous report mentioned that 0.07 cfs was measured in a manhole located south of Chambers Lane. This implies that the sewer flow from all the development areas in 2004 was already measured in the 0.07cfs. This report includes the expected sewer from all the undeveloped areas in 2004 as well as present and future conditions.

Map 2 shows the mentioned areas. Table 1-3 shows the mentioned flows along with individual flows specific to Pipes 125 through 128. Using Standard Drawing SV-40-310, an average dry weather flow rate of **0.377** cfs corresponds to a total peak dry weather flow rate of **1.11** cfs (using a peaking factor of 2.95).

TABLE 1-3: DRY WEATHER FLOW RATE

Method 1 (TRIBUTARY TO EASY STREET FROM FIRST STREET)

Land Use	Coefficient (Table 2.1)	Quantity		Flow (cfs)	Cummulative Totals: Easy St.	First St [2] & Easy St Totals	Peak (cfs)	Receiving Pipe
Office / Gen. Commercial	0.006 cfs/acre	6.3 acres		0.038	0.038	0.262	0.79	To Pipe 22
Gen. Commercial	0.006 cfs/acre	0.9 acres		0.005	0.043	0.267	0.80	
Office / Gen. Commercial	0.006 cfs/acre	3.5 acres		**0.021**	0.064	0.288	0.84	To Pipe 125
Office / Gen. Commercial	0.006 cfs/acre	4.8 acres		**0.029**	0.093	0.317	0.92	To Pipe 126
Light Industrial	0.008 cfs/acre	3.6 acres		**0.029**	0.122	0.346	1.04	To Pipe 127
Light Industrial	0.008 cfs/acre	3.9 acres		**0.031**	0.153	0.377	1.11	To Pipe 128
			Total	**0.153**	0.153	0.377	1.11	To P129 &130

Method 2

Land Use	EDU's (Table 2-2)	Quantity [4]	GPD [3&5]	Flow (cfs)	Totals			
Office / Gen. Commercial	0.33 & 0.22 /1,000 SF	137,214 SF	10,996	0.017	0.017	0.24	0.73	To Pipe 22
Gen. Commercial	0.33 & 0.22 /1,000 SF	19,602 SF	3,881	0.006	0.023	0.25	0.74	
Office / Gen. Commercial	0.33 & 0.22 /1,000 SF	76,230 SF	7,307	0.011	0.034	0.26	0.76	To Pipe 125
Office / Gen. Commercial	0.33 & 0.22 /1,000 SF	104,544 SF	9,020	0.014	0.048	0.27	0.80	To Pipe 126
Light Industrial	0.36 /1,000 SF	78,408 SF	7,762	0.012	0.06	0.28	0.84	To Pipe 127
Light Industrial	0.36 /1,000 SF	84, 942 SF	8,409	0.013	0.073	0.30	0.88	To Pipe 128
2- Includes 0.224 from TTM5658A, Ex flow, + Town Cntr			**Total**	**0.073**	0.073	0.30	0.80	To P129 &130

Note: 3- 1 EDU=275 gpd
4- Area (SF) is assumed to be 50% of the site
5- 0.33 EDU per first 10,000 SF, then 0.22 per additional 1,000 SF

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Pipes

Pipe capacities were determined using Manning's equation for uniform flow at normal depth. As mentioned previously, the recommended roughness coefficient of 0.011 was used for the analysis, except for pipes south of Town Center Way where a coefficient of 0.013 was used. All pipes less than 12 inches in diameter were assumed to be "at capacity at 50% of the pipe depth (half full). Tables 2-1 and 2-2 summarize the pipe capacities according to pipe diameter and slope. Pipes 12-inch or greater pipes are deemed at capacity when measured two-thirds full using the peak flow rate.

Finally, the pipe capacities were compared to the dry weather peak flow rate to ensure that the proposed system was sufficient to convey the peak flow rate. Section 2-4 below discussed the findings.

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TABLE 2-1: PIPE CAPACITIES

Pipe No.	Slope (ft/ft)	Pipe Size (in)	Manning's n	Max. Flow[1] (cfs)	Velocity (fps)
SS-1	0.07	8	0.011	1.89	10.83
SS-2	0.06	8	0.011	1.75	10.03
SS-3	0.05	8	0.011	1.60	9.17
SS-4	0.04	8	0.011	1.43	8.19
SS-5	0.04	8	0.011	1.43	8.19
SS-6	0.04	8	0.011	1.43	8.19
SS-7	0.02	8	0.011	1.01	5.79
SS-8	0.07	8	0.011	1.89	10.83
SS-9	0.01	8	0.011	0.71	4.07
SS-10	0.04	8	0.011	1.01	5.79
SS-11	0.04	8	0.011	1.43	8.19
SS-12	0.04	8	0.011	1.43	8.19
SS-13	0.05	8	0.011	1.60	9.17
SS-14	0.006	8	0.011	0.55	3.15
SS-15	0.11	8	0.011	2.37	13.58
SS-16	0.007	8	0.011	0.60	3.44
SS-17	0.04	8	0.011	1.43	8.19
SS-18	0.006	8	0.011	0.55	3.15
SS-19	0.02	8	0.011	1.01	5.79
SS-20	0.02	8	0.011	1.01	5.79
SS-21	0.03	8	0.011	1.24	7.10
SS-22	0.06	8	0.011	1.75	10.03
Offsite in First Street					
19	0.06	8	0.011	1.75	10.03
20	0.0518	8	0.011	1.63	9.34
21	0.0465	8	0.013	1.31	7.51
22[3]	0.0101	8	0.013	0.61	3.50
22	0.01	10	0.011	1.3	4.77
23	0.0421	8	0.013	1.24	7.10
24	0.05	8	0.013	1.35	7.73
Tributary to Easy Street (west of First St)					
125	0.0252	8	0.013	0.96	5.50
126	0.006	10	0.013	0.85	3.12
126[3]	0.006	10	0.011	1.01	3.70
127	0.0081	10	0.013	1	3.67
127[3]	0.0081	10	0.011	1.17	4.29
128	0.013	10	0.013	1.25	4.58
129	0.0278	8	0.013	1.01	5.79
129[3]	0.0278	10	0.011	2.16	7.92
130	0.0195	10	0.013	1.53	5.61
Offsite In Falcon Street					
28	0.006	8	0.011	0.55	3.15
29	0.006	8	0.011	0.55	3.15

Notes

1- Maximum flows calculated at 1/2 full

2- Using Mannings n = per table

3- 10-inch PVC/HDPE replacement

4- Pipes 22, 126, 127 & 129 are critical segments

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TABLE 2-2: PIPE CAPACITIES

Pipe No.	Slope (ft/ft)	12 Inch Pipe [4] Max. Flow[1] (cfs)	12 Inch Pipe [4] Velocity (fps)
Offsite Flow In Erringer Road			
30	0.025	5.16	9.38
31	0.01	3.26	5.93
32	0.044	6.84	12.45
33	0.052	7.44	13.53
34	0.01	3.26	5.93
35	0.0128	3.25	5.91
36	0.010	2.95	5.36

NOTES: 1- Maximum flows calculated at 2/3 full for 12"
2- Using Mannings n = 0.011
3- P35/P36 Using Mannings n = 0.013
4- Using an actual size of 11.19", HDPE

Sewer Layout

The proposed sewer system was designed with the pipes located in the streets. The sewer system generally flows from north to south and then from west to east for the 104 lots within the residential development and east to west for remaining 29 homes of the main residential area, 27 lots in the southwest corner of the development and the townhomes. The proposed system consists of a branching system of 8-inch PVC/HDPE pipes which will either tie into the existing 8-inch sewer located to the west in First Street or will tie at the easterly tract boundary in Falcon Street. Map 2 illustrates the proposed sewer layout and points of connection.

2.4 Downstream Impact on Existing Facilities

Existing Sewer in First Street

According to the Sanitary Sewer Master Plan for the Simi Valley Town Center, the existing flow prior to the Town Center was 2.8 inches deep with an average velocity of 0.58 fps and computed to be an average flow of 0.07 cfs. The Town Center at build-out generated an average of 0.12 cfs while the expected sewer average rate from TTM 5668A was estimated to be 0.07 cfs. A total average flow of 0.26 cfs computed a peak total of 0.78 cfs. If we subtract the estimated Unocal property peak flow rate 0.21 cfs (0.07 cfs avg.) and add the calculated peak flow rate of 0.22 cfs from Table 1-2, we obtain a new peak flow of 0.79 cfs (0.78-

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0.21+0.22). In addition, 0.112 cfs (0.038 cfs avg) from 6.3 ac development noted on Map (Del taco/Office area) were considered in this report providing a peak total of 0.90 cfs.

The Paller-Roberts report identified a critical pipe north of the 118- Freeway to have a maximum capacity of 0.63 cfs with a slope of 0.011 (and using a Manning's "n" value of 0.013). This report found that the critical pipe north of the 118-Fwy and south of Enchanted Way had a slightly lower slope of 0.0101. Using the flatter slope and a Manning's "n" value of 0.013, the actual capacity of the critical sewer segment (Pipe 22) was found to be 0.61 cfs. We concur with the Paller-Roberts report that improvements may be required during the Town Center build-out. Given that the build-out was completed without making these improvements, the southwesterly 29 homes of the main residential area, 27 lots in the southwest corner of the development and the townhomes may be required to make the improvements. If the improvements are warranted, we recommend the existing 8-inch line be replaced with a 10-inch sewer line. A temporary sewer bypass will be required during construction. A 10-inch pipe with a slope of 1.0% calculates to have a capacity of approximately 1.30 cfs. Prior to any design and/or improvements, we recommend that the sewer depth be field measured at the manhole located upstream of the critical pipe to measure a real flow rate. With the exception of Pipe 22 (critical pipe), discussed above, all other proposed and existing pipes in First Street will have ample capacity to convey the existing and proposed peak sewer flows.

Existing Sewer to Easy Street (in Cochran St & Easements)

The study was expanded to include the area west of First Street and south of Cochran Street to analyze the impacts up to the sewer trunk in Easy Street. This study found three critical segments. However, it must be noted that this study was prepared without the benefit of a current sewer flow test at the site to verify the true peak flow rates. It is our professional opinion that such a test may remove or minimize the extent of improvements proposed in this section. Until then, this report must follow the criteria in the *Manual & Standard Plans for the Design and Construction of Sanitary Sewerage Facilities*. The identified critical segments are existing Pipes 126, 127 and 129. Existing Pipes 126 and 127 use 10-inch line, but flow at a slope of 0.6% and 0.81%, with a capacity of 0.85 cfs and 1.00 cfs, respectively. Yet the required capacity is 0.94 cfs and 1.03 cfs, respectively. The solution would be to replace the segments with a new 10-inch

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PVC or HDPE line which will lower Manning's coefficient to 0.011. This will increase the capacity in Pipe 126 to 1.01 cfs and 1.17 cfs in Pipe 127.

Existing Pipe 129 is an 8-inch line flowing at 2.78% and has a capacity of 1.01 cfs. The minimum peak flow was calculated to be 1.12 cfs. This line needs to be replaced with a 10-inch line with a capacity greater than 1.3 cfs, unless field testing during final engineering proves otherwise.

The recommended locations for sewer flow measurements are at manholes located at 1) First Street and Enchanted Way, 2) First Street and Cochran Street and 3) south of Chambers Lane at the rail road.

Existing Sewer Erringer Road

The Erringer Road sewer system consists of 12-inch main sewer pipes with a slope ranging from 1.0% to 6.7%. Sewer from 104 single family homes from the proposed development contribute to the Erringer sewer system and is conveyed through an 8-inch sewer line in Falcon Street. TTM5658A connects to the existing sewer at the easterly boundary in Falcon Street.

The previous study identified a sewer segment south of Cochran Street to be the critical segment. This report concurs with those findings. Pipe segments (P31 and P34) in Erringer Road north and south of Alamo Street were also found to be flowing at a 1% slope. However, they do not carry Town Center generated sewer. Therefore Pipe 36 can be considered the most critical in the Erringer sewer system. The previously mentioned study accounted for an existing peak flow of 1.78 cfs (0.65 avg.) prior to the Town Center development. The Town Center added another 0.82 cfs (0.30 avg) for a combined total of 2.6 cfs peak flow rate (0.95 avg.). The North Canyon Ranch (TTM5658A) development will increase the peak flow rate by 0.16 cfs for a grand total of 2.76 cfs. Previous flows are shown in Appendix B. Table 2-2 shows the capacity of the critical segment (Pipe 36) to be 2.95 cfs. Therefore all existing pipe segments, including Pipe 36, and proposed sewer to Erringer Road have ample capacity to convey the existing and proposed peak sewer flows. Clearly, the downstream facilities will not be adversely impacted. Downstream improvements in Erringer Road are not deemed necessary. However, it is recommended that sewer flow depth at the critical segment be measured during final engineering as a final confirmation. More specifically, the flow measurement should be taken in Erringer Road at the closest manhole south of Cochran Street.

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Section 3 - Results, Conclusions and Recommendations

The generated peak dry weather sewer flow rate will be well below the pipe capacity in the sewer system within the proposed development. The existing sewer system in Erringer Road is adequate and can accommodate the expected sewer rate from the proposed project. The generated peak dry weather sewer flow rate that contributes to the sewer in First Street and Easy Street, after mitigation, will be below the pipe capacity in the existing system. It is important to note that the sewer improvements are not needed until the westerly lots or apartment sites are ready for construction. The easterly single family lots from TTM5658A can be developed with no restrictions or conditions requiring downstream improvements.

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North Canyon Ranch (TTM 5658)
Preliminary Sewer Study

VICINITY MAP

MAP 1

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TENTATIVE TRACT MAP NO. 5658-A
PRELIMINARY SEWER STUDY PLAN
NORTH CANYON RANCH

PROJECT CONTACTS

CIVIL ENGINEER/ PLAN PREPARER

LANDSCAPE ARCHITECT

MAP PREPARATION DATE

ASSESSOR PARCEL NO.

ZONING

GENERAL PLAN DESIGNATION:

LEGAL DESCRIPTION:

VICINITY MAP
NOT TO SCALE

CITY OF SIMI VALLEY

SEWER POINT OF CONNECTION

SEWER POINT OF CONNECTION

SCALE: 1"= 200'

SIMI TOWN CENTER

OFFICE 5.5 AC

TOTAL 6.3AC

G.C 0.8 AC

OFFICE / GEN. COMM 4.8 AC

OFFICE/ GEN. COMM. 3.5 AC

0.9AC GEN. COMMERCIAL

DISTRICT EDUCATION CENTER

LT. INDUSTRIAL 3.6 AC

LT. INDUSTRIAL 3.9 AC

COCHRAN ST

CHAMBERS

EASY ST.

FIRST STREET

FLOWER GLEN ST

SIMI TOWN CENTER WAY

ALAMO STREET

ERRINGER RD.

FALCON STREET

BIG SKY RANCH

STATE ROUTE 118

Ronald Reagan Fwy

Mayfair Park

Meadowood

Park View Elementary School

Cochran St

Mayfair St

Agnew St

Alexander St

Spence St

Ballard St

Graham St

Anderson St

Erringer Rd

MAP 2

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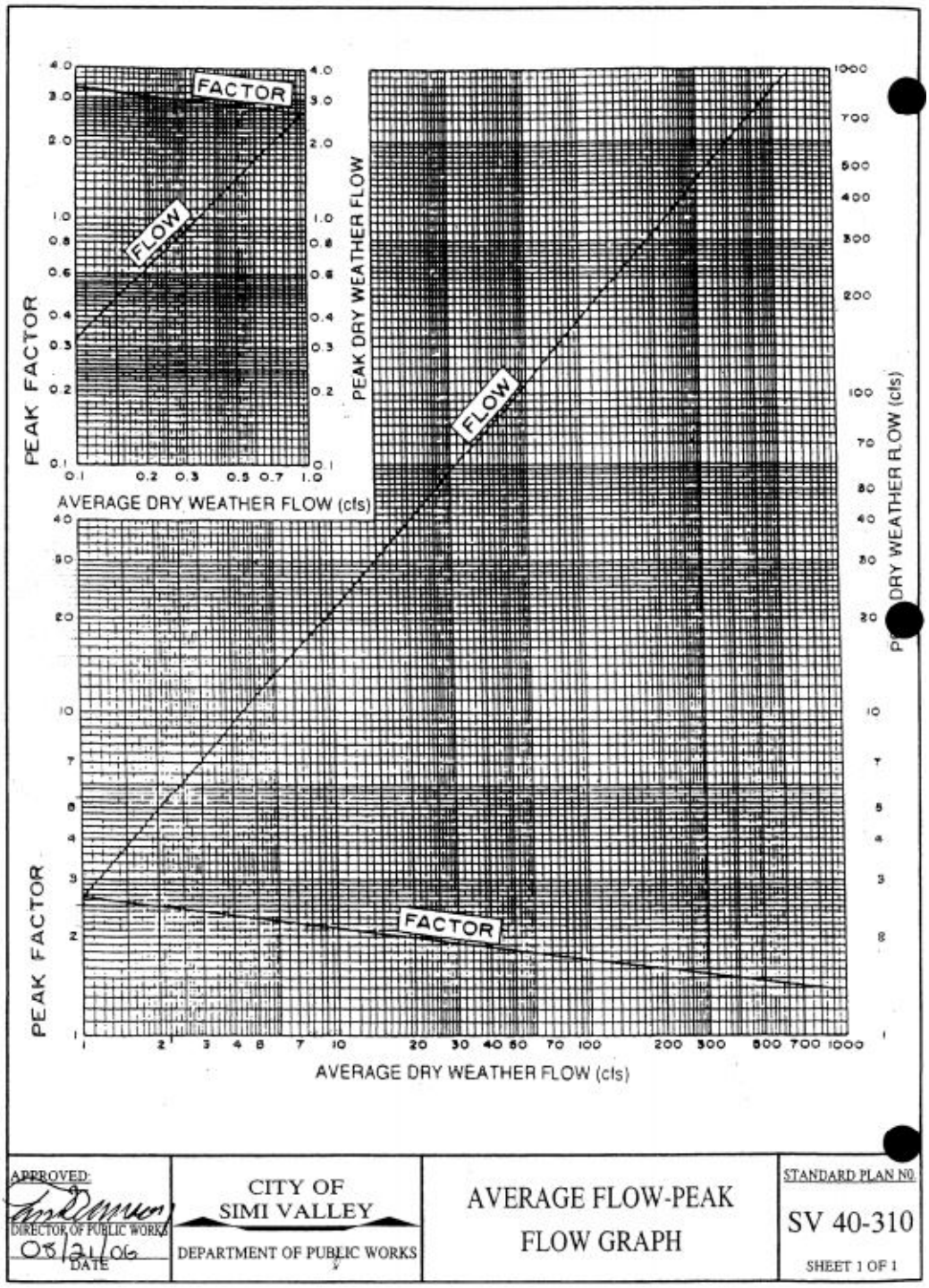
TENTATIVE TRACT NO. 5658-A
PRELIMINARY SEWER STUDY PLAN
NORTH CANYON RANCH

SHEET No. 1 of 1 SHTS.

Appendix A

Average Flow-Peak Flow Graph

City Standard SV 40-310



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Appendix B

Excerpts from the Sanitary Sewer Master Plan for Simi Valley Town Center

prepared by Paller-Roberts Engineering, Inc.

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Existing Sewer System

The site is proposed to be served from two existing sewer lines. An 8 inch diameter sewer pipe exists in First Street, flowing southerly, across the Freeway bridge, and southerly in First Street to a 10 inch pipe in Cochran Street. This then flows westerly and southerly connecting into a 36 inch and 48 inch trunk main in Los Angeles Street which extends to the existing Sewage Treatment Plant. A 12 inch diameter sewer pipe exists in Erringer Road, flowing southerly beneath the Freeway overpass and connecting into the 36 inch and 48 inch trunk main in Los Angeles Street.

Analysis of Existing Sewer Systems

First Street: The City of Simi Valley provided flow data at a manhole in the existing 10 inch sewer line. The manhole is located just south of Chambers Lane. The average flow measured approximately 2.8 inches deep with an average velocity of approximately 0.68 fps (see enclosed data). This computes to an average flow of 0.07 cfs. (see enclosed calculation) Note that this flow includes areas beyond our point of connection which would reduce the flows somewhat. For purposes of this report we will ignore that fact.

Computed pipe capacities at pipe segments at critical locations such as the Freeway bridge or flatter slopes are indicated in the enclosed calculations. The minimum capacity of 0.63 cfs occurs at a segment of pipe located just north of the Freeway bridge. (See Exhibit A)

Erringer Road: The City of Simi Valley provided flow and calculations for the 12 inch sewer pipe in Erringer Road, prepared by William Rose and Associates, Inc., dated December 13, 2001. The average existing flows plus the Big Sky project were calculated to be 0.65 cfs per the above data.

Per the above referenced calculations, the critical segment of this system consists of a 12 inch diameter pipe at 1.0% slope. The capacity of this segment at 2/3 full is 2.81 cfs. The segment this project is proposed to connect to is a 12 inch pipe at 1.45% slope which has a capacity of 3.41 cfs. (See Exhibit A)

Proposed Sewer Systems

An 8 inch diameter sewer is proposed to be extended northerly in First Street to serve a portion of the Town and Country District and also the Unocal property to the north of subject site.

Since the available capacity of the existing system in Erringer Road is greater than the First Street system, we propose to connect the majority of the project to the Erringer Road system.

An 8 inch diameter pipe is proposed to extend from the existing 8 inch pipe in First Street, easterly in "A" Street, to the main driveway into the Town and Country District. This system would only provide service to the Town and Country District. The remainder of the site would be served by a system of 8 inch and 10 inch diameter pipes extending westerly in "A" and "B" Streets from the existing 12 inch pipe in Erringer Road. (see enclosed plan)

Projected Sewage Loads

See the attached Estimated Sewage Flow calculations. The calculations are separated into "Maximum Project" and "Proposed Project" flows based on the different building areas. Note

the approved EIR included larger building areas than the currently proposed project. We also included the future expansion of the Mall in the "Proposed Project" calculations.

The flows to Erringer have very little differences. We therefore propose to use the larger flows for design purposes. The flows to First Street vary from 0.78 cfs (Maximum) to 0.56 cfs (Proposed). The critical pipe segment in First Street has a capacity of 0.63 cfs. We propose to use the larger flows for design purposes. Initially these smaller flows would apply and should the buildings contained in the Town and Country District be increased in size at a later date, an additional sewer pipe can be extended around the critical pipe segment at that time or the 8 inch pipe could be allowed to flow slightly greater than ½ full. (57% or 4.6 inches deep)

Summary of Project Flows

		Avg. Flow	Peak Flow
First Street		0.12 cfs	0.38 cfs
Erringer Road		0.30 cfs	0.89 cfs
	Total	0.42 cfs	1.27 cfs

Summary of Total Flows
(Includes existing and proposed)

	Avg. Flow	Peak Flow
First Street	0.26 cfs	0.78 cfs
Erringer Road	0.95 cfs	2.60 cfs

Analysis of Impact on Existing System

First Street - As discussed above, the segment of 8 inch piping with the flattest slope (1.1%), which occurs just north of the Freeway bridge, has a capacity of 0.63 cfs at ½ full. The total proposed flow to this segment with full buildout is 0.78 cfs. This flow will cause the 8 inch pipe to flow at 4.6 inches deep instead of the 4 inch depth per City criteria. Please note that this only occurs when the project is expanded beyond the current proposal. Also note that the existing flows provided were taken downstream of this segment and contain flows which do not exist at this upstream location.

Erringer Road - As discussed above, the segment of 12 inch piping with the flattest slope (1%) has a capacity of 2.81 cfs. The total proposed flow to this segment with full buildout is 2.6 cfs. The existing piping system therefore has the capacity to accommodate these flows.

Conclusion

The existing sanitary sewer piping systems in First Street and Erringer Road have sufficient capacity to handle the anticipated flows from this project as well as the Big Sky and Unocal residential projects located north of the Simi Valley Town Center site. Flows from this project have been adjusted to take advantage of the excess capacities that exist in the respective systems, as discussed above.

EXHIBIT A

SIMI VALLEY TOWN CENTER

11/20/2003

EXISTING SEWAGE FLOW @ FIRST STREET

Flow data provided by City at the Manhole south of Chambers Lane on the 10" diameter sewer main:

Average Depth = 2.8"
Average Velocity = 0.58 fps

Average Q = Avg. Depth X Avg. Velocity = 0.23 ft. X 0.58 fps = 0.07 cfs
(See attached Calculation for additional data)

CAPACITIES OF EXISTING 8" PIPE IN FIRST STREET (Critical Pipe Segments)

At bridge (4.2% slope @ 1/2 full): (See attached SS Pipe Flow Tabulation) = 1.22 cfs

North of bridge (1.1% slope @1/2 full): (See attached SS Pipe Flow Tabulation) = 0.63 cfs

In Cochran Street west of First (2.3% slope @ 1/2 full): (See attached SS Pipe Flow Tabulation) = 0.91 cfs

EXISTING SEWAGE FLOW @ ERRINGER ROAD

Calculation prepared by William Rose & Associates, dated 12/13/2001, provided by City, indicates the anticipated average flows in the 12 inch sewer line to be 0.65 cfs including the Big Sky project.

CAPACITIES OF EXISTING 12 INCH PIPE IN ERRINGER ROAD (Critical Pipe Segment)

South of Cochran Street (1.0% slope @ 2/3 full): (See attached SS Pipe Flow Tabulation) = 2.81 cfs

SIMI VALLEY TOWN CENTER

ESTIMATED SEWAGE FLOWS
(First Street)

11/20/2003

GENERATION RATES:

USE	GALLONS PER DAY
Retail	100 Gal./ 1,000 sf
Hotel	150 Gal./ room
Offices	150 Gal./ 1,000 sf
Multi-Family Residential	75% of SFE (275 Gal.) = 206 Gal./ Unit
Restaurant	715 Gal./ 42 seats (assume 100 sf/ seat) = 170 Gal./ 1,000 sf

ESTIMATED FLOWS (Includes full buildout per EIR - Maximum Project)

PROJECT:

USE	RATE	QUANTITY	AVG. GPD
Home Improvement	100 Gal./ 1,000 sf	117	11,700
Hotel	150 Gal./ room	140	21,000
Retail	100 Gal./ 1,000 sf	107	10,700
Restaurant	170 Gal./ 1,000 sf	18	3,060
Retail/Office	150 Gal./ 1,000 sf	203	30,450
		Total	76,910

Use 77,000 gpd = 0.12 cfs

UNOCAL SITE:

Per Specific Plan 165 single family residential units are proposed at 275 gpd each = 45,375 GPD = 0.07 CFS

SUMMARY

			Peak
EXISTING	0.07 cfs	26.9%	0.21 cfs
UNOCAL	0.07 cfs	26.9%	0.21 cfs
PROJECT	0.12 cfs	46.2%	0.36 cfs
Total	0.26 cfs Average		0.78 cfs

Peak Flow per Plate 2 = 0.78 cfs

SIMI VALLEY TOWN CENTER

ESTIMATED SEWAGE FLOWS
(Erringer Road)

11/20/2003

GENERATION RATES:

USE	GALLONS PER DAY
Retail	100 Gal./ 1,000 sf
Hotel	150 Gal./ room
Offices	150 Gal./ 1,000 sf
Multi-Family Residential	75% of SFE (275 Gal.) = 206 Gal./ Unit
Restaurant	715 Gal./ 42 seats (assume 100 sf/ seat) = 170 Gal./ 1,000 sf

ESTIMATED FLOWS (Includes full buildout per EIR - Maximum Project)

PROJECT:

USE	RATE	QUANTITY	AVG. GPD
Residential	206 Gal./ Unit	500	103,000
Retail	100 Gal./ 1,000 sf	800	80,000
Restaurant	170 Gal./ 1,000 sf	40	6,800
Retail/Office	150 Gal./ 1,000 sf	45	6,750
		Total	196,550

Use 197,000 gpd = 0.30 cfs

EXISTING FLOWS:

Per calculations prepared by William Rose & Associates, dated December 13, 2001, existing average flow = 0.65 cfs including the Big Sky project.

SUMMARY

Peak

EXISTING	0.65 cfs	68.4%	or 1.78 cfs
PROJECT	0.30 cfs	31.6%	0.82 cfs
Total	0.95 cfs Average		2.6 cfs

Tributary to P31 & P39

Peak Flow per Plate 2 = 2.6 cfs

SANITARY SEWER PIPE FLOWS

(Manning's Equation)

6/24/2004

	8" Pipe		10" Pipe		12" Pipe	
SLOPE	FLOW	VEL.	FLOW	VEL.	FLOW	VEL.
(ft/ft)	(cfs)	(fps)	(cfs)	(fps)	(cfs)	(fps)
0.0024					1.38	2.46
0.003					1.54	2.75
0.004	0.38	2.18	0.7	2.55	1.78	3.18
0.006	0.46	2.67	0.86	3.12	2.18	3.89
0.008	0.53	3.09	0.99	3.6	2.52	4.5
0.01	0.6	3.45	1.11	4.03	2.81	5.03
0.012	0.65	3.78	1.21	4.41	3.08	5.51
0.014	0.71	4.08	1.31	4.76	3.33	5.95
0.016	0.75	4.37	1.4	5.09	3.56	6.36
0.018	0.8	4.63	1.48	5.4	3.77	6.75
0.02	0.84	4.88	1.56	5.69	3.98	7.11
0.022	0.89	5.12	1.64	5.97	4.17	7.46
0.024	0.92	5.35	1.71	6.24	4.36	7.79
0.026	0.96	5.56	1.78	6.49	4.53	8.11
0.028	1	5.77	1.85	6.74	4.71	8.41
0.03	1.03	5.98	1.92	6.97	4.87	8.71
0.035	1.12	6.46	2.07	7.53	5.26	9.41
0.04	1.19	6.9	2.21	8.05	5.62	10.05
0.045	1.27	7.32	2.35	8.54		
0.05	1.33	7.72	2.47	9		

NOTES:

1. 8" and 10" pipe flows computed at 1/2 full.
2. 12" pipe flows computed at 2/3 full.
3. n = .013
4. HDPE - DR17 piping is manufactured to dimensions slightly less than the diameters of DIP and PVC pipe which is allowed by City standards. The following sizes are from the HDPE catalog:

Nominal Size	Actual Size
8"	7.57"
10"	9.435"
12"	11.190"

Using these values, HDPE - DR17 pipe has a capacity of approximately 90% of the above values.

APPENDIX K

C&C Sewer Plan Map
Jan 5, 2023

TENTATIVE TRACT MAP NO. 5658-A
MASTER SEWAGE DISPOSAL PLAN
NORTH CANYON RANCH

PROJECT CONTACTS

SVJV PARTNERS, LLC
701 N. 44TH STREET
PHOENIX, CA 85008
CONTACT: PATRICK SOVEREIGN
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CIVIL ENGINEER/ PLAN PREPARER

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5225 CANYON CREST DRIVE, STE. 251
RIVERSIDE, CA 92507
CONTACT: KEITH CHRISTIANSEN- RCE 50083
PH: 951-323-4713
FAX: 951-405-8410
EMAIL: keith@ccocivil.com

LANDSCAPE ARCHITECT

LAND ARQ, INC.
865 S. MILLIKEN AVE., STE E
ONTARIO, CA 91761
CONTACT: FAUSTO REYES
PH: 951-538-8001
EMAIL: FAUSTO@LANDARQ.COM

MAP PREPARATION DATE

DECEMBER 30, 2017

ASSESSOR PARCEL NO.

615-0-160-455

ZONING

EXISTING: OS
PROPOSED: RMOD, (SFR-DETACHED & MF-ATTACHED), OS
SURROUNDING: RCC (SP), RM, RMOD

GENERAL PLAN DESIGNATION:

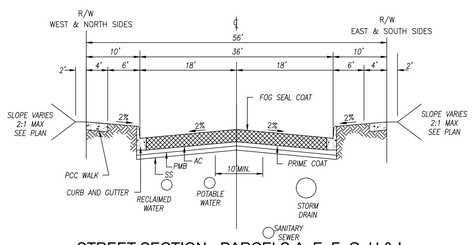
EXISTING: OS-160
PROPOSED: MDR, RMOD
SURROUNDING: URBAN, OPEN SPACE- URBAN RESERVE

LEGAL DESCRIPTION:

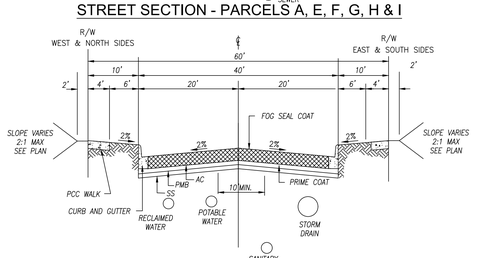
THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE AREA OF SIMI VALLEY, COUNTY OF VENTURA, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A AS SHOWN AND DESIGNATED ON THAT CERTAIN PARCEL MAP WAIVER NO. 1246, RECORDED AUGUST 11, 2004 AS INSTRUMENT NO. 04-0221269 OF OFFICIAL RECORDS AND BEING A PORTION OF SUBDIVISION DELINEATED AS TAPO UPON THAT CERTAIN MAP ENTITLED MAP OF THE LANDS OF RANCHO SIMI VALLEY IN VENTURA AND LOS ANGELES COUNTIES, IN THE COUNTY OF VENTURA, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 3, PAGE 7 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

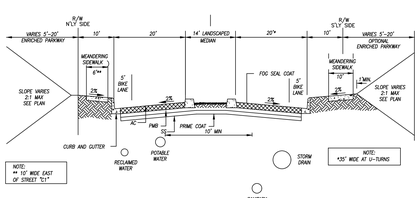
AERIAL PHOTOGRAMMETRY FLOWN: JANUARY 2015 PREPARED BY INLAND AERIAL



STREET SECTION - PARCELS A, E, F, G, H & I



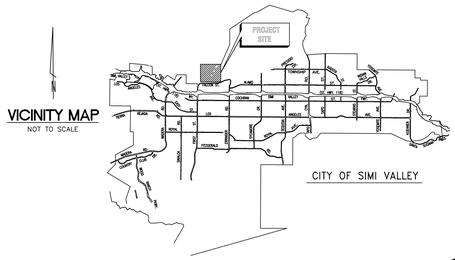
STREET SECTION - PARCELS A, B, C, D & K



STREET SECTION - PARCEL J - FALCON ST.

DESCRIPTION	QUANTITY
INSTALL 8" PVC SDR35 SEWER MAIN (PUBLIC)	10980 LF
CONSTRUCT 48" STD. PRECAST MANHOLE PER CITY OF SIMI VALLEY STD SV40-200. (PUBLIC)	47 EA

INSTALL 6" STD HOUSE CONNECTION LATERAL PER CITY STD. SV40-200 AND CLEANOUT AT PL PER CITY STD SV 40-230.



VICINITY MAP
NOT TO SCALE

DATE PREPARED: 1/5/2023 3:50:00 PM

DATE	BY	MARK	REVISIONS	APPR.	DATE

ENGINEER
DESIGNED BY: KAC DRAWN BY: RH CHECKED BY: KAC

RECOMMENDED FOR APPROVAL
DATE
CHECKED BY
DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER
KEITH A CHRISTIANSEN
No. 50083
Civil
Exp. 06-30-2023
STATE OF CALIFORNIA

APPROVED BY DATE
PREPARED UNDER THE DIRECT SUPERVISION OF: DATE
KEITH A. CHRISTIANSEN - RCE 50083 - EXPIRES 06-30-2023

SCALE: 1" = 100'
DATE: NOVEMEBER 2017

Christiansen & Company
5225 Canyon Crest Drive, Ste. 251
Riverside, Calif. 92507
Ph: 951-323-4713 Fax: 951-405-8410
email: keith@ccocivil.com

BENCHMARK
STANDARD VENTURA COUNTY BENCH MARK IN THE CITY OF SIMI VALLEY AT THE INTERSECTION OF COCHRAN STREET AND ERRINGER ROAD. A BRASS DISK SET IN THE CONCRETE, ENCASED IN STANDARD MONUMENT WELL. DISK IS 18 INCHES BELOW SURFACE ELEVATION: 892.745

IN THE CITY OF SIMI VALLEY, STATE OF CALIFORNIA

TENTATIVE TRACT NO. 5658-A
MASTER SEWAGE DISPOSAL PLAN
NORTH CANYON RANCH

FOR SLPR, LLC
JOB No.

SHEET No. 1 OF 1 SHTS.
FILE No.