Appendix K

Water Availability and Sewer Area Study

SCV WATER

March 11, 2019

City of Santa Clarita
Attention: Hai Nguyen
23920 Valencia Boulevard, Suite 302
Santa Clarita, CA 91355

Re: Water Availability Letter for Sand Canyon Resort, MC#18-021, Assessor's Parcel Number 2840-022-025

Gentlemen:

The above-referenced **Sand Canyon Resort** ("Development") is within the service area of Santa Clarita Valley Water Agency ("Agency"). The Development consists of a 250-room hotel with an additional 70 villas as well as a spa, banquet facilities, restaurants and other amenities. The Agency is prepared to provide safe and reliable water service to the Development subject to the following terms, conditions and reservations:

1. Developer shall submit to Agency a set of construction improvement plans and fire department requirements for the Development. This will enable Agency to the determine distribution system and other water facilities required for the Development in accordance with Agency rules. The Development may require the installation of a reservoir, water mains, services or other appurtenances, or may require improvements to the existing source of supply, which improvements shall be the responsibility of Developer. Fire flow requirements shall be determined by the regulatory agency with applicable jurisdiction (e.g., Los Angeles County Fire Department). The size and scope of any facilities required to deliver adequate fire flow will be determined by the Agency.

2. Developer shall grant Agency all easements and, if necessary, sites for facilities required for water service to the Development, together with a policy of title insurance acceptable to the Agency, guaranteeing Agency's title to and interest in such easements. Developer will be responsible for all fees and charges associated with preparation and recordation of the easements.

3. Pursuant to the requirements of the Agency, Developer shall pay all required fees and charges, including any required deposit amounts, in order to develop planning documents, prepare or process plans and designs, and to complete construction of on-site and off-site improvements required for water service to the Development.

4. Developer shall comply with all of the Agency's rules and regulations governing water service and development in force at the time water service is requested, as those rules may be amended from time to time. Developer acknowledges that all water service

pursuant to this letter and to the Development shall be in accordance with Agency rules and regulations.

5. The provision of water service to the Development is conditioned upon the Developer meeting all requirements of any other governmental entity having jurisdiction over the Development.

6. Developer acknowledges and agrees that this letter is limited and exclusive to the Development and the number of units or lots described above and may not be transferred or assigned to any other person, firm or entity, or for any other purpose without the Agency's written consent.

7. Developer acknowledges and agrees that this letter in no way alters the settlement agreement between the prior owner, Robinson Ranch Golf, LLC and the former Castaic Lake Water Agency agreed upon on July 23, 2003.

8. Agency can provide safe and reliable water service to Development, and fully expects to be able to continue providing safe and reliable water service into the future. In relying upon this letter and Agency's ability to provide water service to the Development, Developer is aware of the restrictions and limitations contained in this letter and the reliance of Agency upon its wells and imported water supplied by the State Water Project to supply the water needed for domestic water purposes, both of which are subject to restriction.

9. At any time prior to connection to the existing water system, and upon a finding by the Board of Directors of the Agency that it is unable to serve the Development for reasons beyond Agency's control, this letter may be revoked by the Agency.

10. Water supply availability is further conditioned expressly upon the Development being located within the boundaries of the Agency, and to the extent necessary, effective completion of the annexation of the Development, or any portion thereof, which is not now within the boundaries of the Agency.

11. By issuing this letter, the Agency does not guarantee any specific quantities or quality of water, pressures or flows with respect to water service provided by the Agency.

12. Developer, for itself and on behalf of its successors, agrees to defend at Developer's expense, any action brought against Agency, its agents, officers or employees because of the issuance of this letter or any approvals or authorizations obtained in connection with the Development, or in the alternative, to relinquish any such approvals or authorizations. Developer shall reimburse Agency for any costs, fees or expenses Agency may incur as a result of any such legal action. Further, Developer agrees that in conducting the defense of such action, the Agency shall be entitled to engage its own attorneys, the entire expense of which shall be paid by Developer.

13. This letter and any representations or assurances made herein, shall expire and be null and void twenty-four (24) months from the date hereof if water service has not been installed to the Development. The Developer and the Development shall not be entitled to any individual water service connections not installed prior to expiration of this letter.

Very truly yours,

Santa Clarita Valley Water Agency

Dirk Marks
Director of Water Resources

Sewer Area Study
for
Sand Canyon Country Club

County of Los Angeles

Hunsaker Project No:
0261-001-001
Revised September 28, 2018

Prepared for:

Sand Canyon Country Club
27734 Sand Canyon Road
Santa Clarita, California 91387

Prepared by:

Hunsaker and Associates, LA Inc.
26074 Avenue Hall, Suite 23
Valencia, CA 91355
Telephone: (661) 294-2211 Fax: (661) 294-9890

Under the supervision of:

Jason H. Fukumitsu RCE 40695 Exp. 3/31/19

TABLE OF CONTENTS

1. INTRODUCTION

The purpose of this report is to provide the summary of onsite sewer flow for the proposed Sand Canyon Resort (VTTM 78248) development. Offsite flows are incorporated with this report to demonstrate routing of sewer system.

The proposed project is located at the northeast corner of Sand Canyon Road and Robinson Ranch Road in the Sand Canyon area in the City of Santa Clarita. The project consists of approximately 75 acres of proposed development and open space areas. Surrounding properties are zoned UR1, NU4, NU5, OS; rural development is present.

2. PROJECT LAND USE

The proposed Sand Canyon Resort in VTTM 78248 includes resort, low density residential, industrial commercial and open space land uses. Only areas that contribute towards sewage generation were included in the sewer area study analysis.

3. METHODOLOGY

The proposed project was divided into 7 subareas that drain into existing 8" VCP per PC 98-13 in the Robinson Ranch Road. And there were 3 subareas that also drain into existing 8" VCP.

Sewer discharge rates were computed as a product of the zoning coefficients and the land use data. Land use data was compiled based on an area calculation of each tributary area for resort, low density residential and industrial commercial areas. The sewer generation factors were based upon the City of Santa Clarity zoning coefficients for private contract sewer projects. Pipe capacity analysis was calculated using Kutter's formula.

A summary table describing the land use data with its corresponding sewage discharge can be found in the Appendix in Table 1 and Table 2.

Land Use	Sewer Generation Coefficient (cfs/ac)
Residential Estate	0.00075
Residential Low Density	0.0015
Visitor Serving/Resort	0.021
Industrial Commercial	0.021

Table 1: Sewage Generation Coefficients

Sub-area	Land Use	Area (ac)	Coeff/AC	Q (cfs)
E1	Residential Low Density	50.5	0.0015	0.076
E2	Visitor Serving/Resort	6.3	0.021	0.132
A1	Visitor Serving/Resort	3.1	0.021	0.065
B1	Residential Low Density	3.8	0.0015	0.006
B2	Residential Low Density	1.6	0.0015	0.002
B3	Residential Low Density	2.3	0.0015	0.003
B4	Residential Low Density	1.5	0.0015	0.002
E3	Industrial Commercial	1.1	0.021	0.023
D1	Residential Estate	1.6	0.00075	0.001
D2	Residential Estate	1.9	0.00075	0.001

Table 2: Sewage Generation Calculation

4. CONCLUSIONS AND RECOMMENDATIONS

The proposed Sand Canyon Resort generates 0.074 cfs addition sewage demand to the existing system. The existing 8" VCP in Robinson Ranch Road and existing 15" VCP in Sand Canyon Road have sufficient capacity to carry the added sewer demand from Sand Canyon Resort VTTM 78248. Therefore no proposed upgrade is needed for these two existing sewer line. Table 3 below shows the minimum capacity by calculating in the flatter section and half full of the existing pipes.

Location	Pipe Size	Pipe Slope (ft/ft)	Flow at 50% depth of flow =100% capacity	Cumulative calculated Q_{TOTAL} (cfs)
Robinson Ranch Road	8	0.004	0.349	0.305
Sand Canyon Road	15	0.0064	4.652	0.848

Table 3: Capacity Vs Cumulative Q comparison table

The cumulative calculated Q_{TOTAL} for the reach with the Robinson Ranch Road is the sum of the existing Q from TR 52004 and proposed project site. The existing Q for the 15" VCP along Sand Canyon Road is calculated by delta Q from Manholes 142 and 141per the sewer area study for TM063022 (see attached map), and the existing Q is 0.774cfs.

Currently, the existing 18" VCP (P9768-R) in Lost Canyon Road between Manholes 142 to 138 is 4.257cfs. And the existing calculated Q at the segment is 6.357 cfs per Sewer Area study for TM063022. Therefore an upgraded is recommended for the proposed development per the calculation.

A flow test is performed to determine the actual flow rate in Manhole 138, and it is 2.61cfs. So the upgrade is not needed for the proposed project and upgraded will be required for future development. A fair share is calculated for the project site to pay for a portion of the upgrade. In the fair share calculation, potential development is included See Table 4.

VTTM 73858 SEWER AREA STUDY -SEWER UPGRADE(FUTURE+ PROPOSED SITE DEVELOPMENTS)							
SEWER PIPE	**SEWER PIPE**	**Existing**		**Proposed Project**	Q_{total} (cfs)	**%Q (Qp/Qtotal)**	**FAIR SHARE COST ($)**
SEGMENT UPGRADE	**SEGMENT UPGRADE**	**Q (cfs)**		Q_p (cfs)			
MH TO MH	**COST ($)**	Sand Canyon	Lost Canyon	TR 78248			
142-138	110,131	0.774	5.82	0.074	6.668	1.11%	1,222
						TOTAL	**1,222**

Table 4: Fair Share Cost Analysis

APPENDICES

A. Sewer Maps

Existing Sewer Area Study

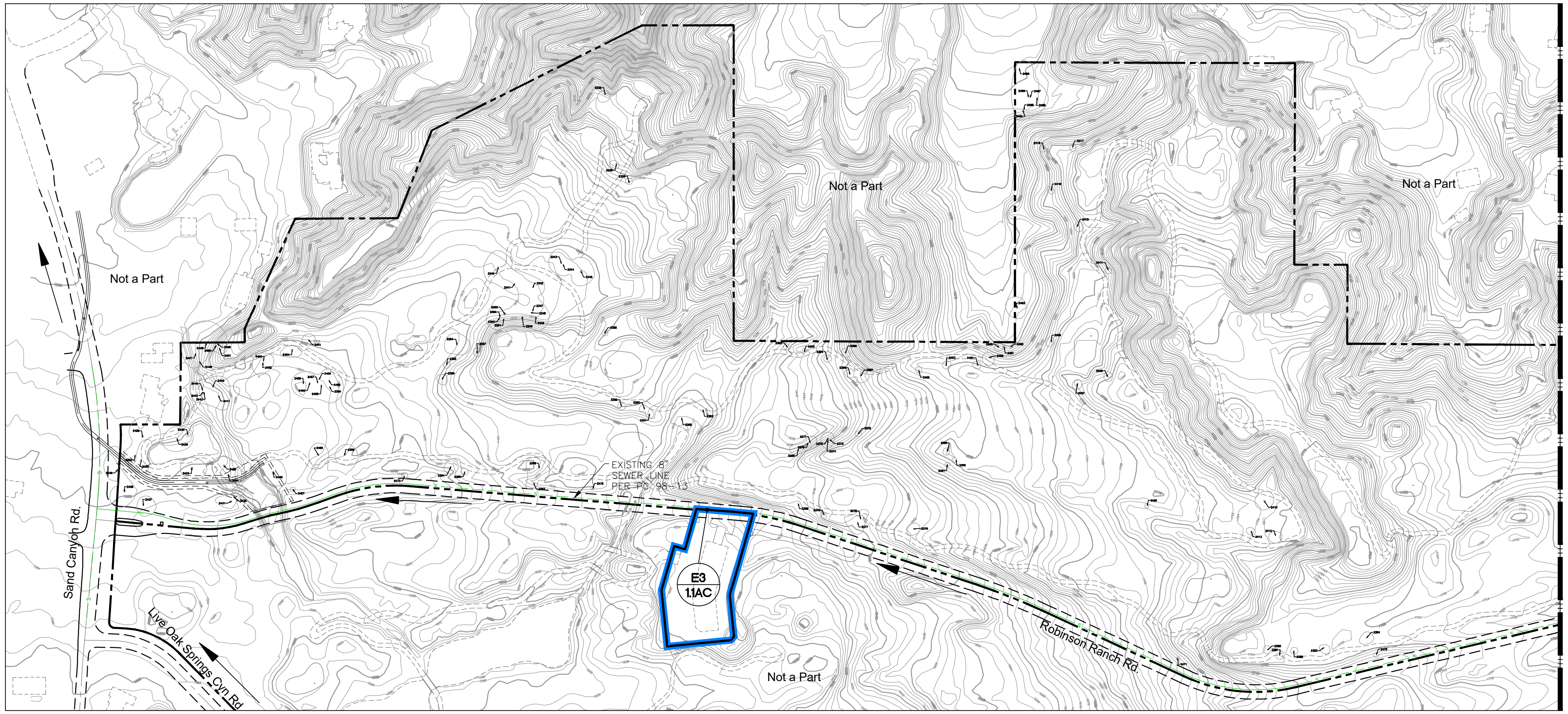


Table 1: Sewage Generation Coefficients

Land Use	Sewer Generation Coefficient (cfs/ac)
Residential Low Density	0.0015
Visitor Serving/Resort	0.021
Industrial Commercial	0.021

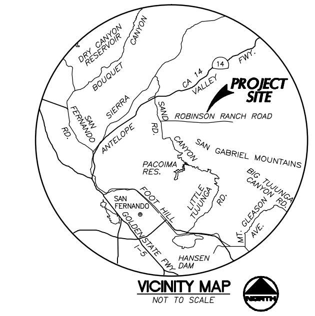
Table 2: Sewage Generation Calculation

Sub-area	Land Use	Area (ac)	Coeff/AC	Q (cfs)
E1	RESIDENTIAL LOW DENSITY	50.5	0.002	0.076
Σ		50.5		0.076
E2	VISITOR SERVING/RESORT	6.3	0.021	0.132
Σ		6.3		0.132
E3	INDUSTRIAL COMERCIAL	1.1	0.021	0.023
Σ		1.1		0.023

Table 3.1 - Sewer Flow Calculation Summary - Existing

To Robinson Ranch Road

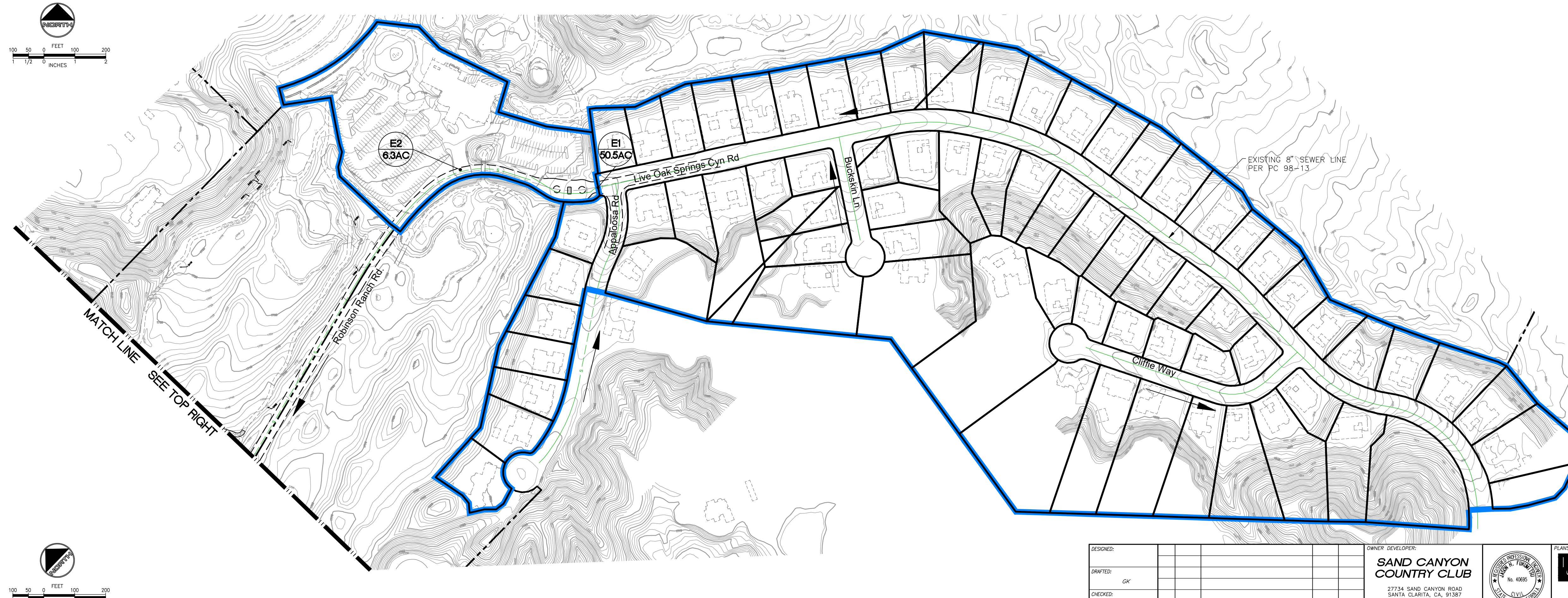
Basin	Street	Segment	Pipe Size (in)	Pipe Slope (ft/ft)	Flow at 50% depth of flow =100% capacity	Area (ac)	Calculated Q (cfs)	Cumulative calculated Q_{TOT} (cfs)
E1	Live Oak Springs Canyon Road	E1-E2	8	0.004	0.349	50.5	0.076	0.076
E2	Robinson Ranch Road	E2-E3	8	0.004	0.349	6.3	0.132	0.208
E3	Robinson Ranch Road	E3-Outlet	8	0.004	0.349	1.1	0.023	0.231



VICINITY MAP
NOT TO SCALE

LEGEND:

- PROPOSED PROJECT BOUNDARY
- EXISTING SEWER STUDY SUBAREA
- EXISTING SEWER LINE
- FLOW PATH
- C1 — SUBAREA DESIGNATION
- 2.9AC — SUBAREA ACREAGE



DESIGNED:	NO.	REVISIONS	DATE	BY
DRAFTED: GK				
CHECKED: WL				

OWNER DEVELOPER:
SAND CANYON COUNTRY CLUB
27734 SAND CANYON ROAD
SANTA CLARITA, CA, 91387
TELEPHONE: (213) 700-6883
OWNER: STEVE KIM

REGISTERED PROFESSIONAL ENGINEER JASON H. FUKUMITSU No. 40695 CIVIL STATE OF CALIFORNIA

PLANS PREPARED BY:
HUNSAKER & ASSOCIATES LOS ANGELES, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
26074 Avenue Hall, Ste 23 ▪ Valencia, CA 91355
PH: (661) 294-2211 ▪ FX: (661) 294-9890
JASON H. FUKUMITSU DATE

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 78248
EXISTING SEWER AREA STUDY

IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

SCALE: PER PLAN
DATE: 04/04/2018
JOB No. 0261-001-001
SHEET 3 OF 3 SHEETS

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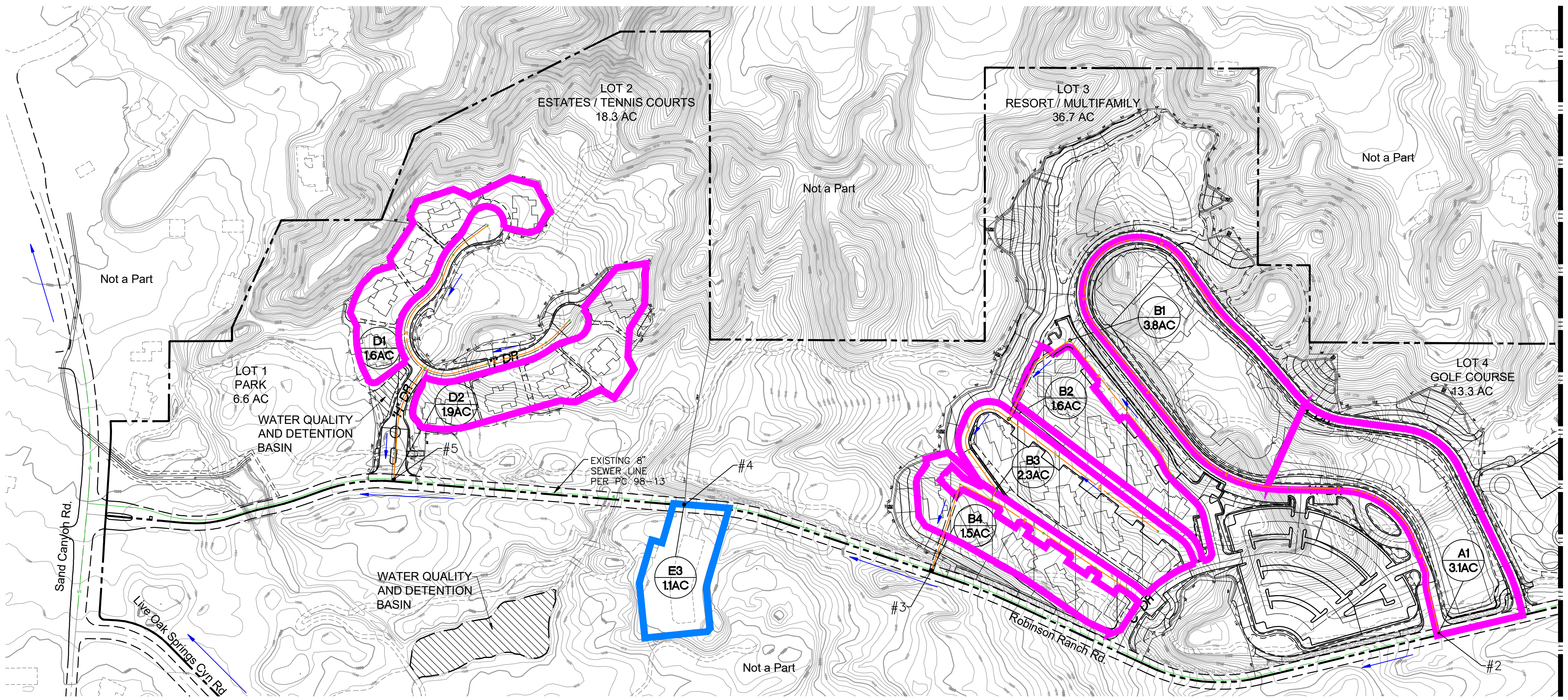
Proposed Sewer Area Study



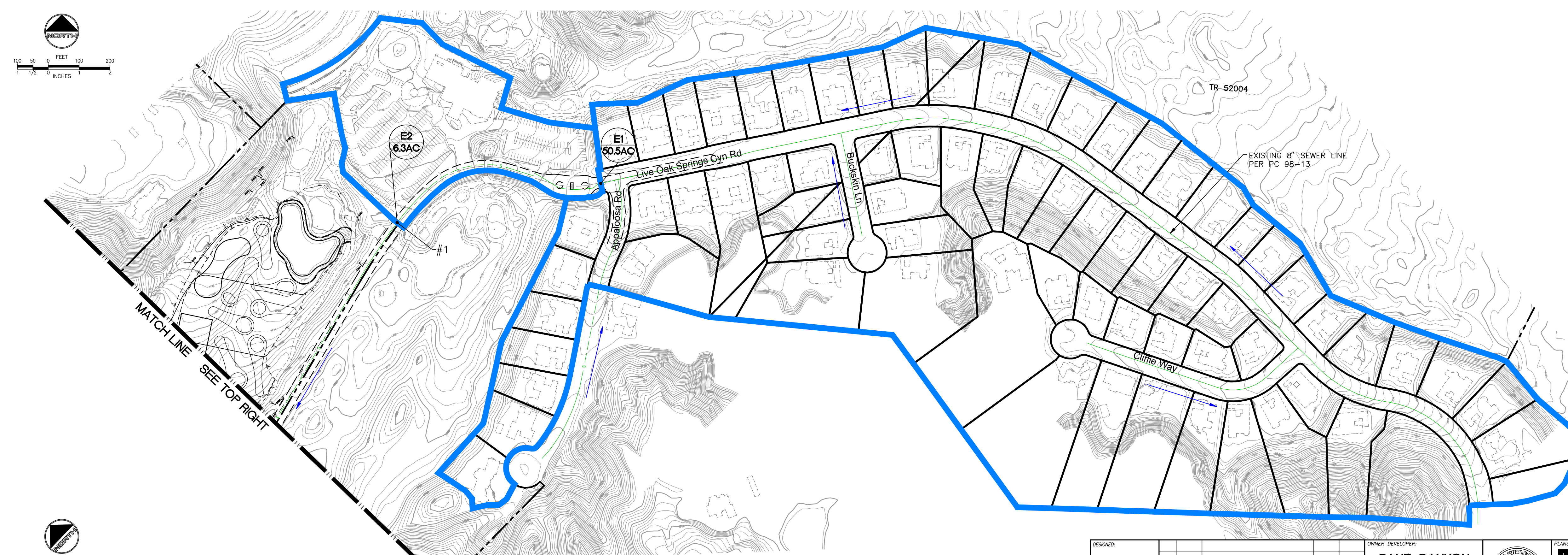


Table 1: Sewage Generation Coefficients

Land Use	Sewer Generation Coefficient (cfs/ac)
Residential Estate	0.00075
Residential Low Density	0.0015
Visitor Serving/Resort	0.021
Industrial Commercial	0.021

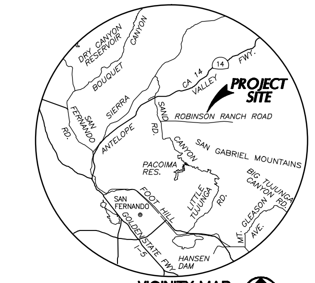
Table 2: Sewage Generation Calculation

Sub-area	Land Use	Area (ac)	Coeff/AC	Q (cfs)
E1	RESIDENTIAL LOW DENSITY	50.5	0.0015	0.076
Σ		50.5		0.076
E2	VISITOR SERVING/RESORT	6.3	0.021	0.132
Σ		6.3		0.132
A1	VISITOR SERVING/RESORT	3.1	0.021	0.065
Σ		3.1		0.065
B1	RESIDENTIAL LOW DENSITY	3.8	0.0015	0.006
Σ		3.8		0.006
B2	RESIDENTIAL LOW DENSITY	1.6	0.0015	0.002
Σ		1.6		0.002
B3	RESIDENTIAL LOW DENSITY	2.3	0.0015	0.003
Σ		2.3		0.003
B4	RESIDENTIAL LOW DENSITY	1.5	0.0015	0.002
Σ		1.5		0.002
E3	INDUSTRIAL COMERCIAL	1.1	0.021	0.023
Σ		1.1		0.023
D1	RESIDENTIAL ESTATE	1.6	0.00075	0.001
Σ		1.6		0.001
D2	RESIDENTIAL ESTATE	1.9	0.00075	0.001
Σ		1.9		0.001

Table 3.2 - Sewer Flow Calculation Summary - Proposed

To Robinson Ranch Road

Basin	Street	Segment	Pipe Size (in)	Pipe Slope (ft/ft)	Flow at 50% depth of flow =100% capacity	Area (ac)	Calculated Q (cfs)	Cumulative calculated Q_{TOT} (cfs)
E1	Live Oak Springs Canyon Road	E1-E2	8	0.004	0.349	50.5	0.076	0.076
E2	Robinson Ranch Road	E2-A1	8	0.004	0.349	6.3	0.132	0.208
		#1 - #2						0.208
A1	Robinson Ranch Road	A1	8	0.004	0.349	3.1	0.055	0.055
		#2 - #3						0.263
B1	Robinson Ranch Road	B1	8	0.004	0.349	3.8	0.004	0.004
B2	Robinson Ranch Road	B1-B2	8	0.004	0.349	1.6	0.002	0.006
B3	Robinson Ranch Road	B2-B3	8	0.004	0.349	2.3	0.002	0.008
B4	Robinson Ranch Road	B3-B4	8	0.004	0.349	1.5	0.003	0.011
		#3 - #4						0.274
E3	Robinson Ranch Road	E3	8	0.004	0.349	1.1	0.023	0.023
D1	Robinson Ranch Road		8	0.004	0.349	1.6	0.004	0.004
D2	Robinson Ranch Road		8	0.004	0.349	1.9	0.004	0.004
		#4 - #5						0.305



VICINITY MAP
NOT TO SCALE

LEGEND:

- PROPOSED PROJECT BOUNDARY
- PROPOSED SEWER STUDY SUBAREA
- PROPOSED SEWER LINE
- FLOW PATH
- EXISTING SEWER STUDY SUBAREA
- EXISTING SEWER LINE
- C1 — SUBAREA DESIGNATION
- 2.9AC — SUBAREA ACREAGE

DESIGNED:					OWNER DEVELOPER: SAND CANYON COUNTRY CLUB, 27734 SAND CANYON ROAD, SANTA CLARITA, CA, 91387, TELEPHONE: (213) 700-6883, OWNER: STEVE KIM	REGISTERED PROFESSIONAL ENGINEER JASON H. FUKUMITSU No. 40695 CIVIL STATE OF CALIFORNIA	PLANS PREPARED BY: HUNSAKER & ASSOCIATES LOS ANGELES, INC. PLANNING ▪ ENGINEERING ▪ SURVEYING 26074 Avenue Hall, Ste 23 ▪ Valencia, CA 91355 PH: (661) 294-2211 ▪ FX: (661) 294-9890	MAJOR LAND DIVISION VESTING TENTATIVE TRACT MAP NO. 78248 PROPOSED SEWER AREA STUDY	SCALE: PER PLAN
DRAFTED: GK									DATE: 04/04/2018
CHECKED: WL	NO.	REVISIONS	DATE	BY			JASON H. FUKUMITSU — DATE	IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA	JOB No. 0261-001-001; SHEET 1 OF 1 SHEETS

Offsite Sewer Area Study

Table 3.3 - Sewer Flow Calculation Summary - Offsite

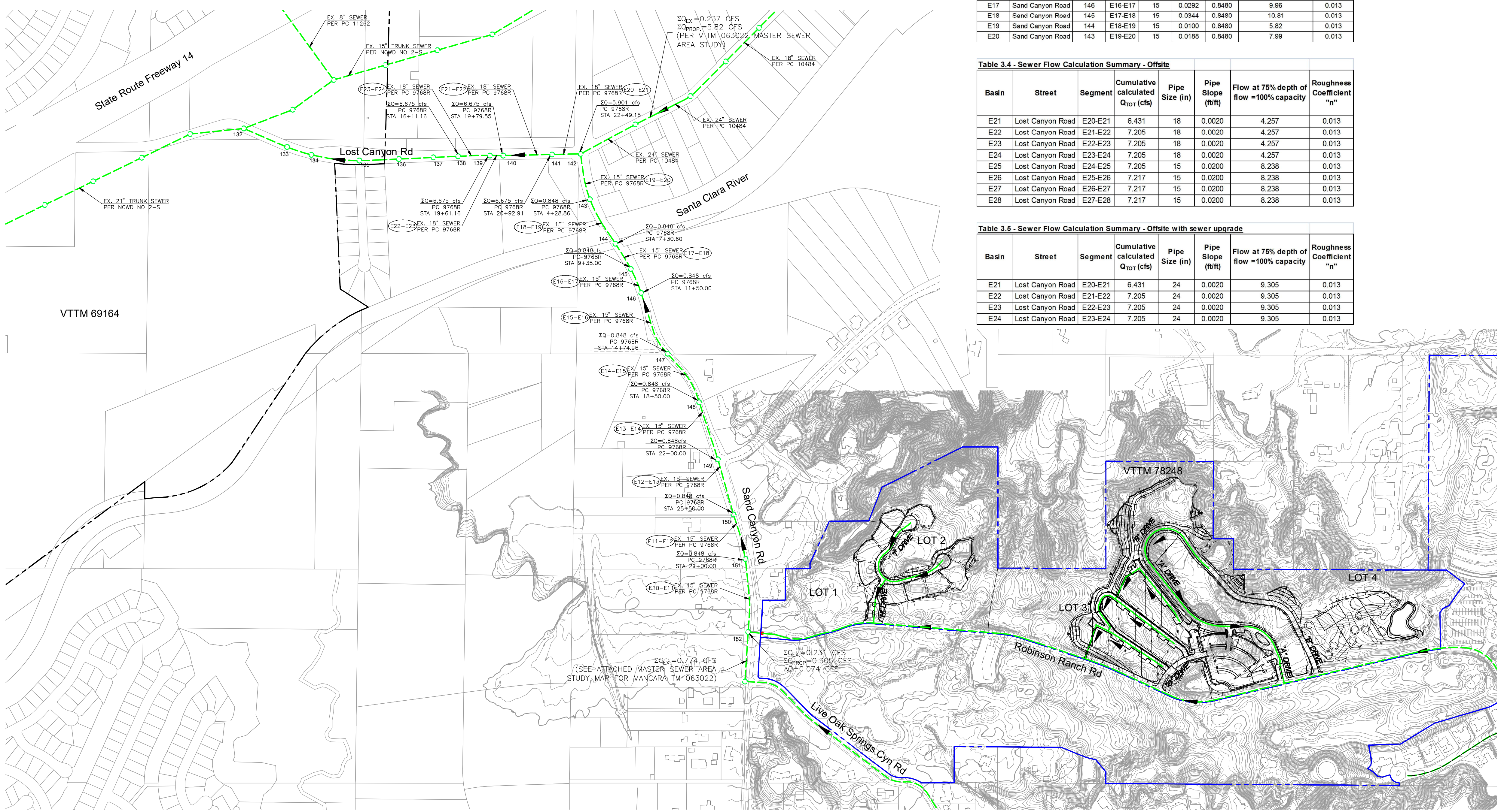
Basin	Street	MH to MH	Segment	Pipe Size (in)	Pipe Slope (ft/ft)	Flowrate (cfs)	Flow at 75% depth of flow =100% capacity	Roughness Coefficient "n"
Existing Q*						0.774		
E11	Sand Canyon Road	152	E10-E11	15	0.0200	0.8480	8.24	0.013
E12	Sand Canyon Road	151	E11-E12	15	0.0156	0.8480	7.27	0.013
E13	Sand Canyon Road	150	E12-E13	15	0.0156	0.8480	7.27	0.013
E14	Sand Canyon Road	149	E13-E14	15	0.0094	0.8480	5.64	0.013
E15	Sand Canyon Road	148	E14-E15	15	0.0064	0.8480	4.65	0.013
E16	Sand Canyon Road	147	E15-E16	15	0.0136	0.8480	6.79	0.013
E17	Sand Canyon Road	146	E16-E17	15	0.0292	0.8480	9.96	0.013
E18	Sand Canyon Road	145	E17-E18	15	0.0344	0.8480	10.81	0.013
E19	Sand Canyon Road	144	E18-E19	15	0.0100	0.8480	5.82	0.013
E20	Sand Canyon Road	143	E19-E20	15	0.0188	0.8480	7.99	0.013

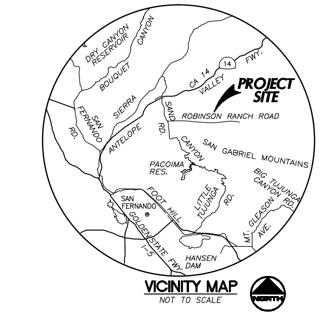
Table 3.4 - Sewer Flow Calculation Summary - Offsite

Basin	Street	Segment	Cumulative calculated Q_{TOT} (cfs)	Pipe Size (in)	Pipe Slope (ft/ft)	Flow at 75% depth of flow =100% capacity	Roughness Coefficient "n"
E21	Lost Canyon Road	E20-E21	6.431	18	0.0020	4.257	0.013
E22	Lost Canyon Road	E21-E22	7.205	18	0.0020	4.257	0.013
E23	Lost Canyon Road	E22-E23	7.205	18	0.0020	4.257	0.013
E24	Lost Canyon Road	E23-E24	7.205	18	0.0020	4.257	0.013
E25	Lost Canyon Road	E24-E25	7.205	15	0.0200	8.238	0.013
E26	Lost Canyon Road	E25-E26	7.217	15	0.0200	8.238	0.013
E27	Lost Canyon Road	E26-E27	7.217	15	0.0200	8.238	0.013
E28	Lost Canyon Road	E27-E28	7.217	15	0.0200	8.238	0.013

Table 3.5 - Sewer Flow Calculation Summary - Offsite with sewer upgrade

Basin	Street	Segment	Cumulative calculated Q_{TOT} (cfs)	Pipe Size (in)	Pipe Slope (ft/ft)	Flow at 75% depth of flow =100% capacity	Roughness Coefficient "n"
E21	Lost Canyon Road	E20-E21	6.431	24	0.0020	9.305	0.013
E22	Lost Canyon Road	E21-E22	7.205	24	0.0020	9.305	0.013
E23	Lost Canyon Road	E22-E23	7.205	24	0.0020	9.305	0.013
E24	Lost Canyon Road	E23-E24	7.205	24	0.0020	9.305	0.013





LEGEND:

- PROPOSED PROJECT BOUNDARY
- TRACT BOUNDARY
- PROPOSED SEWER LINE
- EXISTING SEWER LINE
- PROPOSED LOT LINES
- PROPOSED CURB
- FLOW PATH
- CONCENTRATION POINT

NOTE: SEWER LINES AND MANHOLES ARE FOR GRAPHICAL REPRESENTATION ONLY

DESIGNED: WLL, GK					
DRAFTED: GK					
CHECKED: WLL	NO.		REVISIONS	DATE	BY

OWNER DEVELOPER:
SAND CANYON COUNTRY CLUB
27734 SAND CANYON ROAD
SANTA CLARITA, CA, 91387
TELEPHONE: (213) 700-6883
OWNER: STEVE KIM

PLANS PREPARED BY:
HUNSAKER & ASSOCIATES LOS ANGELES, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
26074 Avenue Hall, Ste 23 ▪ Valencia, CA 91355
PH: (661) 294-2211 ▪ FX: (661) 294-9890
JASON H. FUKUMITSU DATE

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 78248
OFFSITE SEWER AREA STUDY
IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

SCALE: PER PLAN
DATE: 06/13/2018
JOB No. 0261-001-001
SHEET
2 OF 3 SHEETS

B. FlowMaster output

Worksheet for E1-E2

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00400	ft/ft
Normal Depth	0.33	ft
Diameter	0.67	ft

Results

Discharge	0.35	ft^3/s
Flow Area	0.17	ft^2
Wetted Perimeter	1.05	ft
Hydraulic Radius	0.17	ft
Top Width	0.67	ft
Critical Depth	0.27	ft
Percent Full	50.0	%
Critical Slope	0.00814	ft/ft
Velocity	2.00	ft/s
Velocity Head	0.06	ft
Specific Energy	0.40	ft
Froude Number	0.69	
Maximum Discharge	0.76	ft^3/s
Discharge Full	0.70	ft^3/s
Slope Full	0.00104	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	49.99	%
Downstream Velocity	Infinity	ft/s

Worksheet for E1-E2

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.33	ft
Critical Depth	0.27	ft
Channel Slope	0.00400	ft/ft
Critical Slope	0.00814	ft/ft

Worksheet for E2-A1

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00400	ft/ft
Normal Depth	0.33	ft
Diameter	0.67	ft

Results

Discharge	0.35	ft^3/s
Flow Area	0.17	ft^2
Wetted Perimeter	1.05	ft
Hydraulic Radius	0.17	ft
Top Width	0.67	ft
Critical Depth	0.27	ft
Percent Full	50.0	%
Critical Slope	0.00814	ft/ft
Velocity	2.00	ft/s
Velocity Head	0.06	ft
Specific Energy	0.40	ft
Froude Number	0.69	
Maximum Discharge	0.76	ft^3/s
Discharge Full	0.70	ft^3/s
Slope Full	0.00104	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	49.99	%
Downstream Velocity	Infinity	ft/s

Worksheet for E2-A1

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.33	ft
Critical Depth	0.27	ft
Channel Slope	0.00400	ft/ft
Critical Slope	0.00814	ft/ft

Worksheet for E3-D1

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00400	ft/ft
Normal Depth	0.33	ft
Diameter	0.67	ft

Results

Discharge	0.35	ft^3/s
Flow Area	0.17	ft^2
Wetted Perimeter	1.05	ft
Hydraulic Radius	0.17	ft
Top Width	0.67	ft
Critical Depth	0.27	ft
Percent Full	50.0	%
Critical Slope	0.00814	ft/ft
Velocity	2.00	ft/s
Velocity Head	0.06	ft
Specific Energy	0.40	ft
Froude Number	0.69	
Maximum Discharge	0.76	ft^3/s
Discharge Full	0.70	ft^3/s
Slope Full	0.00104	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	49.99	%
Downstream Velocity	Infinity	ft/s

Worksheet for E3-D1

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.33	ft
Critical Depth	0.27	ft
Channel Slope	0.00400	ft/ft
Critical Slope	0.00814	ft/ft

Worksheet for E10-E11_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01880	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	7.99	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.11	ft
Percent Full	75.0	%
Critical Slope	0.01391	ft/ft
Velocity	8.09	ft/s
Velocity Head	1.02	ft
Specific Energy	1.95	ft
Froude Number	1.49	
Maximum Discharge	9.40	ft^3/s
Discharge Full	8.64	ft^3/s
Slope Full	0.01607	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E10-E11_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.11	ft
Channel Slope	0.01880	ft/ft
Critical Slope	0.01391	ft/ft

Worksheet for E11-E12_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.02000	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	8.24	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.13	ft
Percent Full	75.0	%
Critical Slope	0.01466	ft/ft
Velocity	8.34	ft/s
Velocity Head	1.08	ft
Specific Energy	2.02	ft
Froude Number	1.54	
Maximum Discharge	9.69	ft^3/s
Discharge Full	8.91	ft^3/s
Slope Full	0.01710	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E11-E12_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.13	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.01466	ft/ft

Worksheet for E12-E13_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01560	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	7.27	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.08	ft
Percent Full	75.0	%
Critical Slope	0.01199	ft/ft
Velocity	7.37	ft/s
Velocity Head	0.84	ft
Specific Energy	1.78	ft
Froude Number	1.36	
Maximum Discharge	8.56	ft^3/s
Discharge Full	7.87	ft^3/s
Slope Full	0.01336	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E12-E13_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.08	ft
Channel Slope	0.01560	ft/ft
Critical Slope	0.01199	ft/ft

Worksheet for E13-E14_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01560	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	7.27	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.08	ft
Percent Full	75.0	%
Critical Slope	0.01199	ft/ft
Velocity	7.37	ft/s
Velocity Head	0.84	ft
Specific Energy	1.78	ft
Froude Number	1.36	
Maximum Discharge	8.56	ft^3/s
Discharge Full	7.87	ft^3/s
Slope Full	0.01336	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E13-E14_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.08	ft
Channel Slope	0.01560	ft/ft
Critical Slope	0.01199	ft/ft

Worksheet for E14-E15_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00940	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	5.64	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	0.96	ft
Percent Full	75.0	%
Critical Slope	0.00886	ft/ft
Velocity	5.72	ft/s
Velocity Head	0.51	ft
Specific Energy	1.45	ft
Froude Number	1.06	
Maximum Discharge	6.64	ft^3/s
Discharge Full	6.10	ft^3/s
Slope Full	0.00804	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E14-E15_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	0.96	ft
Channel Slope	0.00940	ft/ft
Critical Slope	0.00886	ft/ft

Worksheet for E15-E16_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00640	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	4.65	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	0.87	ft
Percent Full	75.0	%
Critical Slope	0.00762	ft/ft
Velocity	4.71	ft/s
Velocity Head	0.35	ft
Specific Energy	1.28	ft
Froude Number	0.87	
Maximum Discharge	5.47	ft^3/s
Discharge Full	5.03	ft^3/s
Slope Full	0.00547	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E15-E16_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	0.87	ft
Channel Slope	0.00640	ft/ft
Critical Slope	0.00762	ft/ft

Worksheet for E16-E17_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01360	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	6.79	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.05	ft
Percent Full	75.0	%
Critical Slope	0.01090	ft/ft
Velocity	6.88	ft/s
Velocity Head	0.74	ft
Specific Energy	1.67	ft
Froude Number	1.27	
Maximum Discharge	7.99	ft^3/s
Discharge Full	7.34	ft^3/s
Slope Full	0.01164	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E16-E17_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.05	ft
Channel Slope	0.01360	ft/ft
Critical Slope	0.01090	ft/ft

Worksheet for E17-E18_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.02920	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	9.96	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.18	ft
Percent Full	75.0	%
Critical Slope	0.02113	ft/ft
Velocity	10.09	ft/s
Velocity Head	1.58	ft
Specific Energy	2.52	ft
Froude Number	1.86	
Maximum Discharge	11.71	ft^3/s
Discharge Full	10.77	ft^3/s
Slope Full	0.02497	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E17-E18_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.18	ft
Channel Slope	0.02920	ft/ft
Critical Slope	0.02113	ft/ft

Worksheet for E18-E19_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.03440	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	10.81	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.20	ft
Percent Full	75.0	%
Critical Slope	0.02519	ft/ft
Velocity	10.95	ft/s
Velocity Head	1.86	ft
Specific Energy	2.80	ft
Froude Number	2.02	
Maximum Discharge	12.72	ft^3/s
Discharge Full	11.69	ft^3/s
Slope Full	0.02943	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E18-E19_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.20	ft
Channel Slope	0.03440	ft/ft
Critical Slope	0.02519	ft/ft

Worksheet for E19-E20_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01000	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	5.82	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	0.98	ft
Percent Full	75.0	%
Critical Slope	0.00913	ft/ft
Velocity	5.90	ft/s
Velocity Head	0.54	ft
Specific Energy	1.48	ft
Froude Number	1.09	
Maximum Discharge	6.85	ft^3/s
Discharge Full	6.29	ft^3/s
Slope Full	0.00855	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E19-E20_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	0.98	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.00913	ft/ft

Worksheet for E20-E21_RRR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01880	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	7.99	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.11	ft
Percent Full	75.0	%
Critical Slope	0.01391	ft/ft
Velocity	8.09	ft/s
Velocity Head	1.02	ft
Specific Energy	1.95	ft
Froude Number	1.49	
Maximum Discharge	9.40	ft^3/s
Discharge Full	8.64	ft^3/s
Slope Full	0.01607	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E20-E21_RRR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.11	ft
Channel Slope	0.01880	ft/ft
Critical Slope	0.01391	ft/ft

Worksheet for E21-E22_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00200	ft/ft
Normal Depth	1.50	ft
Diameter	2.00	ft

Results

Discharge	9.31	ft^3/s
Flow Area	2.53	ft^2
Wetted Perimeter	4.19	ft
Hydraulic Radius	0.60	ft
Top Width	1.73	ft
Critical Depth	1.09	ft
Percent Full	75.0	%
Critical Slope	0.00502	ft/ft
Velocity	3.68	ft/s
Velocity Head	0.21	ft
Specific Energy	1.71	ft
Froude Number	0.54	
Maximum Discharge	10.96	ft^3/s
Discharge Full	10.11	ft^3/s
Slope Full	0.00170	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E21-E22_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.50	ft
Critical Depth	1.09	ft
Channel Slope	0.00200	ft/ft
Critical Slope	0.00502	ft/ft

Worksheet for E22-E23_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00200	ft/ft
Normal Depth	1.50	ft
Diameter	2.00	ft

Results

Discharge	9.31	ft^3/s
Flow Area	2.53	ft^2
Wetted Perimeter	4.19	ft
Hydraulic Radius	0.60	ft
Top Width	1.73	ft
Critical Depth	1.09	ft
Percent Full	75.0	%
Critical Slope	0.00502	ft/ft
Velocity	3.68	ft/s
Velocity Head	0.21	ft
Specific Energy	1.71	ft
Froude Number	0.54	
Maximum Discharge	10.96	ft^3/s
Discharge Full	10.11	ft^3/s
Slope Full	0.00170	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E22-E23_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.50	ft
Critical Depth	1.09	ft
Channel Slope	0.00200	ft/ft
Critical Slope	0.00502	ft/ft

Worksheet for E23-E24_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00200	ft/ft
Normal Depth	1.50	ft
Diameter	2.00	ft

Results

Discharge	9.31	ft^3/s
Flow Area	2.53	ft^2
Wetted Perimeter	4.19	ft
Hydraulic Radius	0.60	ft
Top Width	1.73	ft
Critical Depth	1.09	ft
Percent Full	75.0	%
Critical Slope	0.00502	ft/ft
Velocity	3.68	ft/s
Velocity Head	0.21	ft
Specific Energy	1.71	ft
Froude Number	0.54	
Maximum Discharge	10.96	ft^3/s
Discharge Full	10.11	ft^3/s
Slope Full	0.00170	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E23-E24_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.50	ft
Critical Depth	1.09	ft
Channel Slope	0.00200	ft/ft
Critical Slope	0.00502	ft/ft

Worksheet for E24-E25_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00200	ft/ft
Normal Depth	1.50	ft
Diameter	2.00	ft

Results

Discharge	9.31	ft^3/s
Flow Area	2.53	ft^2
Wetted Perimeter	4.19	ft
Hydraulic Radius	0.60	ft
Top Width	1.73	ft
Critical Depth	1.09	ft
Percent Full	75.0	%
Critical Slope	0.00502	ft/ft
Velocity	3.68	ft/s
Velocity Head	0.21	ft
Specific Energy	1.71	ft
Froude Number	0.54	
Maximum Discharge	10.96	ft^3/s
Discharge Full	10.11	ft^3/s
Slope Full	0.00170	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E24-E25_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.50	ft
Critical Depth	1.09	ft
Channel Slope	0.00200	ft/ft
Critical Slope	0.00502	ft/ft

Worksheet for E25-E26_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.02000	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	8.24	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.13	ft
Percent Full	75.0	%
Critical Slope	0.01466	ft/ft
Velocity	8.34	ft/s
Velocity Head	1.08	ft
Specific Energy	2.02	ft
Froude Number	1.54	
Maximum Discharge	9.69	ft^3/s
Discharge Full	8.91	ft^3/s
Slope Full	0.01710	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E25-E26_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.13	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.01466	ft/ft

Worksheet for E26-E27_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.02000	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	8.24	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.13	ft
Percent Full	75.0	%
Critical Slope	0.01466	ft/ft
Velocity	8.34	ft/s
Velocity Head	1.08	ft
Specific Energy	2.02	ft
Froude Number	1.54	
Maximum Discharge	9.69	ft^3/s
Discharge Full	8.91	ft^3/s
Slope Full	0.01710	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E26-E27_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.13	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.01466	ft/ft

Worksheet for E27-E28_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.02000	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	8.24	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.13	ft
Percent Full	75.0	%
Critical Slope	0.01466	ft/ft
Velocity	8.34	ft/s
Velocity Head	1.08	ft
Specific Energy	2.02	ft
Froude Number	1.54	
Maximum Discharge	9.69	ft^3/s
Discharge Full	8.91	ft^3/s
Slope Full	0.01710	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E27-E28_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.13	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.01466	ft/ft

Worksheet for E28-E29_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.02000	ft/ft
Normal Depth	0.94	ft
Diameter	1.25	ft

Results

Discharge	8.24	ft^3/s
Flow Area	0.99	ft^2
Wetted Perimeter	2.62	ft
Hydraulic Radius	0.38	ft
Top Width	1.08	ft
Critical Depth	1.13	ft
Percent Full	75.0	%
Critical Slope	0.01466	ft/ft
Velocity	8.34	ft/s
Velocity Head	1.08	ft
Specific Energy	2.02	ft
Froude Number	1.54	
Maximum Discharge	9.69	ft^3/s
Discharge Full	8.91	ft^3/s
Slope Full	0.01710	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E28-E29_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.94	ft
Critical Depth	1.13	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.01466	ft/ft

Worksheet for E29-E30_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01760	ft/ft
Normal Depth	1.13	ft
Diameter	1.50	ft

Results

Discharge	12.71	ft^3/s
Flow Area	1.42	ft^2
Wetted Perimeter	3.14	ft
Hydraulic Radius	0.45	ft
Top Width	1.30	ft
Critical Depth	1.34	ft
Percent Full	75.0	%
Critical Slope	0.01298	ft/ft
Velocity	8.94	ft/s
Velocity Head	1.24	ft
Specific Energy	2.37	ft
Froude Number	1.51	
Maximum Discharge	14.96	ft^3/s
Discharge Full	13.78	ft^3/s
Slope Full	0.01499	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E29-E30_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.13	ft
Critical Depth	1.34	ft
Channel Slope	0.01760	ft/ft
Critical Slope	0.01298	ft/ft

Worksheet for E30-E31_LCR

Project Description

Friction Method	Kutter Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00800	ft/ft
Normal Depth	1.13	ft
Diameter	1.50	ft

Results

Discharge	8.56	ft^3/s
Flow Area	1.42	ft^2
Wetted Perimeter	3.14	ft
Hydraulic Radius	0.45	ft
Top Width	1.30	ft
Critical Depth	1.13	ft
Percent Full	75.0	%
Critical Slope	0.00787	ft/ft
Velocity	6.02	ft/s
Velocity Head	0.56	ft
Specific Energy	1.69	ft
Froude Number	1.01	
Maximum Discharge	10.08	ft^3/s
Discharge Full	9.28	ft^3/s
Slope Full	0.00682	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	75.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for E30-E31_LCR

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.13	ft
Critical Depth	1.13	ft
Channel Slope	0.00800	ft/ft
Critical Slope	0.00787	ft/ft

C. Reference plans/reports

1. LACDPW As built PC 98-13 – TR 52004

PROFILE, ALIGNMENT AND GRADE OF

SANITARY SEWERS

TO BE CONSTRUCTED IN

TRACT NO. 52004

PRIVATE CONTRACT NO. 98-13

INDEX:

7 SHEETS; 14 PAGES

SCALE: VERT.: 1"= 8'
HORIZ.: 1"=40'
OCT., 1996

PREPARED IN THE OFFICES OF
LAND DESIGN CONSULTANTS, INC.
225 So. Lake Ave., Suite 600 Pasadena, California 91101
P.H.(626) 578-7000 FAX(626) 578-7373

BY: [signature]
REG. C.E. NO. 55069 EXP. 6-30-00

REGISTERED PROFESSIONAL ENGINEER — LARRY L MAR — No. 55069 — EXP. 6-30-00 — CIVIL — STATE OF CALIFORNIA

THE FOLLOWING LATEST REVISED STANDARD PLANS ON FILE IN THE OFFICE OF THE CIVIL ENGINEER SHALL APPLY IN THE CONSTRUCTION OF THIS PROJECT:

LEGEND	2000-0
MINIMUM PUBLIC SAFETY REQUIREMENTS	6008-0
BRICK MANHOLE	*203-0
STANDARD MANHOLE STEP	2015-0
BEDDING FOR SEWER PIPE	2021-0
CRADLING AND ENCASEMENT	2023-1
WYE OR TEE SUPPORT	2024-0
ALLOWABLE TRENCH WIDTHS	2027-0
LOCKING MANHOLE FRAME AND COVER	*210-2
NON-REINFORCED PRECAST CONCRETE MANHOLE	*200-2
BREAK INTO EXISTING MANHOLE	*208-1
SPECIAL HOUSE LATERALS	*222-1
EROSION PROTECTION IN STEEP SLOPES	2026-0
ANCHOR BLOCKS	*221-0
JACKING SEWER CASING FOR SEWER PIPE	2028-0
CHIMNEYS	*220-2
RECTANGULAR SHALLOW MANHOLE	**S-7 OR S-16 OR S-32

* REFERS TO A.P.W.A. STD. DRAWING NO.
** REFER TO SANITARY SEWER PROCEDURAL MANUAL DRAWING No.
SANITARY SEWER IN THE VICINITY OF PRESSURE WATER MAINS — 2100-1

CITY OF SANTA CLARITA, CALIFORNIA

ANTHONY J. NISICH
DIRECTOR OF TRANSPORTATION & ENGINEERING SERVICES / CITY ENGINEER

CHARLES W. CARRY
CHIEF ENGINEER
CO. SAN DIST. NO. 26

APPROVED FOR CONSTRUCTION [signature] 12/22/98 (DATE)

APPROVED [signature] 12-23-98 OFFICE ENGINEER

CHECKED [signature] 12-22-98 (DATE)

BENCH MARK
NEWHALL (1993)
LACS BM MON FL 21FT E/O C/L SAND CYN RD. & 0.1MI N/O LIVE OAK SPRINGS CYN RD 3FT N/O PP #533919E MKD (BM 203-3A 1971) 2IN IP 3FT UP 2FT W/O MON
ELEV. 1585.560 B.M. NO. L 3819

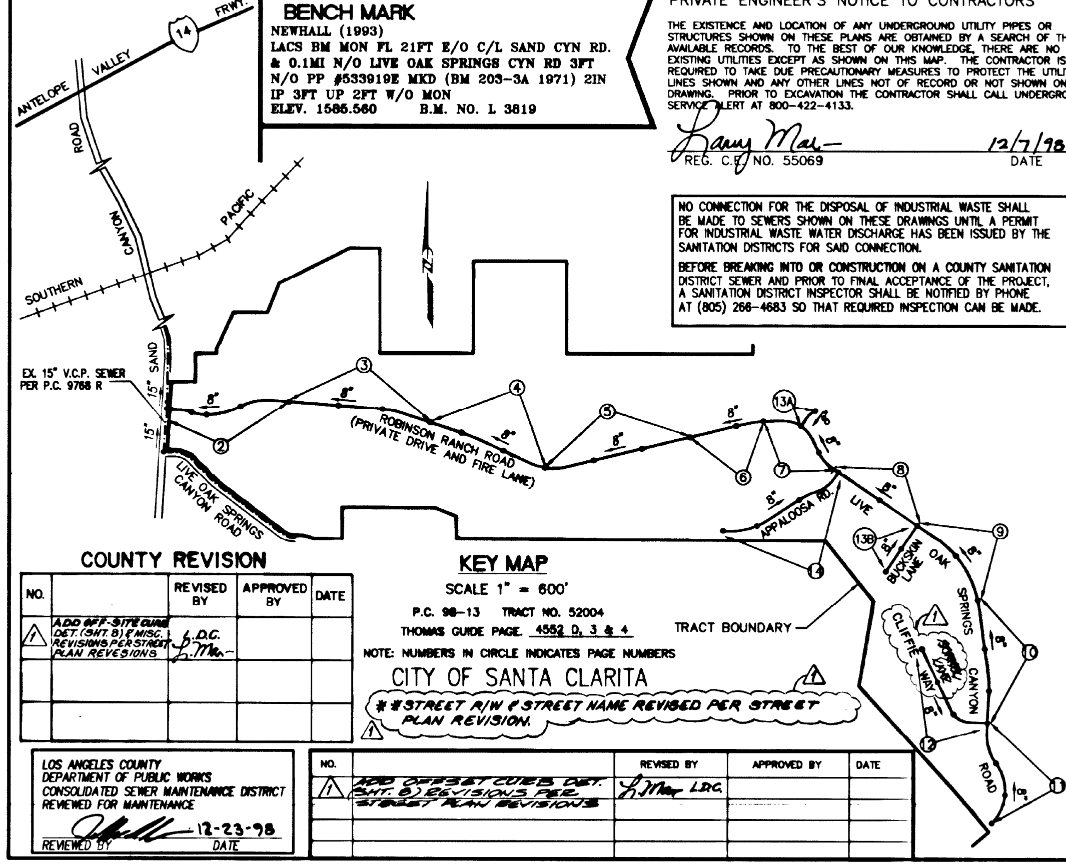
PRIVATE ENGINEER'S NOTICE TO CONTRACTORS

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THIS MAP. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THIS DRAWING. PRIOR TO EXCAVATION THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 800-422-4133.

[signature] 12/7/98
REG. C.E. NO. 55069 DATE

NO CONNECTION FOR THE DISPOSAL OF INDUSTRIAL WASTE SHALL BE MADE TO SEWERS SHOWN ON THESE DRAWINGS UNTIL A PERMIT FOR INDUSTRIAL WASTE WATER DISCHARGE HAS BEEN ISSUED BY THE SANITATION DISTRICTS FOR SAID CONNECTION.

BEFORE BREAKING INTO OR CONSTRUCTION ON A COUNTY SANITATION DISTRICT SEWER AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, A SANITATION DISTRICT INSPECTOR SHALL BE NOTIFIED BY PHONE AT (805) 266-4683 SO THAT REQUIRED INSPECTION CAN BE MADE.



KEY MAP

SCALE 1" = 600'

P.C. 98-13 TRACT NO. 52004

THOMAS GUIDE PAGE. 4552 D, 3 & 4

NOTE: NUMBERS IN CIRCLE INDICATES PAGE NUMBERS

CITY OF SANTA CLARITA

** STREET R/W & STREET NAME REVISED PER STREET PLAN REVISION.

COUNTY REVISION

NO.		REVISED BY	APPROVED BY	DATE
1	ADD OFF-SITE CURB DET. (SHT. 8) & MISC. REVISIONS PER STREET PLAN REVISIONS	L.D.C. [signature]		

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
CONSOLIDATED SEWER MAINTENANCE DISTRICT
REVIEWED FOR MAINTENANCE

[signature] 12-23-98
REVIEWED BY DATE

NO.		REVISED BY	APPROVED BY	DATE
1	ADD OFFSET CURB DET. (SHT. 8) REVISIONS PER STREET PLAN REVISIONS	[signature] LDC		

GENERAL NOTES:

1. ELEVATIONS ARE IN FEET ABOVE U.S.C. & G.S. SEA LEVEL DATUM OF 1929.
2. NO REVISIONS SHALL BE MADE IN THESE PLANS WITHOUT THE APPROVAL OF THE CITY ENGINEER.
3. NO REPRESENTATIVE OF THE CITY OF SANTA CLARITA WILL SURVEY OR LAY OUT ANY PORTION OF THE WORK.
4. GRADES TO WHICH THIS IMPROVEMENT IS TO BE CONSTRUCTED ARE SHOWN ON PLANS AND PROFILES. GRADE POINTS FOR TOP OF CURBS, CENTER LINE OF STREETS, OR CENTERLINE OF ALLEYS ARE SHOWN BY CIRCLES ON PROFILES. AT ALL POINTS BETWEEN DESIGNATED POINTS THE GRADE SHALL BE ESTABLISHED SO AS TO CONFORM TO A STRAIGHT LINE DRAWN BETWEEN SAID DESIGNATED POINTS.
5. THE PRIVATE ENGINEER SHALL FURNISH THE SUBDIVISION SECTION WITH GRADE SHEETS AND STATIONING FOR ALL HOUSE LATERALS AND "Y" OR "T" BRANCHES AND SHALL PROVIDE STAKES FOR THEM AT THEIR PROPER LOCATIONS WITH STATIONING PLAINLY MARKED. ALL HOUSE LATERALS SHALL BE CONSTRUCTED IN A STRAIGHT ALIGNMENT AT RIGHT ANGLES FROM THE MAIN LINE SEWER EXCEPT AS SHOWN ON THE PLANS. HOUSE LATERALS FROM CHIMNEYS SHALL NOT HAVE AN ANGLE OF LESS THAN 45° WITH THE MAIN LINE SEWER. ANY CHANGE IN ALIGNMENT SHALL BE REQUESTED IN WRITING BY THE PRIVATE ENGINEER.
6. THE PRIVATE ENGINEER SHALL FURNISH THE HOUSE LATERAL DEPTH AT THE PROPERTY LINE BELOW THE TOP OF CURB ELEVATION FOR EACH HOUSE LATERAL ON THE GRADE SHEET.
7. BEFORE WORK CAN BE STARTED, THE CONTRACTOR MUST OBTAIN A PERMIT TO EXCAVATE IN CITY STREETS FROM THE CITY OF SANTA CLARITA BUILDING AND SAFETY DIVISION
8. IF WORK IS TO DONE IN A STATE HIGHWAY. A PERMIT MUST BE OBTAINED FROM THE STATE OF CALIFORNIA, DIVISION OF HIGHWAYS, 120 SOUTH SPRING STREET, LOS ANGELES, CALIFORNIA.
9. APPROVAL OF THIS PLAN BY THE CITY OF SANTA CLARITA DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OF THE LOCATION OF OR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITY PIPE, OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THIS NOTE APPLIES TO ALL PAGES.
10. REFER TO SECTION 7.10.4.1 OF THE STANDARD SPECIFICATIONS REGARDING SAFETY ORDERS.
11. PRIOR TO THE ISSUANCE OF THE REQUIRED SEWER CONSTRUCTION PERMIT, THE CONTRACTOR SHALL OBTAIN AND FILE WITH THE CITY COPIES OF A PERMIT TO EXCAVATE IN CITY STREETS FROM THE BUILDING AND SAFETY DIVISION, A PERMIT FOR EXCAVATIONS AND TRENCHES FROM THE STATE OF CALIFORNIA, A DIVISION OF INDUSTRIAL SAFETY AND A CERTIFICATE OF WORKER'S COMPENSATION INSURANCE WITH THE DEPARTMENT OF PUBLIC WORKS, 900 S. FREMONT AVE., ALHAMBRA, CALIF. 91803 - 8TH FLOOR, NAMED AS THE CERTIFICATE HOLDER TO BE NOTIFIED 30 DAYS PRIOR TO CANCELLATION OF POLICY.

CONSTRUCTION NOTES:

1. WORK SHALL BE CONSTRUCTED ACCORDING TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (1996 EDITION) AND L.A. COUNTY DEPARTMENT OF PUBLIC WORKS SPECIAL PROVISIONS FOR THE CONSTRUCTION OF SANITARY SEWERS DATED JULY 31, 1989 AND SHALL BE PROSECUTED ONLY IN THE PRESENCE OF THE CITY
2. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS INSPECTOR BY TELEPHONE, (805) 288-4740, AT LEAST 24 HOURS BEFORE STARTING ANY WORK UNDER THIS CONTRACT.
3. HOUSE LATERALS TO BE CONSTRUCTED WITH INVERTS AT PROPERTY LINE 8 FEET BELOW CURB GRADE EXCEPT AS NOTED.
4. WYE OR TEE BRANCHES MAY BE USED FOR CONNECTIONS TO MAINLINE SEWERS EXCEPT AS NOTED.
5. ALL STRUCTURES SHALL BE EITHER BRICK MANHOLES PER A.P.W.A. STD. PLAN NO. 203-0 OR PRECAST CONCRETE MANHOLES PER L.A.C.D.P.W. STD. PLAN NO. 2001-0. EXCEPT AS NOTED.
6. PROVIDE STAKES ON THE PROPERTY LINE PRODUCED AT RIGHT ANGLES TO THE SEWER LINE AT THE CENTER LINE OF EACH MANHOLE.
7. MANHOLE TOPS IN UNIMPROVED RIGHTS OF WAY TO BE SIX INCHES ABOVE FINISHED GRADE.
8. VITRIFIED CLAY PIPE JOINTS SHALL BE TYPE "D" OR "G" PER STANDARD SPECIFICATIONS SECTION 208-2.
9. IF A POWER POLE IS WITHIN THREE FEET OF THE SEWER, THE SEWER SHALL BE ENCASED PER L.A.C.D.P.W. STD. PLAN NO. 2023-0, CASE II. TWO FEET ON EACH SIDE FROM THE POINT OF INTERFERENCE.
10. IF DURING THE COURSE CONSTRUCTION IT IS DETERMINED THAT THERE IS LESS THAN FOUR FEET OF COVER OVER THE TOP OF A MAIN LINE OR HOUSE LATERAL V.C.P. SEWER WHICH IS NOT INDICATED ON THE PLANS, THE PIPE SHALL BE ENCASED PER L.A.C.D.P.W. STD. PLAN NO. 2023-0, CASE II UNLESS OTHERWISE APPROVED BY THE CITY.
11. ALL JOINTS BETWEEN CAST IRON PIPE AND VITRIFIED CLAY PIPE SHALL BE MADE WITH A RUBBER SLEEVE JOINT. TYPE "C" OR "D". (WITH BUSHING IF NECESSARY) PER STANDARD SPECIFICATIONS. SECTION 208-2.
12. SEWERS TO BE TESTED FOR LEAKAGE PER SECTION 306-1.4 OF THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
13. RESURFACE ALL TRENCHES WITHIN PAVED AREAS TO MEET CITY OR CALIFORNIA STATE HIGHWAY REQUIREMENTS IN ACCORDANCE WITH PERMITS.
14. FULL COMPLIANCE WITH SECTION 306-1.34 OF THE STANDARD SPECIFICATIONS WILL BE REQUIRED FOR BACKFILL IN STREETS. CERTIFICATION OF BACKFILL COMPACTION AND SAND EQUIVALENTS BY A QUALIFIED, REGISTERED TESTING LABORATORY SHALL BE PROVIDED BY THE PERMITTEE PRIOR TO THE ISSUANCE OF A CERTIFICATE OF PARTIAL ACCEPTANCE.
15. SPECIAL BACKFILL IN EASEMENT CONSTRUCTION: (A) BACKFILL TRENCH AND REPLACE OTHER EARTH SO AS TO ACHIEVE THE NATURAL OR FINISHED GRADES AND SLOPES SHOWN ON THE GRADING PLAN APPROVED FOR THIS DEVELOPMENT BY THE LAND DEVELOPMENT DIVISION. (B) ALL BACKFILL AND EARTH REPLACED SHALL BE COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY PER ASTM STD METHOD OF TEST D698.57T AS MODIFIED. ACCEPTABLE CERTIFICATION OF SUCH COMPACTION SHALL BE SUBMITTED TO THE CITY.
16. ALL WYES AND/OR HOUSE LATERALS ARE TO BE LOCATED AT LEAST FIVE FEET APART AND NOT CLOSER THAN FIVE FEET TO ANY MANHOLE.

STORMWATER POLLUTION CONTROL REQUIREMENTS FOR SEWER CONSTRUCTION

A. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON SITE TRANSPORTED FROM THE SITE VIA SHEETFLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.

STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.

FUELS, OILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.

EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.

TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION RAINWATER AND DISPERSAL BY WIND.

SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR THEIR MEANS.

ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.

B. THE FOLLOWING BMPS AS OUTLINED IN, BUT NOT LIMITED TO, THE BEST MANAGEMENT PRACTICE HANDBOOK, CALIFORNIA STORMWATER QUALITY TASK FORCE, SACRAMENTO, CALIFORNIA 1993, OR THE LATEST REVISED EDITION, MAY APPLY DURING CONSTRUCTION (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY COUNTY):

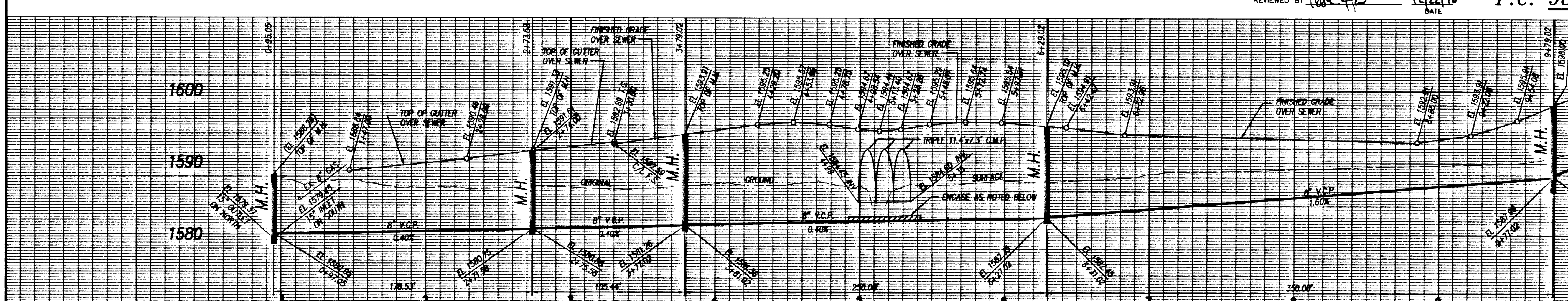
CA001 - DEWATERING OPERATIONS
CA002 - PAVING OPERATIONS
CA003 - STRUCTURE CONSTRUCTION AND PAINTING
CA010 - MATERIAL DELIVERY AND STORAGE
CA020 - SOLID WASTE MANAGEMENT
CA021 - HAZARDOUS WASTE MANAGEMENT
CA023 - CONCRETE WASTE MANAGEMENT
CA024 - SANITARY/SEPTIC WASTE MANAGEMENT
CA030 - VEHICLE AND EQUIPMENT CLEANING
CA031 - VEHICLE AND EQUIPMENT FUELING
CA032 - VEHICLE AND EQUIPMENT MAINTENANCE
ESC01 - SCHEDULING
ESC02 - PRESERVATION OF EXISTING VEGETATION
ESC10 - SEEDING AND PLANTING
ESC11 - MULCHING
ESC20 - GEOTEXTILES AND MATS
ESC21 - DUST CONTROLS
ESC22 - TEMPORARY STREAM CROSSING
ESC23 - CONSTRUCTION ROAD STABILIZATION
ESC24 - STABILIZED CONSTRUCTION ENTRANCE
ESC54 - STORM DRAIN INLET PROTECTION

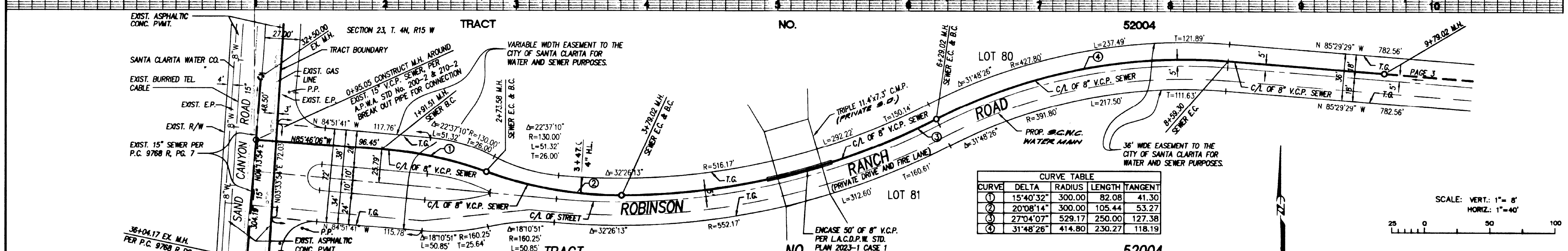
NOTICE TO CONTRACTOR:
SEWER SERVICE MUST BE MAINTAINED AT ALL TIMES.

STORMWATER POLLUTION CONTROL REQUIREMENTS FOR SEWER CONSTRUCTION SEE SHEET NO. 3, PAGE NO. 6

REVIEWED BY [signature] 12/22/98 DATE

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS
SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES
(310) 699-7411 X-2727





CURVE	DELTA	RADIUS	LENGTH	TANGENT
1	15°40'32"	300.00	82.08	41.30
2	20°08'14"	300.00	105.44	53.27
3	27°04'07"	529.17	250.00	127.38
4	31°48'26"	414.80	230.27	118.19

SCALE: VERT.: 1"= 8'
HORIZ.: 1"=40'

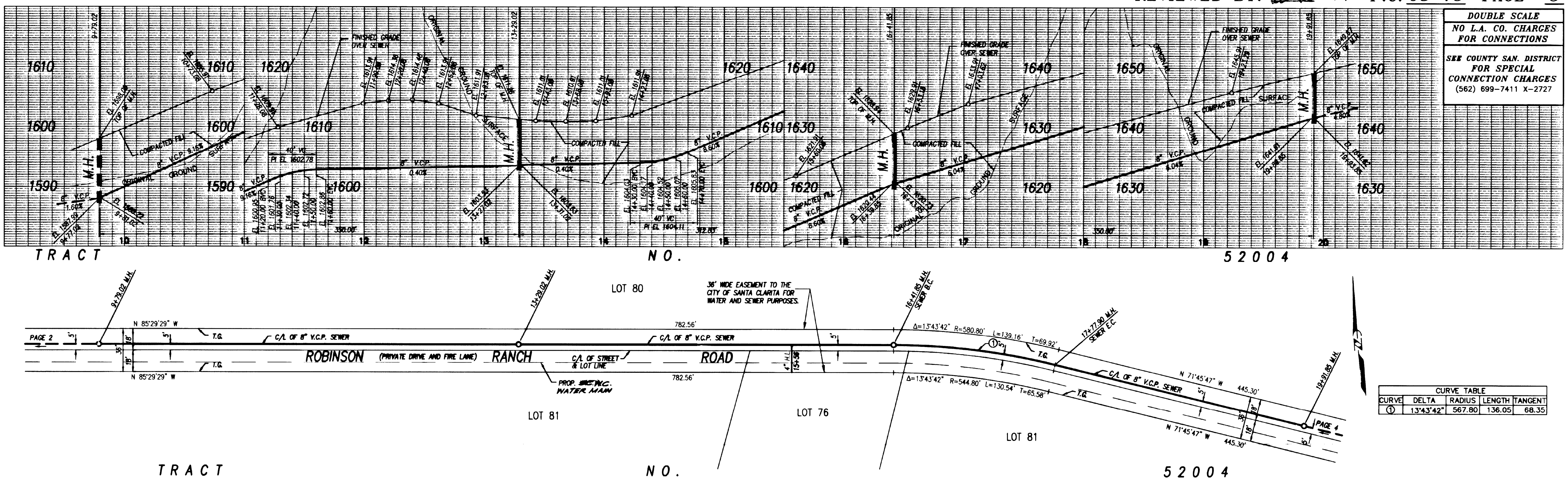
TR. NO. 52004 P.C. 98-13

Sewer PC 98-13
Sheet 1 of 7

00285

REVIEWED BY: [signature] 12/21/98 P.C. 98-13 PAGE 3

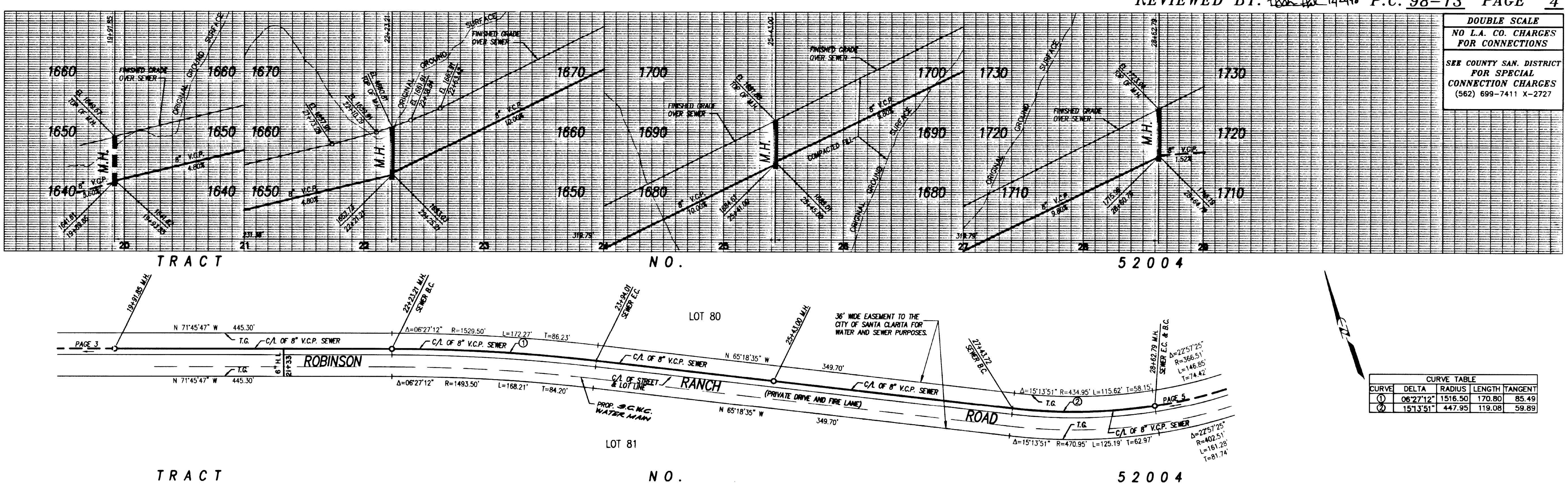
DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS
SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES (562) 699-7411 X-2727



CURVE	DELTA	RADIUS	LENGTH	TANGENT
①	13°43'42"	567.80	136.05	68.35

REVIEWED BY: [signature] 12/21/98 P.C. 98-13 PAGE 4

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS
SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES (562) 699-7411 X-2727

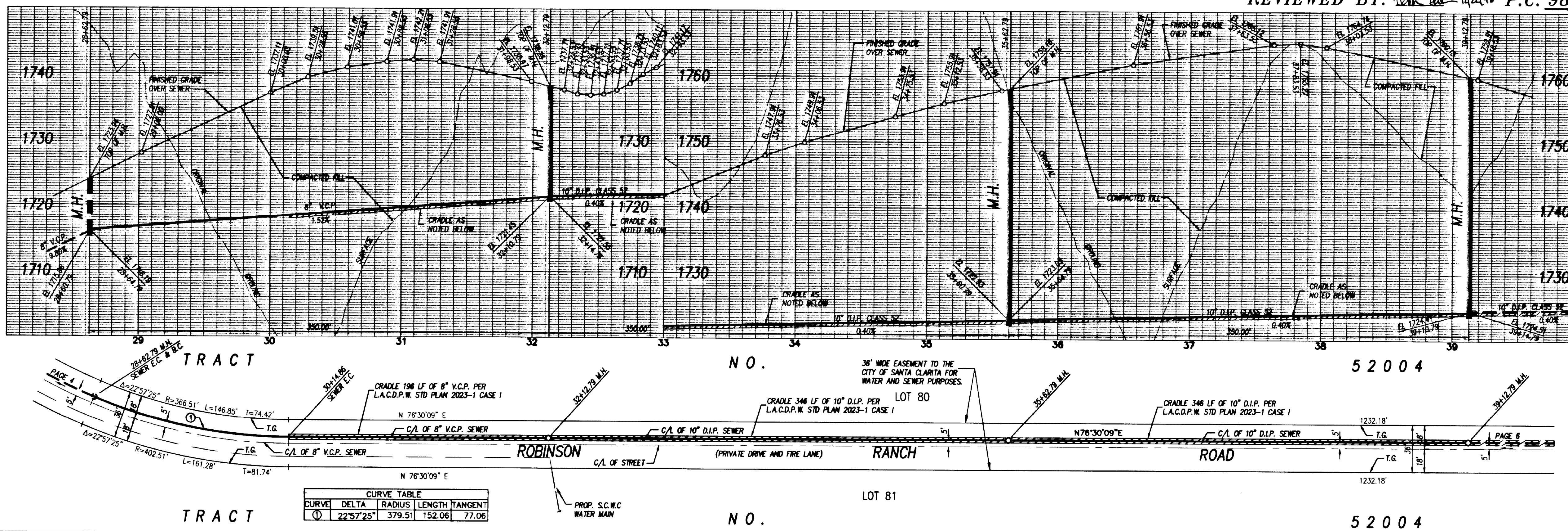


CURVE	DELTA	RADIUS	LENGTH	TANGENT
①	06°27'12"	1516.50	170.80	85.49
②	15°13'51"	447.95	119.08	59.89

REVIEWED BY: [signature] 12/22/98 P.C. 98-13 PAGE 5

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS

SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES (562) 699-7411 X-2727

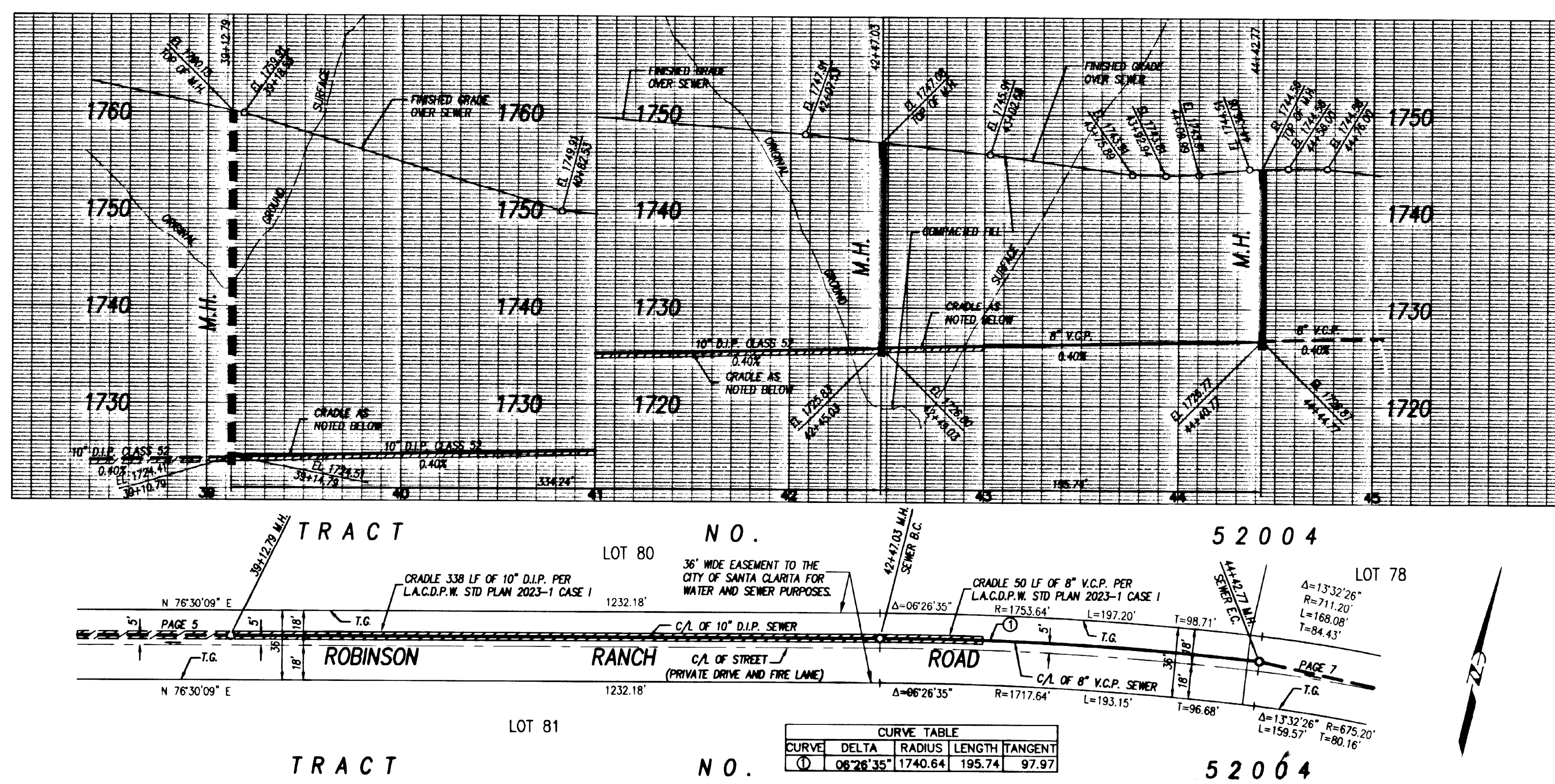


CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	TANGENT
①	22°57'25"	379.51	152.06	77.06

REVIEWED BY: [signature] 12/22/98 P.C. 98-13 PAGE 6

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS

SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES (562) 699-7411 X-2727



CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	TANGENT
①	06°26'35"	1740.64	195.74	97.97

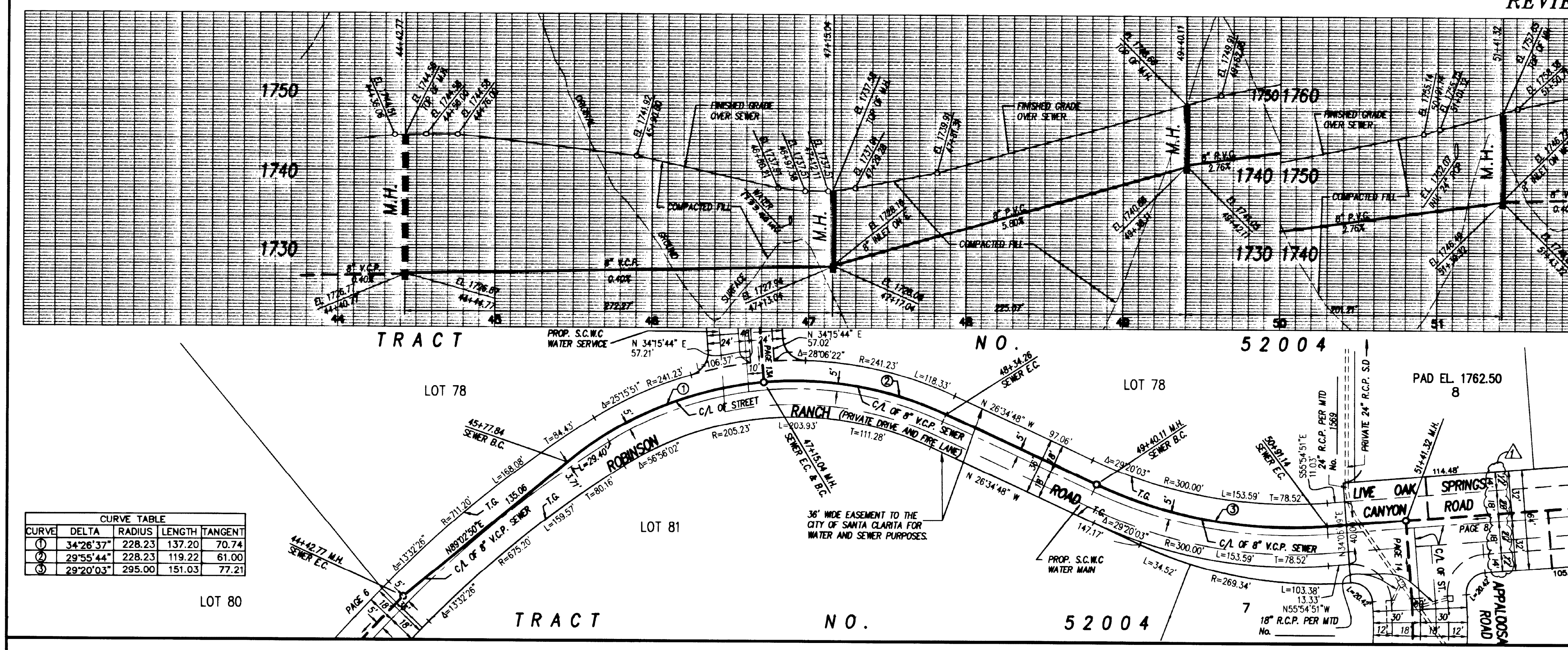
TR. NO. 52004 P.C. 98-13

Sewer PC 98-13
Sheet 3 of 7

REVIEWED BY: 12/22/98 P.C. 98-13 PAGE 7

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS

SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES (562) 699-7411 X-2727



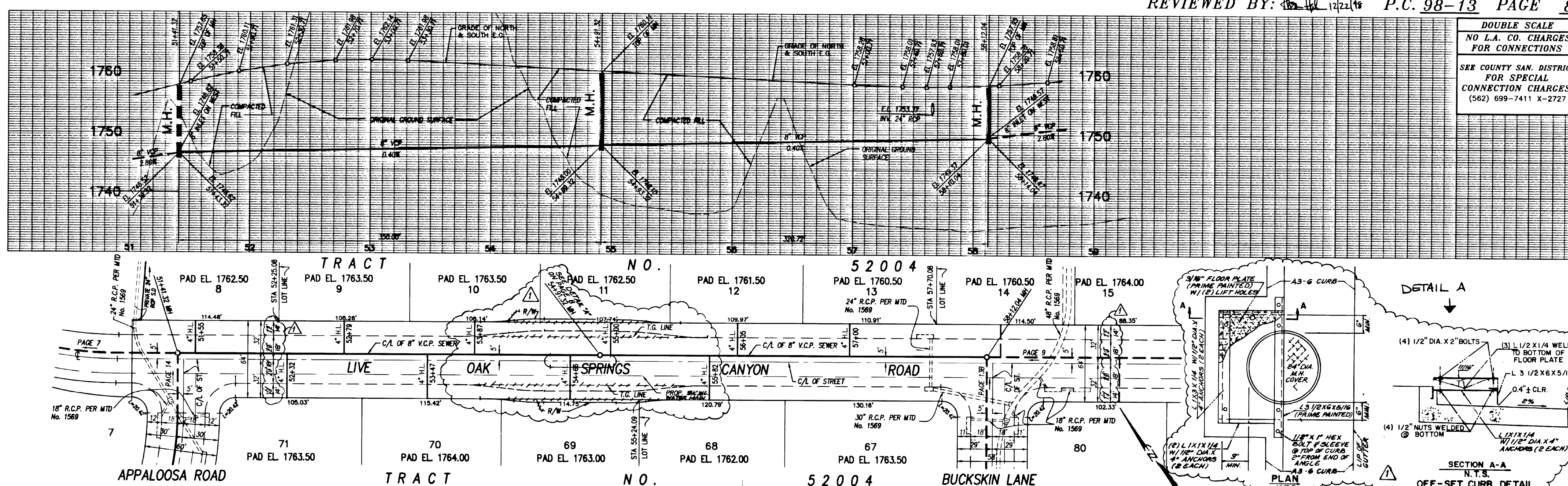
M.H.
FINISHED GRADE OVER SEWER
COMPACTED FILL
8" V.C.P. 0.40%
8" P.V.C. 5.60%
8" P.V.C. 2.76%
8" VCP 0.40%
TRACT NO. 52004
LOT 78
LOT 81
LOT 80
ROBINSON RANCH ROAD (PRIVATE DRIVE AND FIRE LANE)
C/L OF 8" V.C.P. SEWER
C/L OF STREET
36' WIDE EASEMENT TO THE CITY OF SANTA CLARITA FOR WATER AND SEWER PURPOSES.
PROP. S.C.W.C WATER SERVICE
PROP. S.C.W.C WATER MAIN
PAD EL. 1762.50
PRIVATE 24" R.C.P. S.D.
24" R.C.P. PER MTD No. 1569
18" R.C.P. PER MTD No. 1569
LIVE OAK SPRINGS CANYON ROAD
APPALOOSA ROAD

CURVE	DELTA	RADIUS	LENGTH	TANGENT
①	34°26'37"	228.23	137.20	70.74
②	29°55'44"	228.23	119.22	61.00
③	29°20'03"	295.00	151.03	77.21

REVIEWED BY: 12/22/98 P.C. 98-13 PAGE 8

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS

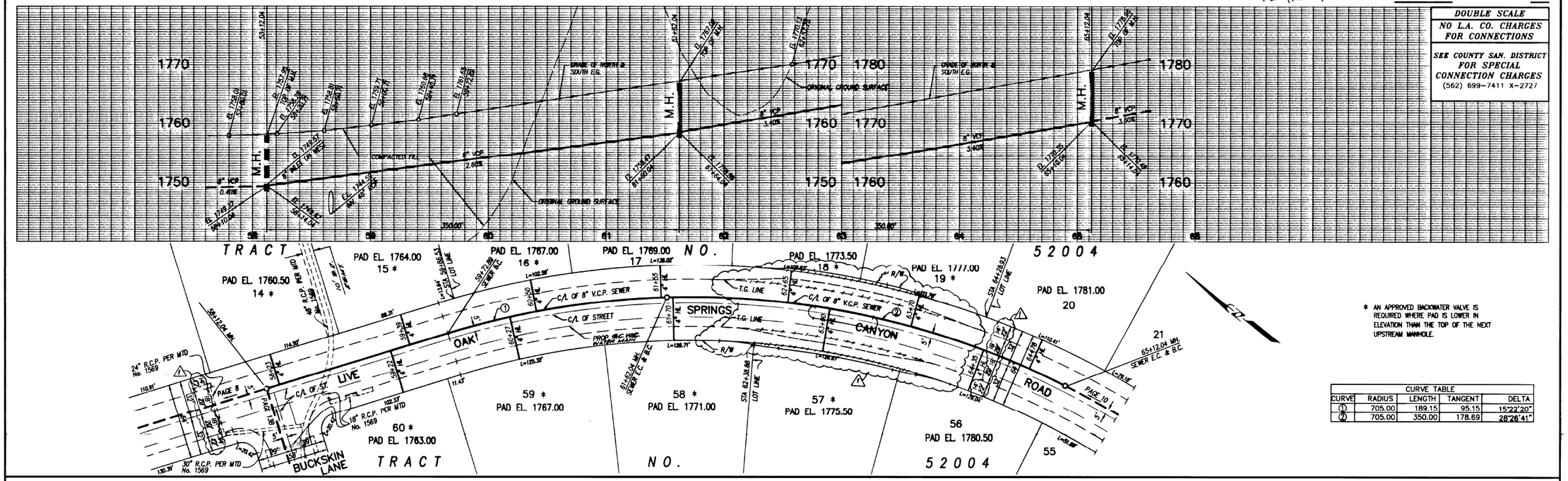
SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES (562) 699-7411 X-2727



GRADE OF NORTH & SOUTH E.G.
ORIGINAL GROUND SURFACE
COMPACTED FILL
8" VCP 0.40%
M.H.
TRACT NO. 52004
PAD EL. 1762.50 8
PAD EL. 1763.50 9
PAD EL. 1763.50 10
PAD EL. 1762.50 11
PAD EL. 1761.50 12
PAD EL. 1760.50 13
PAD EL. 1760.50 14
PAD EL. 1764.00 15
71 PAD EL. 1763.50
70 PAD EL. 1764.00
69 PAD EL. 1763.00
68 PAD EL. 1762.00
67 PAD EL. 1763.50
80
LIVE OAK SPRINGS CANYON ROAD
C/L OF 8" V.C.P. SEWER
C/L OF STREET
APPALOOSA ROAD
BUCKSKIN LANE
DETAIL A
3/16" FLOOR PLATE (PRIME PAINTED) W/(2) LIFT HOLES
A3-6 CURB
24" DIA. M.H. COVER
L 3 1/2X6X5/16 (PRIME PAINTED)
PLAN N.T.S.
(4) 1/2" DIA. X 2" BOLTS
(3) L 1/2 X1/4 WELDED TO BOTTOM OF FLOOR PLATE
(4) 1/2" NUTS WELDED @ BOTTOM
SECTION A-A N.T.S.
OFF-SET CURB DETAIL

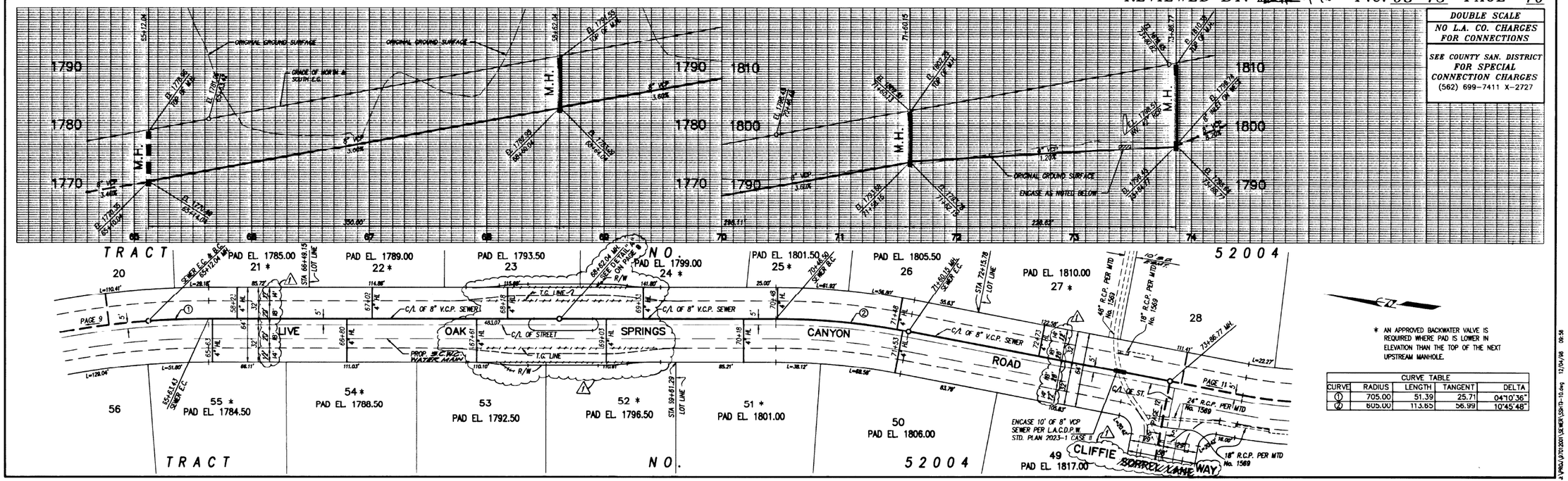
REVIEWED BY: 12/24/98 P.C. 98-13 PAGE 9

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS
SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES
(562) 699-7411 X-2727



REVIEWED BY: 12/24/98 P.C. 98-13 PAGE 10

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS
SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES
(562) 699-7411 X-2727



DRAWING NUMBER

Sewer PC 98-13
Sheet 5 of 7
00285

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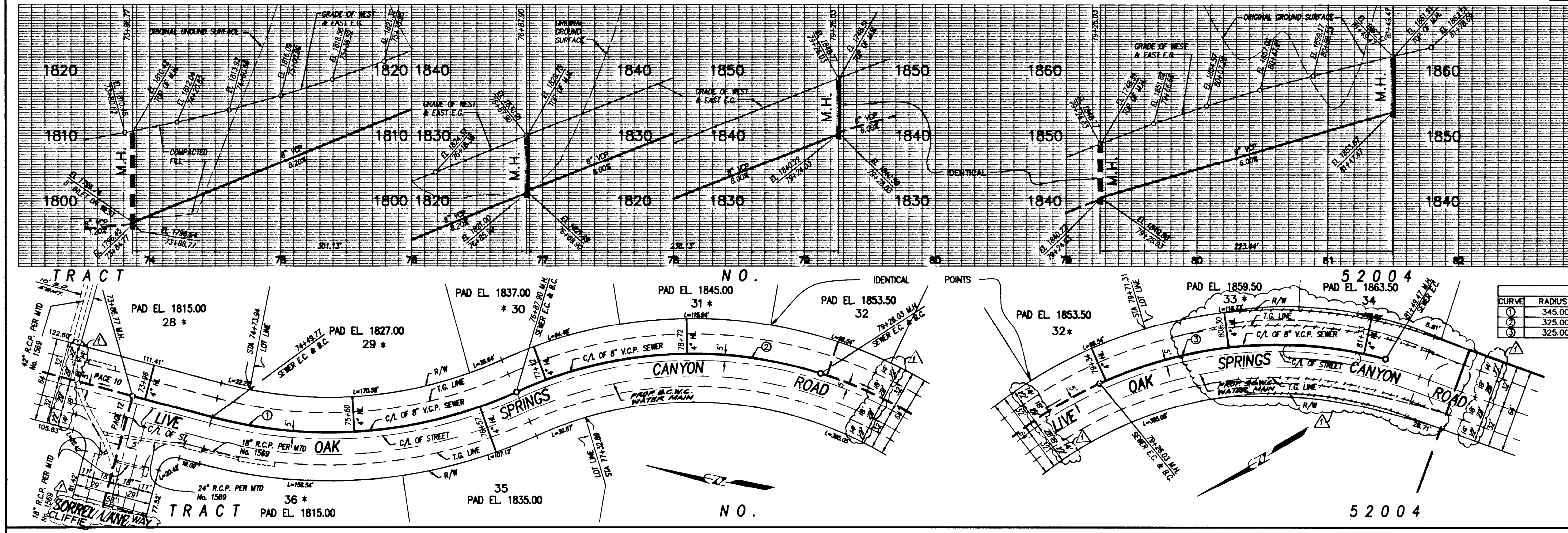
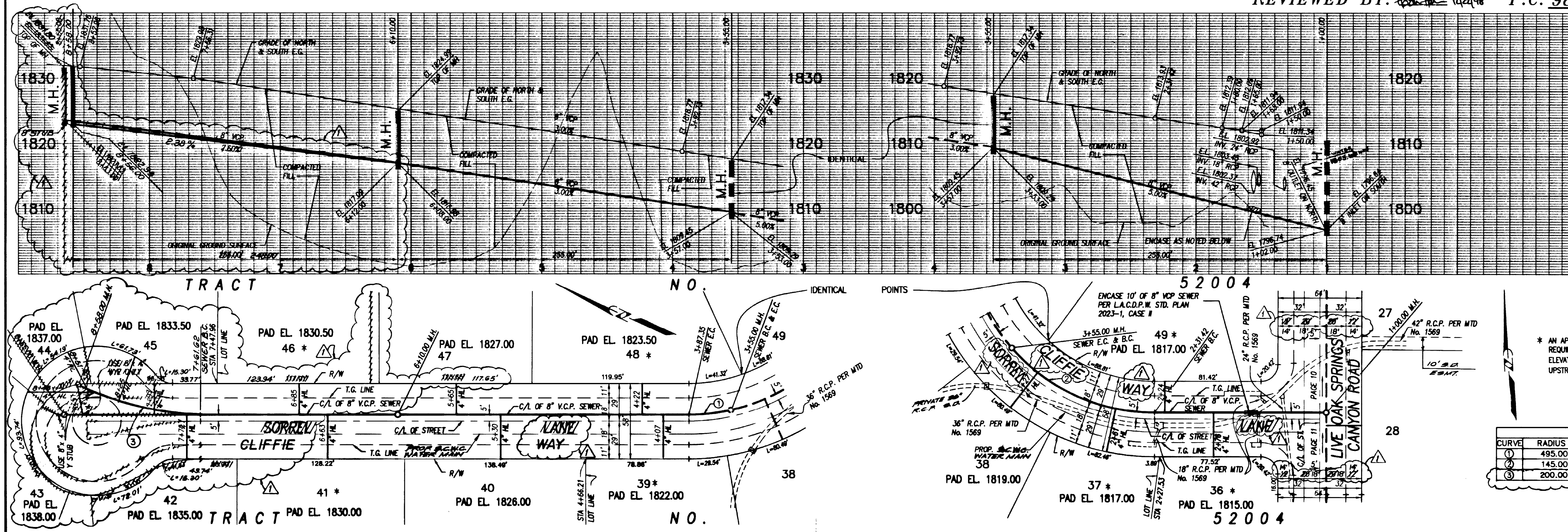
DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS
SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES (562) 699-7411 X-2727



CURVE	RADIUS	LENGTH	TANGENT	DELTA
①	345.00	238.13	124.03	39°32'50"
②	325.00	238.13	124.69	41°58'51"
③	325.00	223.44	116.34	39°23'29"

* AN APPROVED BACKWATER VALVE IS REQUIRED WHERE PAD IS LOWER IN ELEVATION THAN THE TOP OF THE NEXT UPSTREAM MANHOLE.

DOUBLE SCALE
NO L.A. CO. CHARGES FOR CONNECTIONS
SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES (562) 699-7411 X-2727



CURVE	RADIUS	LENGTH	TANGENT	DELTA
①	495.00	128.43	64.58	14°51'57"
②	145.00	32.35	16.24	12°46'56"
③	200.00	96.38	49.14	27°36'36"

* AN APPROVED BACKWATER VALVE IS REQUIRED WHERE PAD IS LOWER IN ELEVATION THAN THE TOP OF THE NEXT UPSTREAM MANHOLE.

TR. NO. 52004 P.C. 98-13

Sewer PC 98-13
Sheet 6 of 7
00285

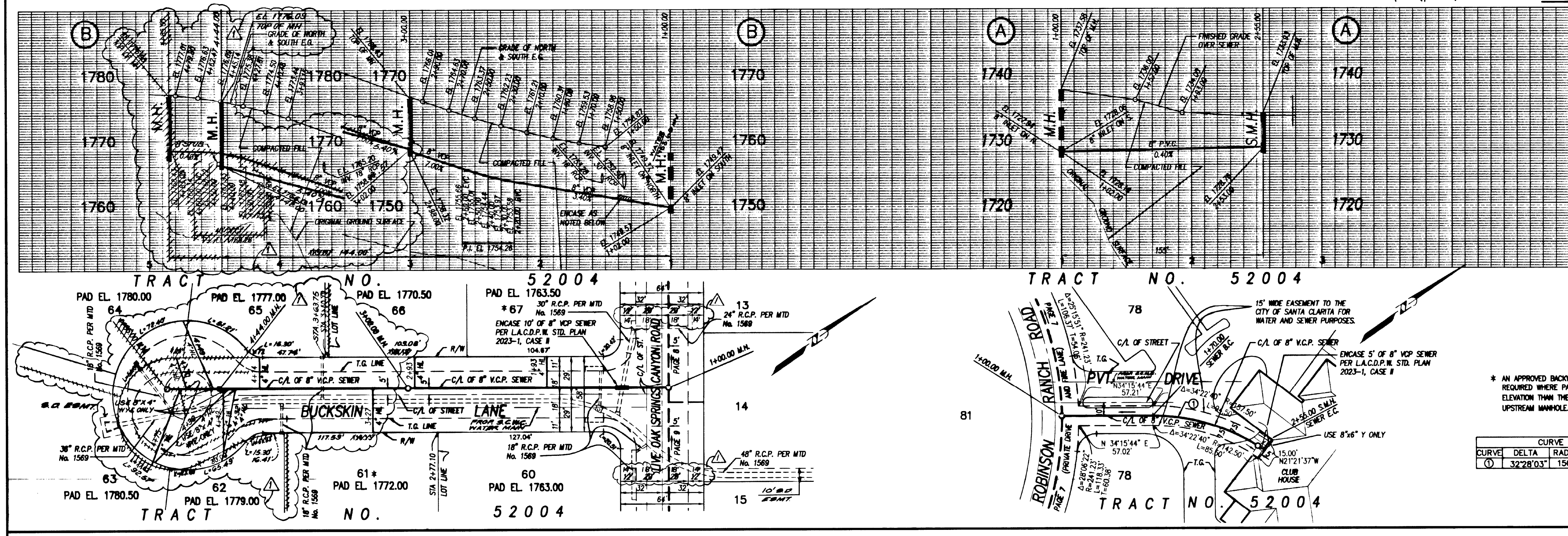
TR. NO. 52004 P.C. 98-13

REVIEWED BY: [signature] 12/22/98 P.C. 98-13 PAGE 13

DOUBLE SCALE

NO L.A. CO. CHARGES FOR CONNECTIONS

SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES
(562) 699-7411 X-2727



TRACT NO. 52004
BUCKSKIN LANE
LIVE OAK SPRINGS CANYON ROAD
ROBINSON RANCH ROAD (PRIVATE DRIVE)
PVT. DRIVE
CLUB HOUSE
PAD EL. 1780.00
PAD EL. 1777.00
PAD EL. 1770.50
PAD EL. 1763.50
PAD EL. 1780.50
PAD EL. 1779.00
PAD EL. 1772.00
PAD EL. 1763.00
ENCASE 10' OF 8" VCP SEWER PER L.A.C.D.P.W. STD. PLAN 2023-1, CASE II
15' WIDE EASEMENT TO THE CITY OF SANTA CLARITA FOR WATER AND SEWER PURPOSES.
ENCASE 5' OF 8" VCP SEWER PER L.A.C.D.P.W. STD. PLAN 2023-1, CASE II
USE 8"x6" Y ONLY
* AN APPROVED BACKWATER VALVE IS REQUIRED WHERE PAD IS LOWER IN ELEVATION THAN THE TOP OF THE NEXT UPSTREAM MANHOLE.

CURVE TABLE

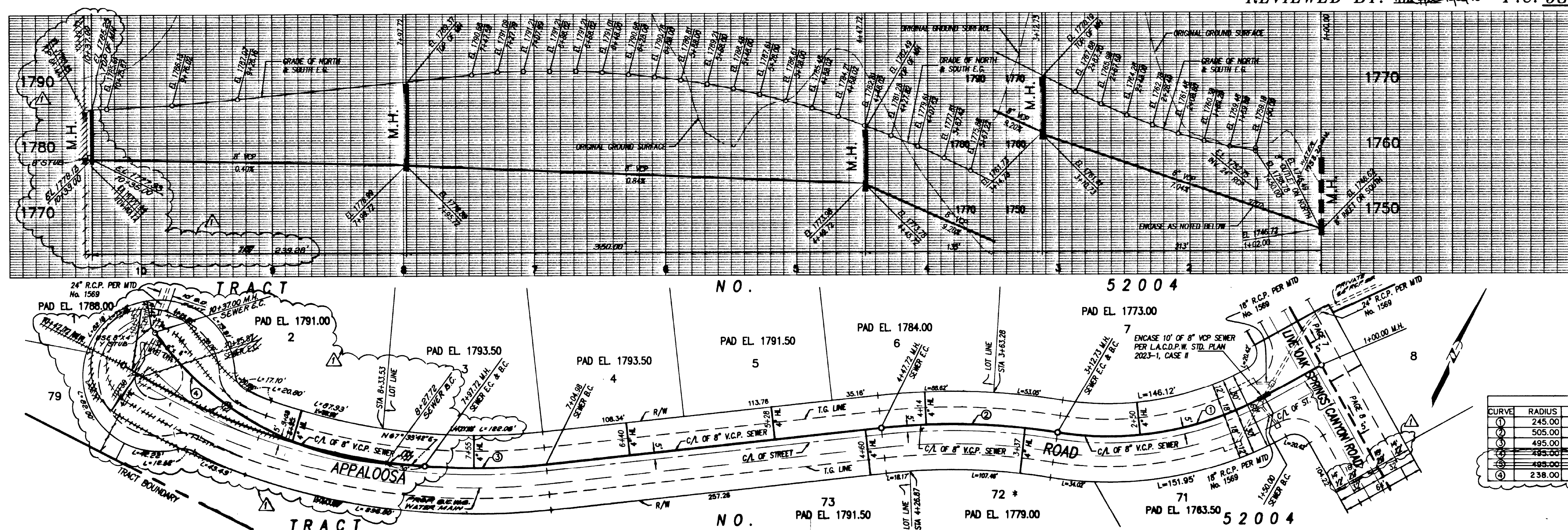
CURVE	DELTA	RADIUS	LENGTH	TANGENT
1	32°28'03"	150.00	85.00	43.67

REVIEWED BY: [signature] 12/22/98 P.C. 98-13 PAGE 14

DOUBLE SCALE

NO L.A. CO. CHARGES FOR CONNECTIONS

SEE COUNTY SAN. DISTRICT FOR SPECIAL CONNECTION CHARGES
(562) 699-7411 X-2727



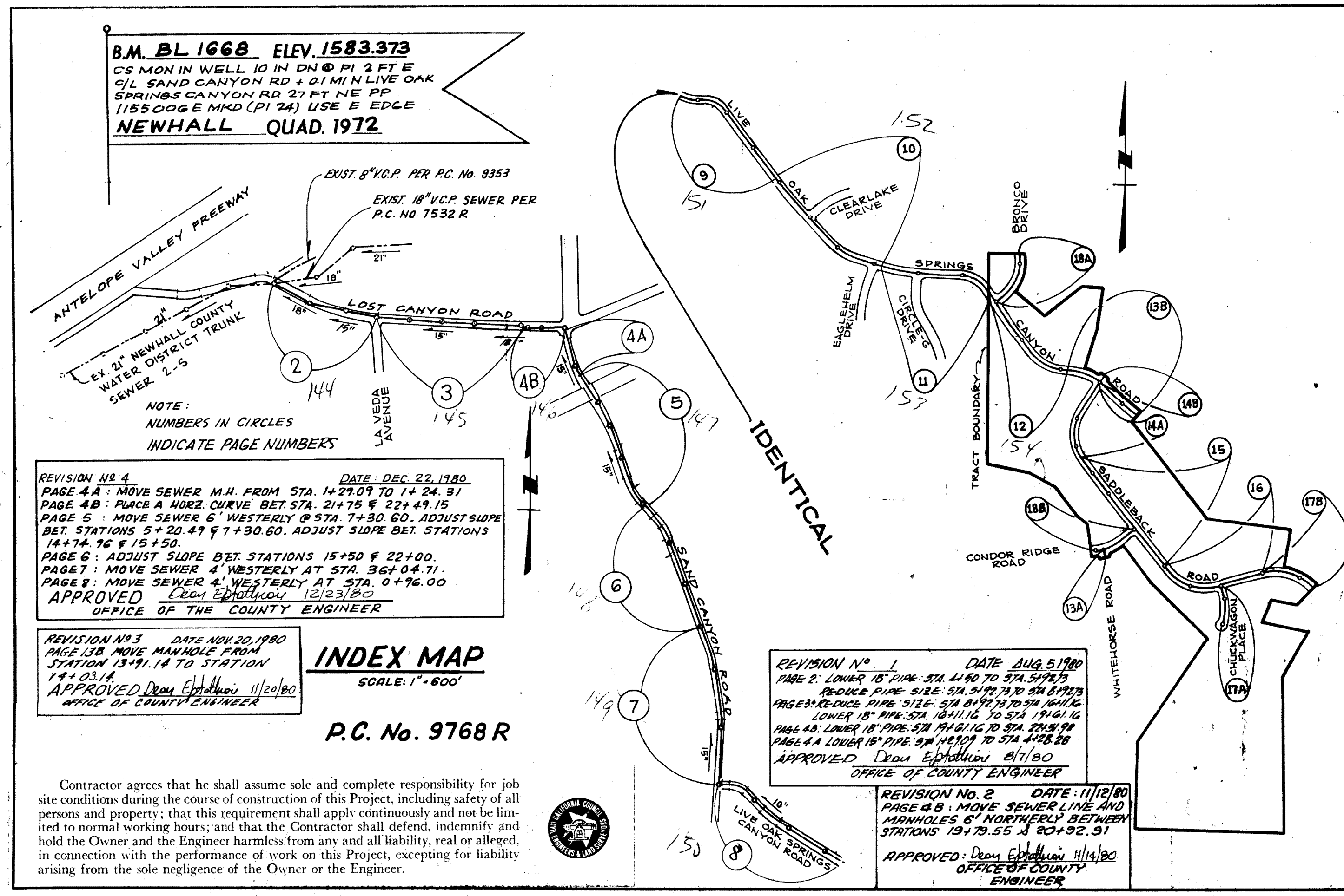
TRACT NO. 52004
APPALOOSA ROAD
LIVE OAK SPRINGS CANYON ROAD
TRACT BOUNDARY
PAD EL. 1788.00
PAD EL. 1791.00
PAD EL. 1793.50
PAD EL. 1793.50
PAD EL. 1791.50
PAD EL. 1784.00
PAD EL. 1773.00
PAD EL. 1791.50
PAD EL. 1779.00
PAD EL. 1763.50
ENCASE 10' OF 8" VCP SEWER PER L.A.C.D.P.W. STD. PLAN 2023-1, CASE II

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	DELTA
1	245.00	162.73	84.49	38°03'21"
2	505.00	134.99	67.90	15°18'55"
3	495.00	92.74	46.51	10°44'06"
4	495.00	128.43	64.58	14°51'57"
4	495.00	99.71	50.03	11°32'30"
4	238.00	209.28	111.95	50°22'54"

Sewer PC 98-13
Sheet 7 of 7

2. LACDPW As built PC 9768R



B.M. BL 1668 ELEV. 1583.373
CS MON IN WELL 10 IN DN @ PI 2 FT E C/L SAND CANYON RD + 0.1 MI N LIVE OAK SPRINGS CANYON RD 27 FT NE PP 1155006E MKD (PI 24) USE E EDGE
NEWHALL QUAD. 1972

REVISION No 4 DATE: DEC. 22, 1980
PAGE 4A: MOVE SEWER M.H. FROM STA. 1+29.09 TO 1+24.31
PAGE 4B: PLACE A HORZ. CURVE BET. STA. 21+75 & 22+49.15
PAGE 5: MOVE SEWER 6' WESTERLY @ STA. 7+30.60. ADJUST SLOPE BET. STATIONS 5+20.49 & 7+30.60. ADJUST SLOPE BET. STATIONS 14+74.96 & 15+50.
PAGE 6: ADJUST SLOPE BET. STATIONS 15+50 & 22+00.
PAGE 7: MOVE SEWER 4' WESTERLY AT STA. 36+04.71.
PAGE 8: MOVE SEWER 4' WESTERLY AT STA. 0+96.00
APPROVED Dean Efstathiou 12/23/80
OFFICE OF THE COUNTY ENGINEER

REVISION No 3 DATE NOV. 20, 1980
PAGE 13B MOVE MANHOLE FROM STATION 13+91.14 TO STATION 14+03.14
APPROVED Dean Efstathiou 11/20/80
OFFICE OF COUNTY ENGINEER

INDEX MAP

SCALE: 1" = 600'

P.C. No. 9768 R

REVISION No 1 DATE AUG. 5 1980
PAGE 2: LOWER 18" PIPE: STA. 4+50 TO STA. 5+92.73
REDUCE PIPE SIZE: STA. 5+92.73 TO STA 8+92.73
PAGE 3: REDUCE PIPE SIZE: STA 8+92.73 TO STA 16+11.16
LOWER 18" PIPE: STA 16+11.16 TO STA 19+61.16
PAGE 4B: LOWER 18" PIPE: STA 19+61.16 TO STA. 22+51.98
PAGE 4A LOWER 15" PIPE: STA 1+29.09 TO STA 4+28.28
APPROVED Dean Efstathiou 8/7/80
OFFICE OF COUNTY ENGINEER

REVISION No. 2 DATE: 11/12/80
PAGE 4B: MOVE SEWER LINE AND MANHOLES 6' NORTHERLY BETWEEN STATIONS 19+79.55 & 20+92.91
APPROVED: Dean Efstathiou 11/14/80
OFFICE OF COUNTY ENGINEER

Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this Project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this Project, excepting for liability arising from the sole negligence of the Owner or the Engineer.

GENERAL NOTES:

DOUBLE SCALE

1. ELEVATIONS ARE IN FEET ABOVE U.S.C. & G.S. SEA LEVEL DATUM OF 1929.
2. NO REVISIONS SHALL BE MADE IN THESE PLANS WITHOUT THE APPROVAL OF THE COUNTY ENGINEER.
3. NO REPRESENTATIVE OF THE COUNTY ENGINEER WILL SURVEY OR LAY OUT ANY PORTION OF THE WORK.
4. GRADES TO WHICH THIS IMPROVEMENT IS TO BE CONSTRUCTED ARE SHOWN ON PLANS AND PROFILES. GRADE POINTS FOR TOP OF CURBS, CENTER LINE OF STREETS, OR CENTER LINE OF ALLEYS ARE SHOWN BY CIRCLES ON PROFILES. AT ALL POINTS BETWEEN DESIGNATED POINTS THE GRADE SHALL BE ESTABLISHED SO AS TO CONFORM TO A STRAIGHT LINE DRAWN BETWEEN SAID DESIGNATED POINTS.
5. THE PRIVATE ENGINEER SHALL FURNISH THE COUNTY ENGINEER WITH GRADE SHEETS AND STATIONING FOR ALL HOUSE LATERALS AND "Y" OR "T" BRANCHES AND SHALL PROVIDE STAKES FOR THEM AT THEIR PROPER LOCATIONS WITH STATIONING PLAINLY MARKED. ALL HOUSE LATERALS SHALL BE CONSTRUCTED IN A STRAIGHT ALIGNMENT AT RIGHT ANGLES FROM THE MAIN LINE SEWER EXCEPT AS SHOWN ON THE PLANS. HOUSE LATERALS FROM CHIMNEYS SHALL NOT HAVE AN ANGLE OF LESS THAN 45° WITH THE MAIN LINE SEWER. ANY CHANGE IN ALIGNMENT SHALL BE REQUESTED IN WRITING BY THE PRIVATE ENGINEER.
6. THE PRIVATE ENGINEER SHALL FURNISH THE HOUSE LATERAL DEPTH AT THE PROPERTY LINE BELOW THE TOP OF CURB ELEVATION FOR EACH HOUSE LATERAL ON THE GRADE SHEET.
7. BEFORE WORK CAN BE STARTED, THE CONTRACTOR MUST OBTAIN A PERMIT TO EXCAVATE IN COUNTY STREETS FROM THE L.A. COUNTY ROAD DEPT., DISTRICT OFFICE NO 5 AND PAY A FEE TO THE COUNTY ENGINEER, 550 SOUTH VERMONT AVE, ROOM 406 LOS ANGELES TO COVER THE COST OF CONSTRUCTION INSPECTION AND RECORD PLANS.
8. IF WORK IS TO BE DONE IN A STATE HIGHWAY, A PERMIT MUST BE OBTAINED FROM THE STATE OF CALIFORNIA, DIVISION OF HIGHWAYS, 120 SOUTH SPRING STREET, LOS ANGELES, CALIFORNIA.
9. APPROVAL OF THIS PLAN BY THE COUNTY OF LOS ANGELES DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OF THE LOCATION OF OR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITY PIPE, OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THIS NOTE APPLIES TO ALL PAGES.
10. REFER TO SECTION 7-10.4.1 OF THE STANDARD SPECIFICATIONS, REGARDING SAFETY ORDERS.
11. PRIOR TO THE ISSUANCE OF THE REQUIRED SEWER CONSTRUCTION PERMIT, THE CONTRACTOR SHALL OBTAIN AND FILE WITH THE COUNTY ENGINEER COPIES OF A PERMIT TO EXCAVATE IN COUNTY STREETS FROM THE LOS ANGELES COUNTY ROAD DEPARTMENT, A PERMIT FOR EXCAVATIONS AND TRENCHES FROM THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY AND A CERTIFICATE OF WORKER'S COMPENSATION INSURANCE WITH THE DEPARTMENT OF COUNTY ENGINEER, 550 SOUTH VERMONT AVE. ROOM 405, LOS ANGELES, CALIFORNIA 90020, NAMED AS THE CERTIFICATE HOLDER TO BE NOTIFIED 30 DAYS PRIOR TO CANCELLATION OF POLICY.

CONSTRUCTION NOTES:

1. WORK SHALL BE CONSTRUCTED ACCORDING TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (1979 EDITION WITH SUPPLEMENTS) AND COUNTY ENGINEER SPECIAL PROVISIONS FOR THE CONSTRUCTION OF SANITARY SEWERS DATED SEPT. 21, 1976 AND SHALL BE PROSECUTED ONLY IN THE PRESENCE OF THE COUNTY ENGINEER.
2. THE CONTRACTOR SHALL NOTIFY THE ENVIRONMENTAL DEVELOPMENT DIVISION BY TELEPHONE 213/738-2156, AT LEAST TWENTY-FOUR HOURS BEFORE STARTING ANY WORK UNDER THIS CONTRACT.
3. HOUSE LATERALS TO BE CONSTRUCTED WITH INVERTS AT PROPERTY LINE 6 FEET BELOW CURB GRADE EXCEPT AS NOTED.
4. WYE OR TEE BRANCHES MAY BE USED FOR CONNECTIONS TO MAINLINE SEWERS EXCEPT AS NOTED.
5. ALL STRUCTURES SHALL BE EITHER BRICK MANHOLES PER S-3 OR PRECAST CONCRETE MANHOLES PER S-36, EXCEPT AS NOTED.
6. PROVIDE STAKES ON THE PROPERTY LINE OR PROPERTY LINES PRODUCED AT RIGHT ANGLES TO THE SEWER LINE AT THE CENTER LINE OF EACH MANHOLE.
7. MANHOLE TOPS IN UNIMPROVED RIGHTS OF WAY TO BE SIX INCHES ABOVE FINISHED GRADE.
8. VITRIFIED CLAY PIPE JOINTS SHALL BE TYPE "D", OR "G" PER STANDARD SPECIFICATIONS SECTION 208-2.
9. IF A POWER POLE IS WITHIN THREE FEET OF THE SEWER, THE SEWER SHALL BE ENCASED, PER S-23, CASE II, TWO FEET ON EACH SIDE FROM THE POINT OF INTERFERENCE.
10. IF DURING THE COURSE OF CONSTRUCTION IT IS DETERMINED THAT THERE IS LESS THAN FOUR FEET OF COVER OVER THE TOP OF A MAIN LINE OR HOUSE LATERAL V.C.P. SEWER WHICH IS NOT INDICATED ON THE PLANS, THE PIPE SHALL BE ENCASED PER S-23, CASE II UNLESS OTHERWISE APPROVED BY THE COUNTY ENGINEER.
11. ALL JOINTS BETWEEN CAST IRON PIPE AND VITRIFIED CLAY PIPE SHALL BE MADE WITH A RUBBER SLEEVE JOINT, TYPE "C" OR "D", (WITH BUSHING IF NECESSARY) PER STANDARD SPECIFICATIONS, SECTION 208-2.
12. SEWERS TO BE TESTED FOR LEAKAGE PER SECTION 306-1.4 OF THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
13. RESURFACE ALL TRENCHES WITHIN PAVED AREAS TO MEET L.A. COUNTY ROAD DEPT. OR CALIFORNIA STATE HIGHWAY REQUIREMENTS IN ACCORDANCE WITH PERMITS.
14. FULL COMPLIANCE WITH SECTION 306-1.3.5 OF THE SPECIAL PROVISIONS WILL BE REQUIRED FOR BACKFILL IN STREETS. CERTIFICATION OF BACKFILL COMPACTION AND SAND EQUIVALENTS BY A QUALIFIED, REGISTERED TESTING LABORATORY SHALL BE PROVIDED BY THE PERMITTEE PRIOR TO THE ISSUANCE OF A CERTIFICATE OF PARTIAL ACCEPTANCE.
15. IN THE CASE OF 15" DIAMETER PIPES OR SMALLER, A.B.S. COMPOSITE PIPE MAY BE USED IN LIEU OF V.C.P. IF IT CONFORMS TO THE CONDITIONS OF USAGE CONTAINED "IN PART IV OF THE SPECIAL PROVISIONS FOR THE CONSTRUCTION OF SAN. SEWERS". CASES WHERE A.B.S. COMPOSITE PIPE CAN NOT BE USED ARE BETWEEN STATIONS 25+50 & 32+50 AND BET. STATIONS 1+00 & 4+00 ON PAGES 7 & 8 RESPECTIVELY.

261H161
258H161
264H157

PROFILE, ALIGNMENT AND GRADE OF O-143

PAGE 1

SANITARY SEWERS

O-143

TO BE CONSTRUCTED IN

TRACT No. 37572

AND LOST CANYON ROAD AND OTHER R/WS

PRIVATE CONTRACT NO. 9768 R

W.S. 62

9 SHEETS; 18 PAGES

49293

SCALE: VERT. 1" = 8', HORIZ. 1" = 40' NOVEMBER, 1979

PREPARED IN THE OFFICES OF
ENGINEERING SERVICE CORPORATION
4676 ADMIRALTY WAY, SUITE 933 MARINA DEL REY, CA. 90291
TEL 213/822-4040

BY: [signature]
REG. C. E. No. 13095

RECORD PLANS

THE FOLLOWING LATEST REVISED STANDARD PLANS ON FILE IN THE OFFICE OF THE COUNTY ENGINEER SHALL APPLY IN THE CONSTRUCTION OF THIS PROJECT:

LEGEND	S-
MINIMUM PUBLIC SAFETY REQUIREMENTS	S-2
BRICK MANHOLE	S-
STANDARD MANHOLE STEP	S-17
BEDDING FOR SEWER PIPE	S-21
CRADLING AND ENCASEMENT	S-23
WYE OR TEE SUPPORT	S-26
ALLOWABLE TRENCH WIDTHS	S-33
LOCKING MANHOLE FRAME AND COVER	S-35
STD. PRESSURE M.H. FRAME & COVER	S-A-208
NON-REINFORCED PRECAST CONCRETE MANHOLE	S-36

NO CONNECTION FOR THE DISPOSAL OF INDUSTRIAL WASTES SHALL BE MADE TO SEWERS SHOWN ON THESE DRAWINGS UNTIL A PERMIT FOR INDUSTRIAL WASTE WATER DISCHARGE HAS BEEN ISSUED BY THE SANITATION DISTRICTS FOR SAID CONNECTION

BEFORE BREAKING INTO OR CONSTRUCTION ON A COUNTY SANITATION DISTRICT SEWER AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SANITATION DISTRICT INSPECTOR SHALL BE NOTIFIED BY PHONE 962-8605, SO THAT REQUIRED INSPECTION CAN BE MADE.

COUNTY OF LOS ANGELES, CALIFORNIA

STEPHEN J. KOONCE, COUNTY ENGINEER

APPROVED Martin L. Murphy 6-12-80 (DATE)

CHECKED Ralph David Seevert 6/10/80 (DATE)

REG. C.E. NO. 16883

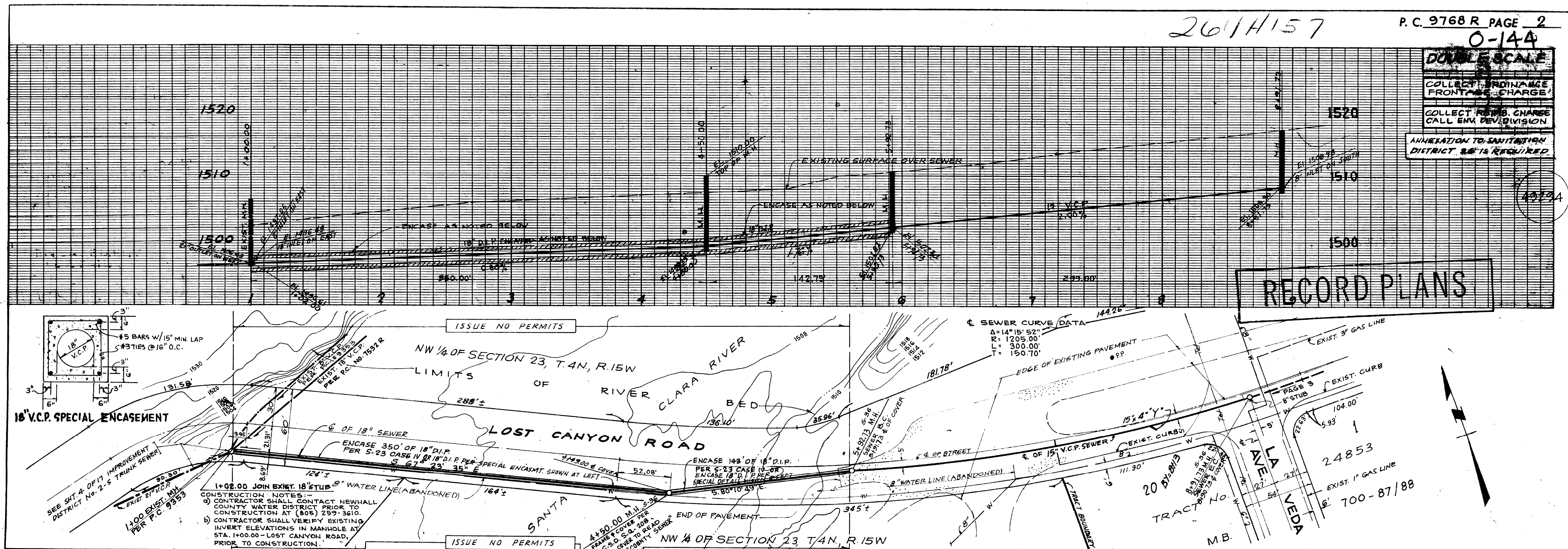
SANTA CLARITA VALLEY BLDG. DIST. 8.2

WALTER E. GARRISON, CHIEF ENGINEER
CO. SAN. DIST. NO. 26

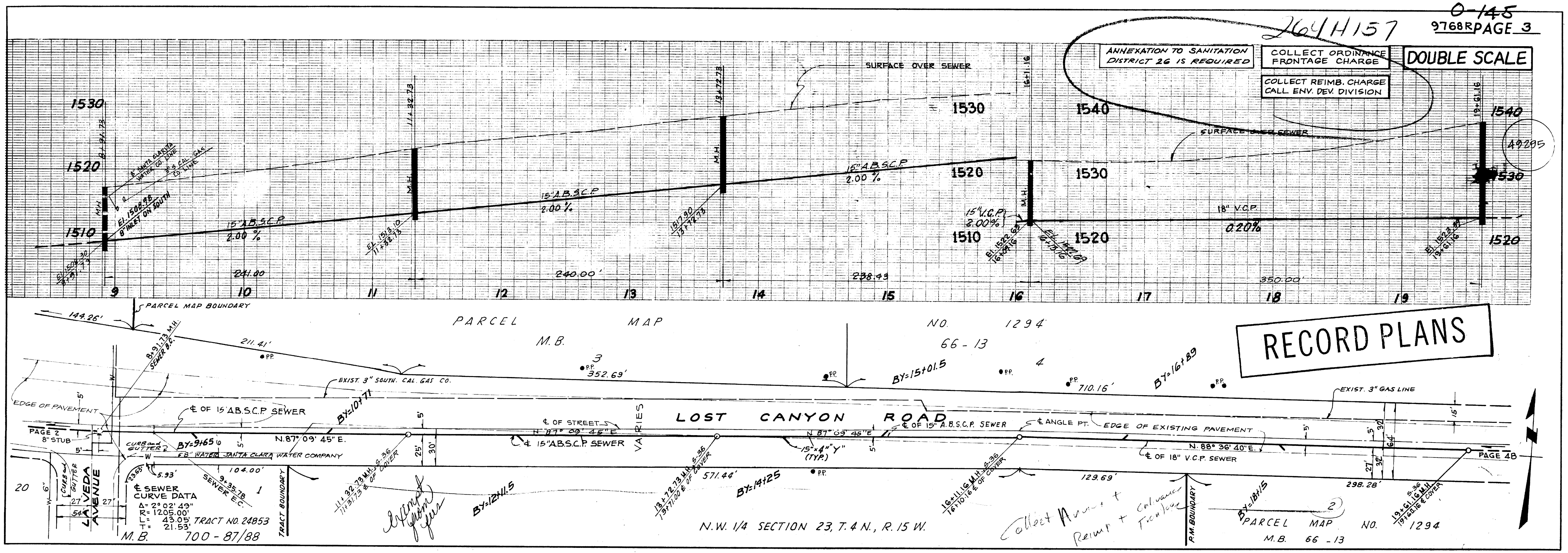
APPROVED Dean Efstathiou 6/17/80 for OFFICE ENGINEER

NEWHALL COUNTY WATER DISTRICT

APPROVED: [signature] 6/17/80
JINKS, GENERAL MANAGER (DATE)



261H157
P.C. 9768 R PAGE 2
0-144
DOUBLE SCALE
COLLECT ORDINANCE FRONTAGE CHARGE
COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION
ANNEXATION TO SANITATION DISTRICT 26 IS REQUIRED
RECORD PLANS
1520
1510
1500
EXISTING SURFACE OVER SEWER
ENCASE AS NOTED BELOW
18" D.I.P. ENCASED AS NOTED BELOW
15" V.C.P.
142.79'
299.00'
18"V.C.P. SPECIAL ENCASEMENT
#5 BARS W/15" MIN. LAP
#3 TIES @ 16" O.C.
ISSUE NO PERMITS
NW 1/4 OF SECTION 23, T.4N, R.15W
LIMITS OF RIVER BED
SANTA CLARA RIVER
LOST CANYON ROAD
288'±
136.40'
E OF 18" SEWER
ENCASE 350' OF 18" D.I.P. PER S-23 CASE IV OR 18" D.I.P. PER SPECIAL ENCASMT. SHOWN AT LEFT
S.67°23'35"E
8" WATER LINE (ABANDONED)
164'±
126'±
52.08'
ENCASE 149' OF 18" D.I.P. PER S-23 CASE IV OR ENCASE 18" D.I.P. PER SPECIAL DETAIL
S.80°10'49"E.
END OF PAVEMENT
345'±
E SEWER CURVE DATA
Δ = 14°15'52"
R = 1205.00'
L = 300.00'
T = 150.70'
144.26
181.78'
EDGE OF EXISTING PAVEMENT
E OF STREET
E OF 15" V.C.P. SEWER
EXIST. CURB
EXIST. 3" GAS LINE
EXIST. 1" GAS LINE
8" STUB
PAGE 3
TRACT BOUNDARY
LA VEDA AVE.
TRACT No. 24853
M.B. 700-87/88
104.00'
111.30'
SEE SHT. 4 OF 17 IMPROVEMENT DISTRICT No. 2-5 TRUNK SEWER
EXIST. 21" V.C.P.
1+00 EXIST. M.H. PER P.C. 9353
1+02.00 JOIN EXIST. 18" STUB
EXIST. 18" V.C.P. PER P.C. No. 7532 R
131.58'
4+50.00 M.H. S-36 FRAME & COVER PER C.S.D. S.G. 208 SEWER TO READ "COUNTY SEWER"
CONSTRUCTION NOTES:-
a) CONTRACTOR SHALL CONTACT NEWHALL COUNTY WATER DISTRICT PRIOR TO CONSTRUCTION AT (805) 259-3610.
b) CONTRACTOR SHALL VERIFY EXISTING INVERT ELEVATIONS IN MANHOLE AT STA. 1+00.00-LOST CANYON ROAD, PRIOR TO CONSTRUCTION.



0-148
264H157
9768R PAGE 3
ANNEXATION TO SANITATION DISTRICT 26 IS REQUIRED
COLLECT ORDINANCE FRONTAGE CHARGE
COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION
DOUBLE SCALE
SURFACE OVER SEWER
15" A.B.S.C.P. 2.00 %
15" V.C.P. 2.00 %
18" V.C.P. 0.20 %
M.H.
241.00
240.00'
238.43
350.00'
RECORD PLANS
PARCEL MAP NO. 1294
M.B. 66-13
PARCEL MAP BOUNDARY
EXIST. 3" SOUTH. CAL. GAS CO.
EXIST. 3" GAS LINE
EDGE OF PAVEMENT
℄ OF 15" A.B.S.C.P. SEWER
LOST CANYON ROAD
℄ OF STREET
N. 87° 09' 45" E.
N. 88° 36' 40" E.
℄ ANGLE PT.
EDGE OF EXISTING PAVEMENT
℄ OF 18" V.C.P. SEWER
15"x4" "Y" (TYP.)
8" WATER SANTA CLARA WATER COMPANY
LA VEDA AVENUE
℄ SEWER CURVE DATA
Δ= 2° 02' 49"
R= 1205.00'
L= 43.05'
T= 21.53'
TRACT NO. 24853
M.B. 700-87/88
TRACT BOUNDARY
N.W. 1/4 SECTION 23, T. 4 N., R. 15 W.
P.M. BOUNDARY
PAGE 2
PAGE 48

264H157

0-146

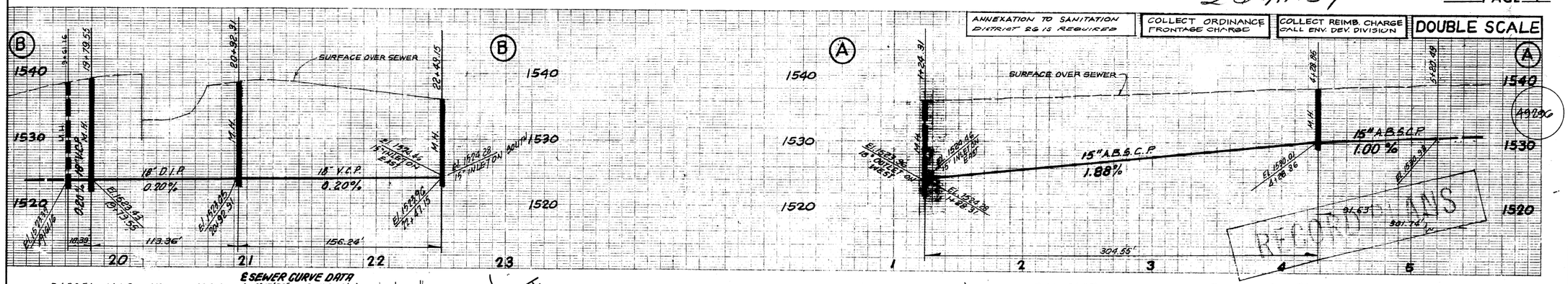
9768R PAGE 4

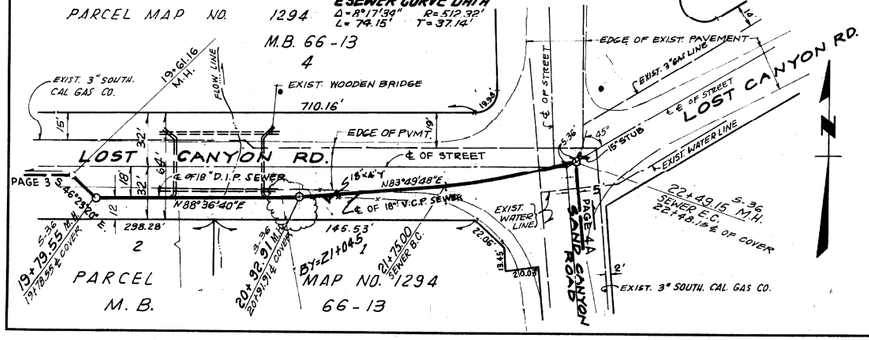
ANNEXATION TO SANITATION DISTRICT 26 IS REQUIRED

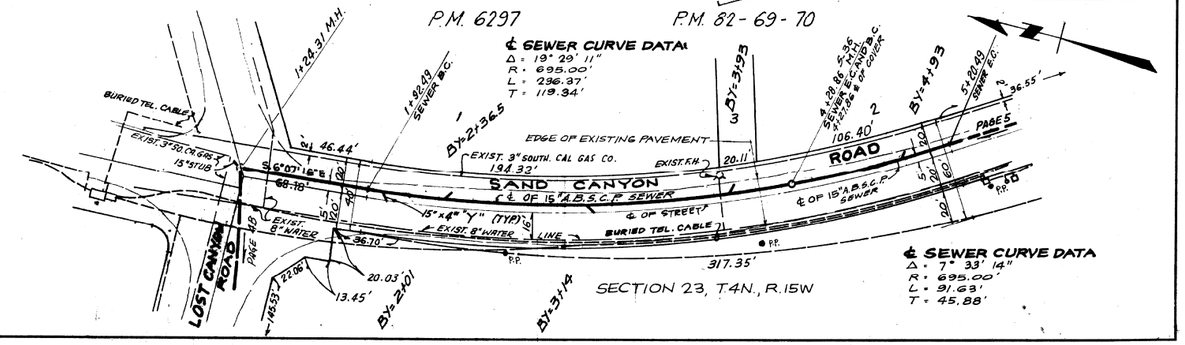
COLLECT ORDINANCE FRONTAGE CHARGE

COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION

DOUBLE SCALE







O-147

2641 , 2641H157

9768R PAGE 5

ANNEXATION TO SANITATION DISTRICT 26 IS REQUIRED

COLLECT ORDINANCE FRONTAGE CHARGE

COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION

DOUBLE SCALE

RECORD PLANS

A9297

SOUTHERN PACIFIC RAILROAD R/W

SECTION 23, T.4N., R.15W

SAND CANYON ROAD

℄ SEWER CURVE DATA
Δ = 6° 10' 55"
R = 1285.00'
L = 138.65'
T = 69.38'

℄ SEWER CURVE DATA
Δ = 24° 24' 20"
R = 395.00'
L = 168.25'
T = 85.42'

SURFACE OVER SEWER

EXIST. 3" GAS LINE

EXIST. 8" WATER LINE

EXIST. 8" GAS LINE

RAILROAD ABOVE

EDGE OF EXISTING PAVEMENT

APPROX. LOCATION 30" HP SOUTH. CAL. GAS CO. LINE

Page 4A

Page 6

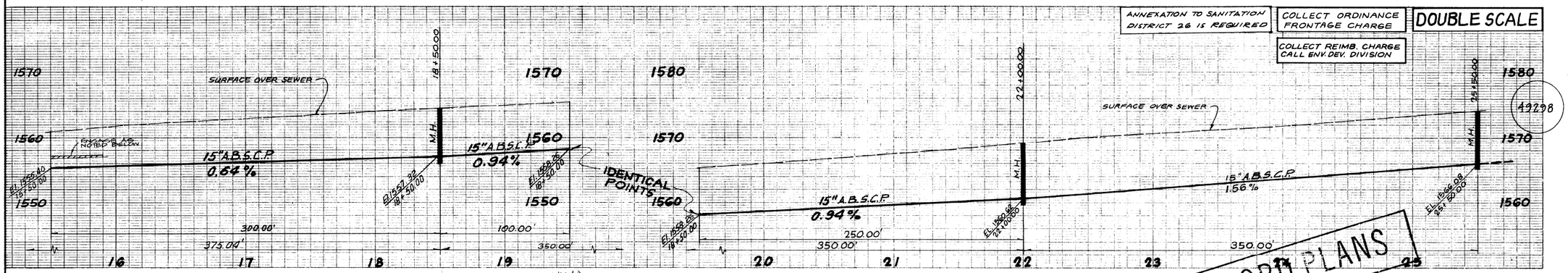
261H157 0-148 97698 R PAGE 6

ANNEXATION TO SANITATION DISTRICT 26 IS REQUIRED

COLLECT ORDINANCE FRONTAGE CHARGE

COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION

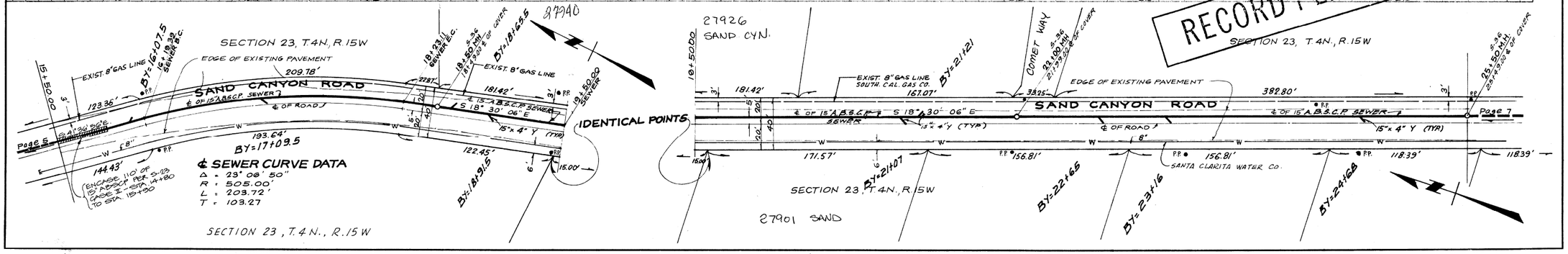
DOUBLE SCALE



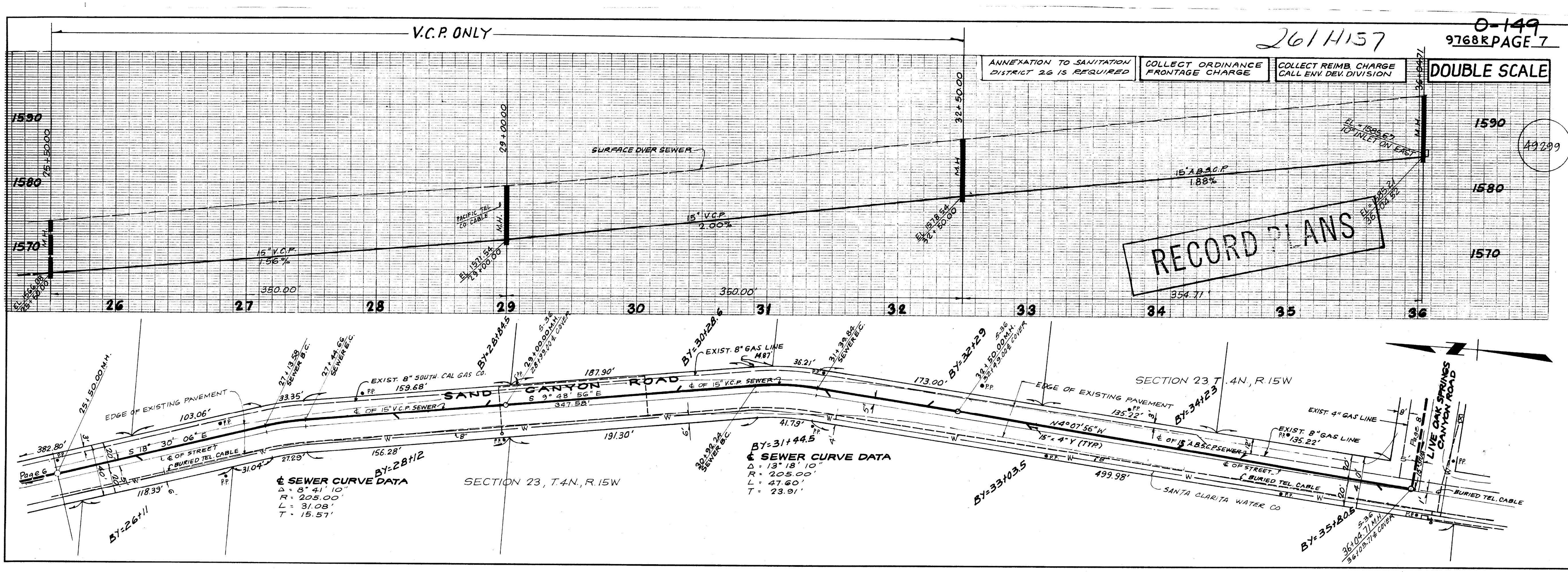
97940

27926 SAND CYN.

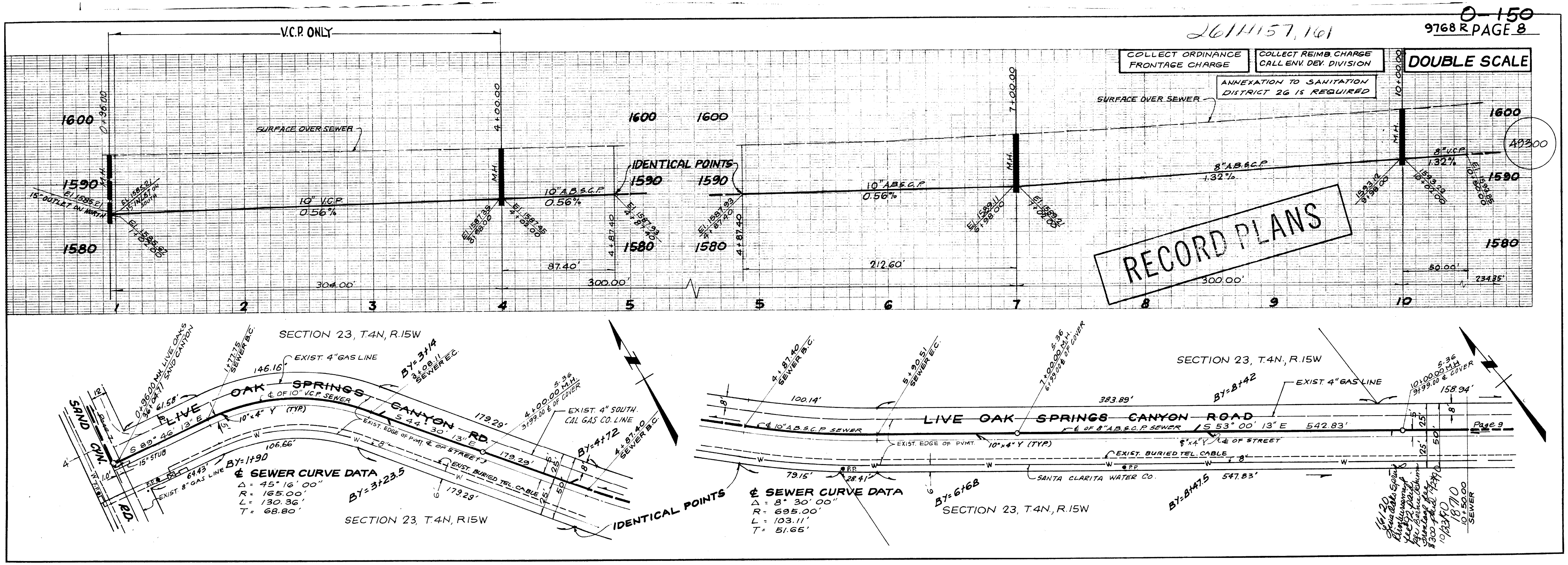
RECORD PLANS

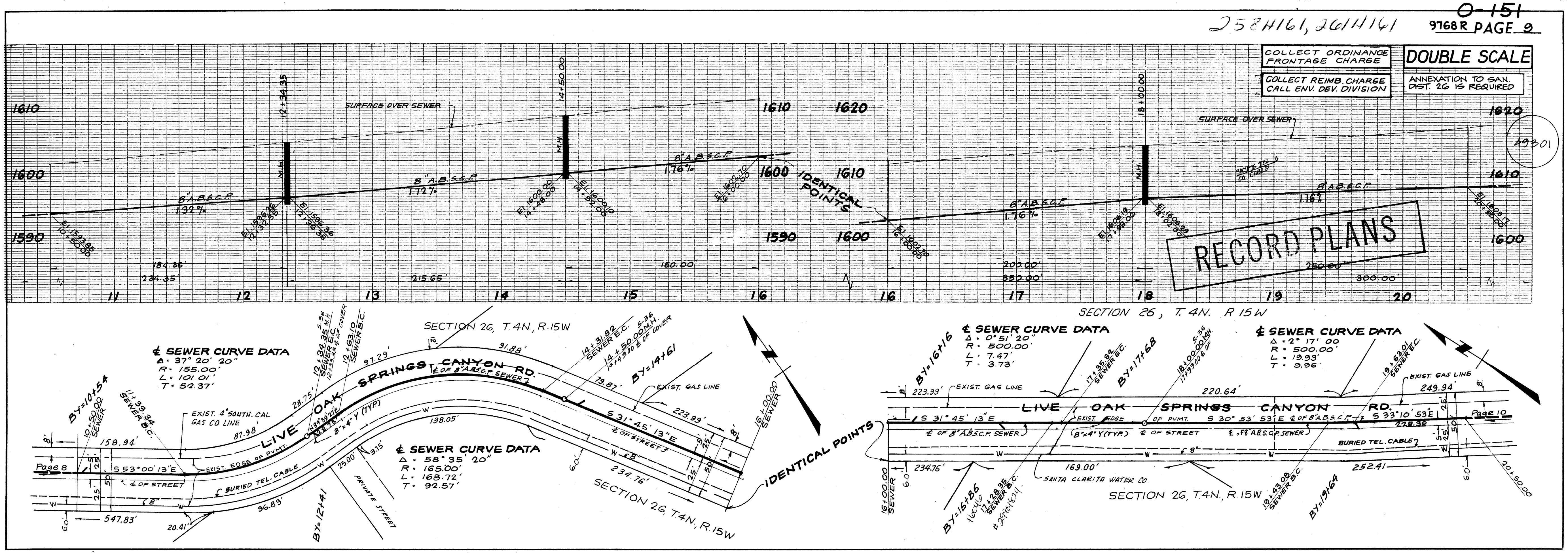


27901 SAND



0-149
9768R PAGE 7
261H157
V.C.P. ONLY
ANNEXATION TO SANITATION DISTRICT 26 IS REQUIRED
COLLECT ORDINANCE FRONTAGE CHARGE
COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION
DOUBLE SCALE
49299
RECORD PLANS
SURFACE OVER SEWER
15" V.C.P. 1.56%
15" V.C.P. 2.00%
15" A.B.S.C.P. 1.88%
350.00'
350.00'
354.71'
1590
1580
1570
26
27
28
29
30
31
32
33
34
35
36
SAND CANYON ROAD
SECTION 23 T.4N, R.15W
SECTION 23, T.4N., R.15W
LIVE OAK SPRINGS CANYON ROAD
EDGE OF EXISTING PAVEMENT
EXIST. 8" SOUTH CAL GAS CO.
EXIST. 8" GAS LINE
EXIST. 4" GAS LINE
BURIED TEL. CABLE
SANTA CLARITA WATER CO
℄ SEWER CURVE DATA
Δ = 8° 41' 10"
R = 205.00'
L = 31.08'
T = 15.57'
℄ SEWER CURVE DATA
Δ = 13° 18' 10"
R = 205.00'
L = 47.60'
T = 23.91'
S 9° 48' 56" E
N 4° 07' 56" W
BY=26+11
BY=28+12
BY=28+84.5
BY=30+28.6
BY=31+44.5
BY=32+29
BY=33+03.5
BY=34+23
BY=35+80.5


0-150
9768 R PAGE 8
261-157,161
COLLECT ORDINANCE FRONTAGE CHARGE
COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION
DOUBLE SCALE
ANNEXATION TO SANITATION DISTRICT 26 IS REQUIRED
V.C.P. ONLY
SURFACE OVER SEWER
IDENTICAL POINTS
10" V.C.P. 0.56%
10" A.B.S.C.P. 0.56%
8" A.B.S.C.P. 1.32%
8" V.C.P. 1.32%
15" OUTLET ON NORTH
M.H.
RECORD PLANS
1600
1590
1580
87.40'
304.00'
300.00'
212.60'
80.00'
SECTION 23, T.4N, R.15W
LIVE OAK SPRINGS CANYON RD.
LIVE OAK SPRINGS CANYON ROAD
SAND CYN. RD.
EXIST. 4" GAS LINE
EXIST. 4" SOUTH. CAL GAS CO. LINE
EXIST. EDGE OF PVMT.
EXIST. BURIED TEL. CABLE
EXIST. 8" GAS LINE
SANTA CLARITA WATER CO.
10"x4" Y (TYP.)
15" STUB
S 89° 46' 13" E
S 44° 30' 13" E
S 53° 00' 13" E
542.83'
547.83'
383.89'
100.14'
158.94'
146.16'
179.29'
106.66'
BY=1+90
BY=3+14
BY=3+23.5
BY=4+72
BY=6+68
BY=8+42
BY=8+147.5
℄ SEWER CURVE DATA
Δ = 45° 16' 00"
R = 165.00'
L = 130.36'
T = 68.80'
℄ SEWER CURVE DATA
Δ = 8° 30' 00"
R = 695.00'
L = 103.11'
T = 51.65'
IDENTICAL POINTS
Page 9
4030



252H161, 261H161
0-151
9768R PAGE 9
COLLECT ORDINANCE FRONTAGE CHARGE
COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION
DOUBLE SCALE
ANNEXATION TO SAN. DIST. 26 IS REQUIRED
49301
RECORD PLANS
SURFACE OVER SEWER
8" A.B.S.C.P. 1.32%
8" A.B.S.C.P. 1.72%
8" A.B.S.C.P. 1.76%
8" A.B.S.C.P. 1.16%
M.H.
12+34.35
14+50.00
18+00.00
IDENTICAL POINTS
184.35'
234.35'
215.65'
180.00'
200.00'
350.00'
250.00'
300.00'
SECTION 26, T.4N., R.15W
℄ SEWER CURVE DATA
Δ = 37° 20' 20"
R = 155.00'
L = 101.01'
T = 52.37'
℄ SEWER CURVE DATA
Δ = 58° 35' 20"
R = 165.00'
L = 168.72'
T = 92.57'
℄ SEWER CURVE DATA
Δ = 0° 51' 20"
R = 500.00'
L = 7.47'
T = 3.73'
℄ SEWER CURVE DATA
Δ = 2° 17' 00
R = 500.00'
L = 19.93'
T = 9.96'
LIVE OAK SPRINGS CANYON RD.
S 53° 00' 13" E
S 31° 45' 13" E
S 30° 53' 53" E
S 33° 10' 53" E
EXIST. 4" SOUTH. CAL GAS CO LINE
EXIST. GAS LINE
EXIST. EDGE OF PVMT.
℄ OF STREET
BURIED TEL. CABLE
PRIVATE STREET
8" x 4" Y (TYP)
SANTA CLARITA WATER CO.
Page 8
Page 10
BY=10+54
BY=12+41
BY=14+61
BY=16+16
BY=16+86
BY=17+68
BY=19+64

258H161

O-152
9768 R PAGE 10

COLLECT ORDINANCE FRONTAGE CHARGE

COLLECT REIMB. CHARGE CALL ENV. DEV. DIVISION

DOUBLE SCALE

ANNEXATION TO SAN. DIST. 26 IS REQUIRED.

49302

RECORD PLANS

SECTION 26, T.4N., R.15W. TRACT No. 30087 M.B. 741 53/59

TRACT No. 30087 M.B. 741 53/59

SECTION 26, T. 4N., R. 15W. TRACT No. 30087 M.B. 741 53/59

TRACT No. 30087 M.B. 741 53/59

IDENTICAL POINTS

IDENTICAL POINTS

LIVE OAK SPRINGS CANYON RD.

CLEARLAKE DRIVE

EAGLEHELM DRIVE

TRACT BOUNDARY

SANTA CLARITA WATER CO.

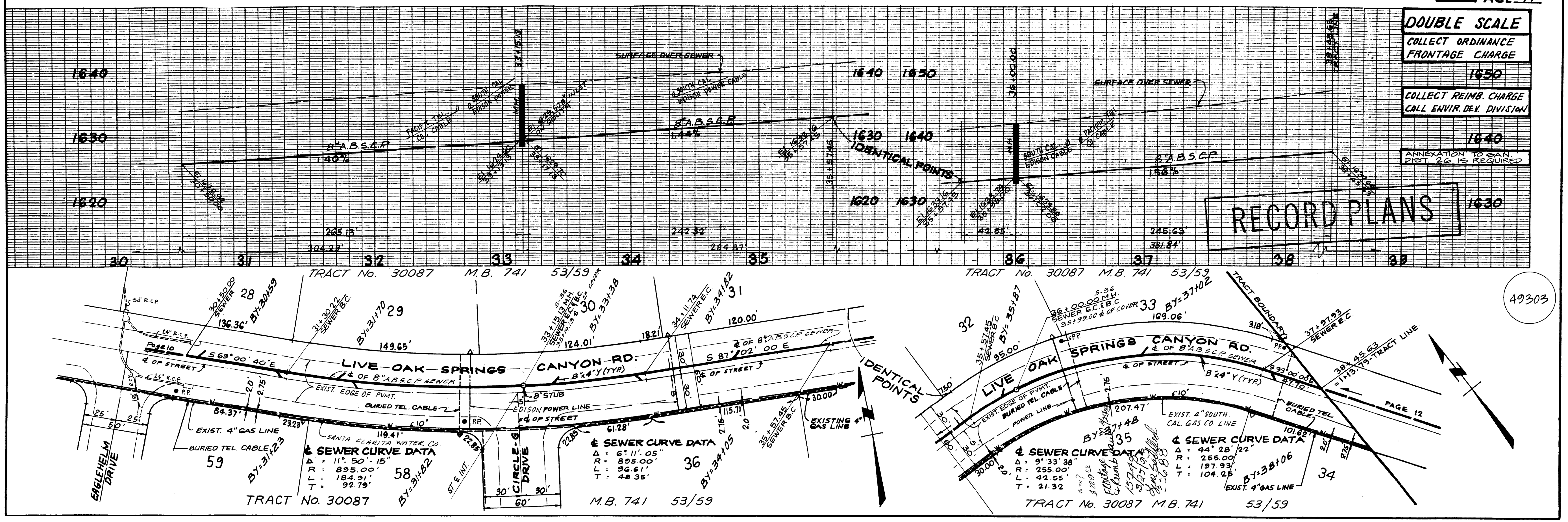
℄ SEWER CURVE DATA
Δ = 3° 39' 14"
R = 1615.00'
L = 103.64'
T = 51.84'

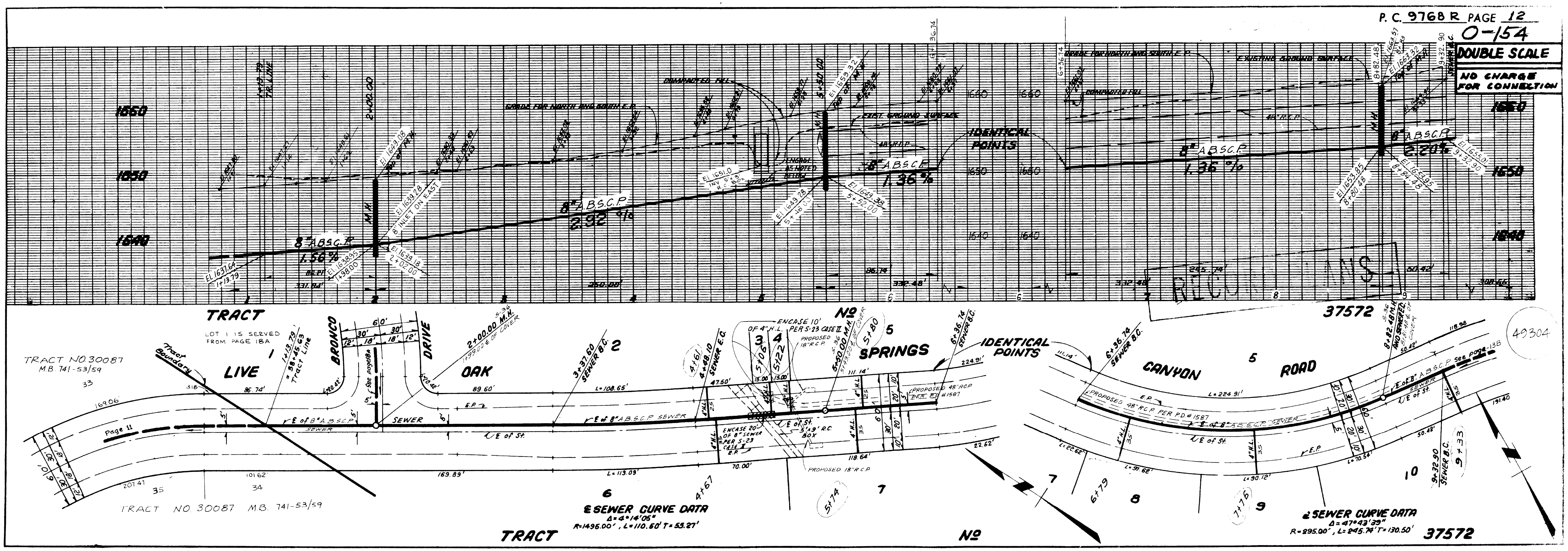
℄ SEWER CURVE DATA
Δ = 20° 24' 49"
R = 495.00'
L = 176.96'
T = 89.13'

℄ SEWER CURVE DATA
Δ = 11° 50' 44"
R = 495.00'
L = 102.34'
T = 51.35'

Page 9

Page 11


DOUBLE SCALE
COLLECT ORDINANCE FRONTAGE CHARGE
COLLECT REIMB. CHARGE CALL ENVIR. DEV. DIVISION
ANNEXATION TO SAN. DIST. 26 IS REQUIRED
RECORD PLANS
IDENTICAL POINTS
SURFACE OVER SEWER
8" A.B.S.C.P.
1.40%
1.44%
1.56%
LIVE OAK SPRINGS CANYON RD.
TRACT No. 30087 M.B. 741 53/59
S 69°00'40"E
S 87°02'00"E
EXIST. 4" GAS LINE
BURIED TEL. CABLE
SANTA CLARITA WATER CO.
EDISON POWER LINE
℄ SEWER CURVE DATA
Δ: 11°50'15"
R: 895.00'
L: 184.91'
T: 92.79'
℄ SEWER CURVE DATA
Δ: 6°11'05"
R: 895.00'
L: 96.61'
T: 48.35'
℄ SEWER CURVE DATA
Δ: 9°33'38"
R: 255.00'
L: 42.55'
T: 21.32
℄ SEWER CURVE DATA
Δ: 44°28'22"
R: 255.00
L: 197.93'
T: 104.26
EAGLEHELM DRIVE
CIRCLE-G DRIVE
EXISTING GAS LINE
EXIST. 4" SOUTH. CAL. GAS CO. LINE
TRACT BOUNDARY
PAGE 12
49303


P. C. 9768 R PAGE 12
0-154
DOUBLE SCALE
NO CHARGE FOR CONNECTION
1660
1650
1640
8" A.B.S.C.P. 1.56%
8" A.B.S.C.P. 2.32 %
8" A.B.S.C.P. 1.36%
8" A.B.S.C.P. 1.36 %
8" A.B.S.C.P. 2.20%
IDENTICAL POINTS
TRACT
LOT 1 IS SERVED FROM PAGE 18A
TRACT NO.30087 M.B. 741-53/59
LIVE
BRONCO
DRIVE
OAK
SPRINGS
Nº
CANYON
ROAD
37572
49304
E SEWER CURVE DATA
Δ=4°14'05"
R=1495.00', L=110.60' T=55.27'
E SEWER CURVE DATA
Δ=47°43'39"
R=295.00', L=245.74' T=130.50'
TRACT NO 30087 M.B. 741-53/59
TRACT
Nº
37572

9768R PAGE 13
O-155

DOUBLE SCALE

NO CHARGE FOR CONNECTION

40305

RECORD PLANS

TRACT Nº 37572

TRACT NO 37576

TRACT Nº 37572

TRACT NO. 37577

OAK ROAD

SPRINGS CANYON ROAD

LIVE OAK ROAD

CONDOR RIDGE ROAD

WHITEHORSE ROAD

8" A.B.S.C.P. 2.20 %

8" A.B.S.C.P. 5.92 %

8" A.B.S.C.P. 14.00 %

8" A.B.S.C.P. 2.12 %

E of 8" A.B.S.C.P. SEWER

E Sewer Curve Data
Δ = 29° 17' 57"
R = 505.00' L = 258.24'
T = 132.01'

E Sewer Curve Data
Δ = 10° 33' 26"
R = 505.00' L = 93.05'
T = 46.66'

E Sewer Curve Data
Δ = 15° 40' 47"
R = 345.00' L = 94.41'
T = 47.50'

ALLOW NO CONNECTION'S MAIN LINE MUST BE EXTENDED

ENCASE 10' OF SEWER PER S-23 CASE II

TRACT BOUNDARY

LOT 42 IS SERVED FROM PAGE 14

TRACT Nº 37572

TRACT NO. 37577

9768R PAGE 14
0-156

DOUBLE SCALE

NO CHARGE FOR CONNECTION

49206

RECORD PLANS

LIVE OAK SPRINGS CANYON ROAD TRACT No 37572

IDENTICAL POINTS

8"A.B.S.C.P. 1.92%

8"A.B.S.C.P. 2.80%

8"A.B.S.C.P. 6.08%

COMPACTED FILL

EXIST. GROUND SURFACE

GRADE OF EAST AND WEST E.P.

EXIST. GROUND SURFACE

ENCASE AS NOTED ABOVE

ALLOW NO CONNECTION-MAIN LINE MUST BE EXTENDED

SADDLEBACK ROAD

(PRIVATE & FUTURE STREET)

60' SANITARY SEWER R/W

LOT 10 IS SERVED FROM PAGE 12

0+38.32 TR. BOUNDARY Plug End @ Tract line

0+00 M.H.

1+40

2+48.51 Sewer B.C.

3+50.00 M.H. Sewer E.C. & B.C. & Curve

5+00.00 M.H. Sewer E.C. & B.C. & Curve

6+18.18 SEWER E.C.

E Sewer Curve Data
Δ=29°07'59"
R=295.00' L=150.00'
T=76.66'

E Sewer Curve Data
Δ=19°42'41"
R=295.00' L=101.49'
T=51.25'

E Sewer Curve Data
Δ=22°57'11"
R=295.00' L=118.18'
T=59.89'

Encase 20' of Sewer per S-29 Case II

Y=3+55
3+64

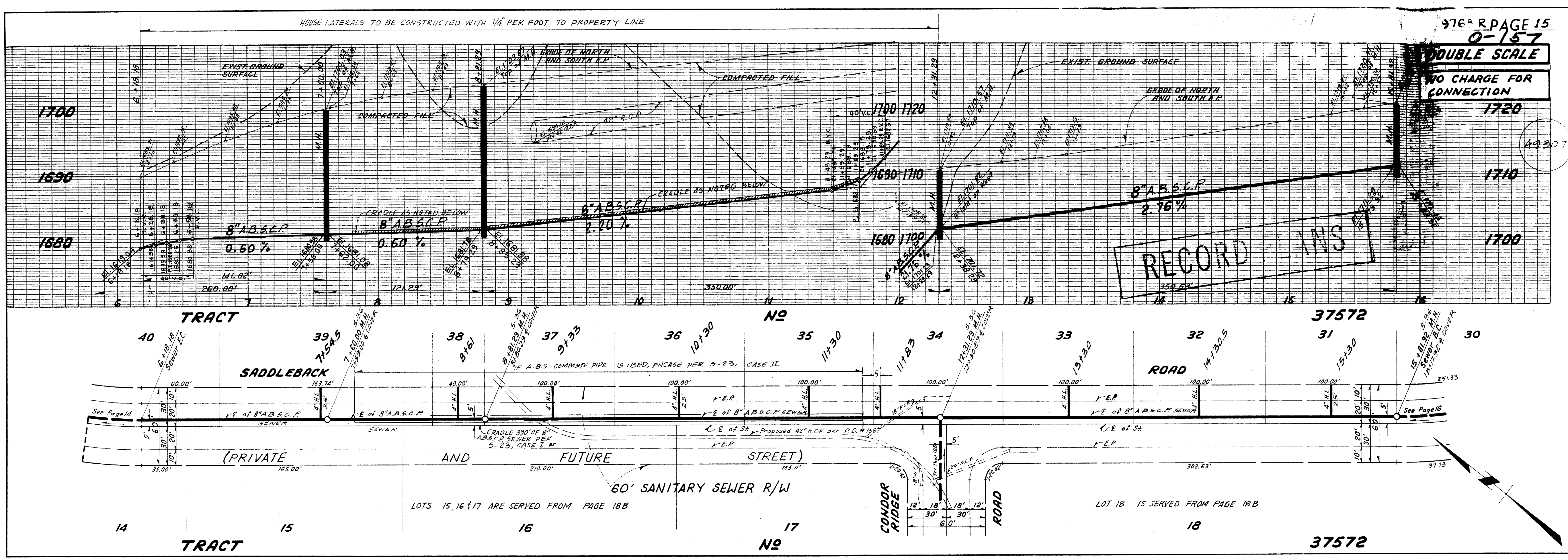
3+30

5+13

5+68

5+77

See Page 15



976-R PAGE 15
0-157
DOUBLE SCALE
NO CHARGE FOR CONNECTION
HOUSE LATERALS TO BE CONSTRUCTED WITH 1/4" PER FOOT TO PROPERTY LINE
EXIST. GROUND SURFACE
COMPACTED FILL
GRADE OF NORTH AND SOUTH E.P.
CRADLE AS NOTED BELOW
8" A.B.S.C.P.
0.60 %
2.20 %
2.76 %
M.H.
1700
1690
1680
1720
1710
RECORD PLANS
TRACT
NO
37572
SADDLEBACK
ROAD
(PRIVATE AND FUTURE STREET)
60' SANITARY SEWER R/W
IF A.B.S. COMPOSITE PIPE IS USED, ENCASE PER S-23, CASE II
CRADLE 390' OF 8" A.B.S.C.P. SEWER PER S-23, CASE I or
LOTS 15, 16 & 17 ARE SERVED FROM PAGE 18B
LOT 18 IS SERVED FROM PAGE 18B
CONDOR RIDGE ROAD
See Page 14
See Page 16
A9307

9768 R PAGE 16
O-158

DOUBLE SCALE

NO CHARGE FOR CONNECTION

49308

RECORD PLANS

37572

8" A.B.S.C.P. 4.00 %

8" A.B.S.C.P. 3.28 %

8" A.B.S.C.P. 5.80 %

IDENTICAL

EXIST. GROUND SURFACE

GRADE OF NORTH AND SOUTH E.P.

COMPACTED FILL

ENCASE AS NOTED BELOW

TRACT 31

TRACT 19

TRACT 18

SADDLEBACK ROAD

CHUCKWAGON PLACE

(PRIVATE AND FUTURE STREET)

60' SANITARY SEWER R/W

℄ Sewer Curve Data
Δ=33° 49' 59"
R=345.00 L=203.72'
T=104.93'

℄ Sewer Curve Data
Δ=33° 49' 59"
R=345.00 L=203.72'
T=104.93'

See Page 15

See Page 17A

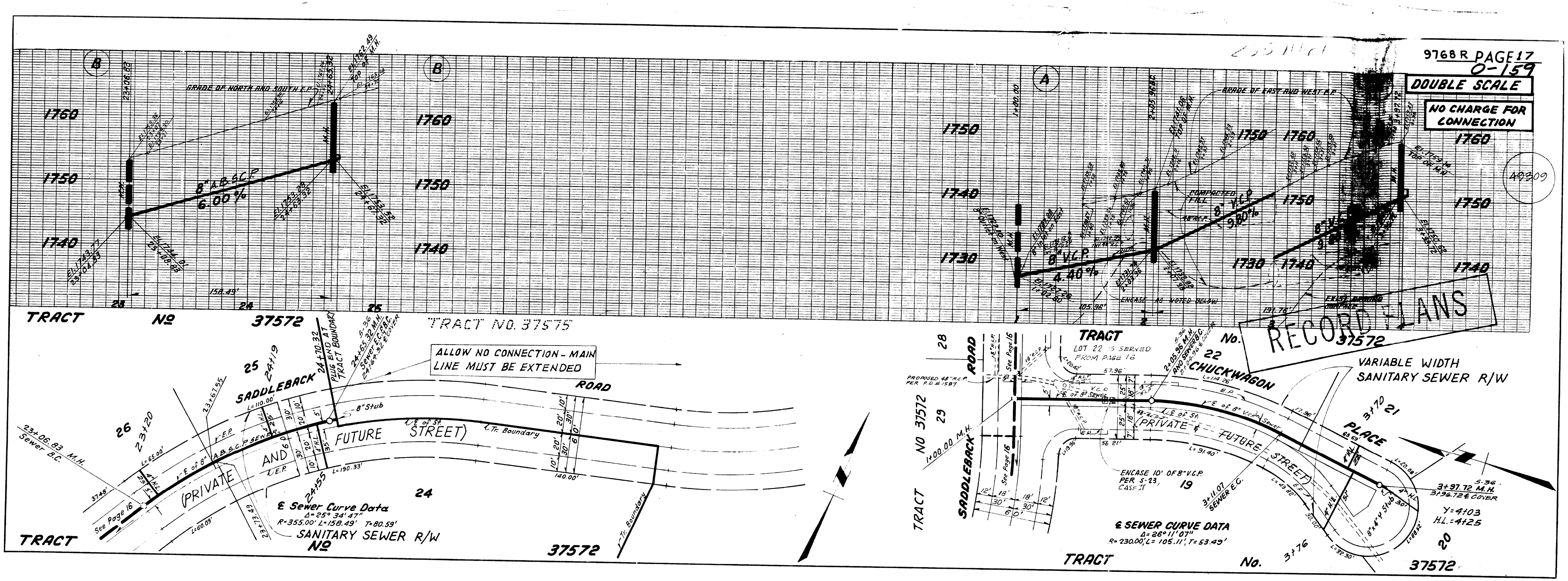
See Page 17B

LOT 19 IS SERVED FROM PAGE 17A

IDENTICAL POINTS

Nº

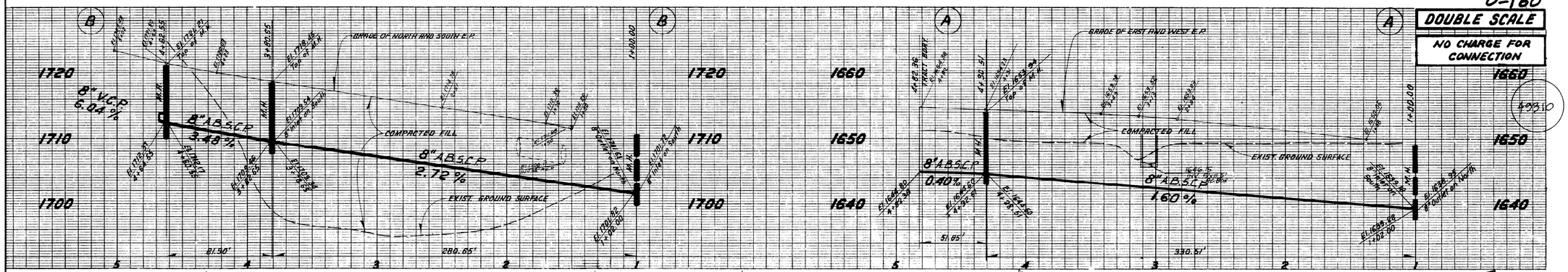
Nº

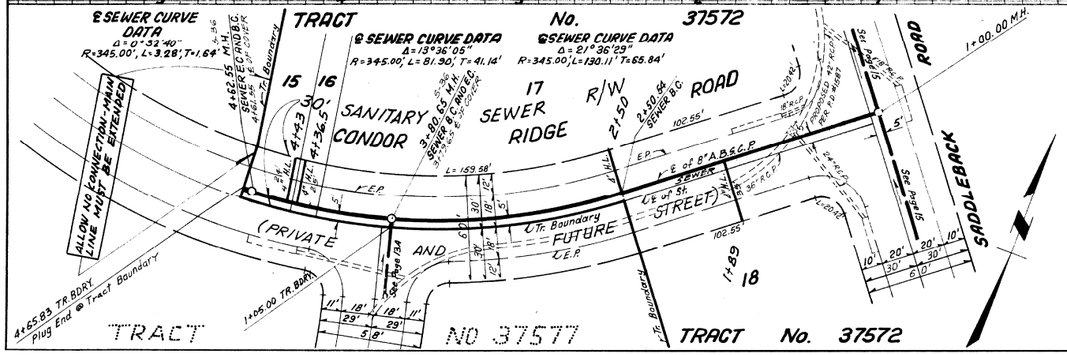

9768 R PAGE 17
0-159
DOUBLE SCALE
NO CHARGE FOR CONNECTION
GRADE OF NORTH AND SOUTH E.P.
GRADE OF EAST AND WEST E.P.
8" A.B.&C.P.
6.00 %
8" V.C.P.
4.40 %
8" V.C.P.
9.80 %
COMPACTED FILL
ENCASE AS NOTED BELOW
1760
1750
1740
1730
TRACT NO 37572
TRACT NO. 37575
ALLOW NO CONNECTION - MAIN LINE MUST BE EXTENDED
SADDLEBACK ROAD
(PRIVATE AND FUTURE STREET)
Sewer Curve Data
Δ=25° 34' 47"
R=355.00' L=158.49' T=80.59'
SANITARY SEWER R/W
23+06.83 M.H. Sewer B.C.
See Page 16
PLUG END AT TRACT BOUNDARY
TRACT
LOT 22 IS SERVED FROM PAGE 16
CHUCKWAGON PLACE
VARIABLE WIDTH SANITARY SEWER R/W
ENCASE 10' OF 8" V.C.P. PER S-23, CASE II
SEWER CURVE DATA
Δ=26° 11' 07"
R=230.00', L=105.11', T=53.49'
1+00.00 M.H.
3+97.72 M.H.
Y=4103
H.L.=4+25
RECORD PLANS
49309

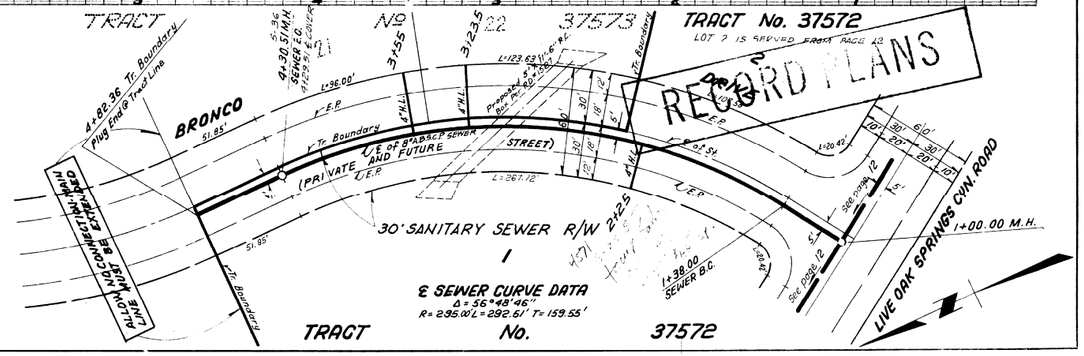
9768R PAGE 18
0-160

DOUBLE SCALE
NO CHARGE FOR CONNECTION

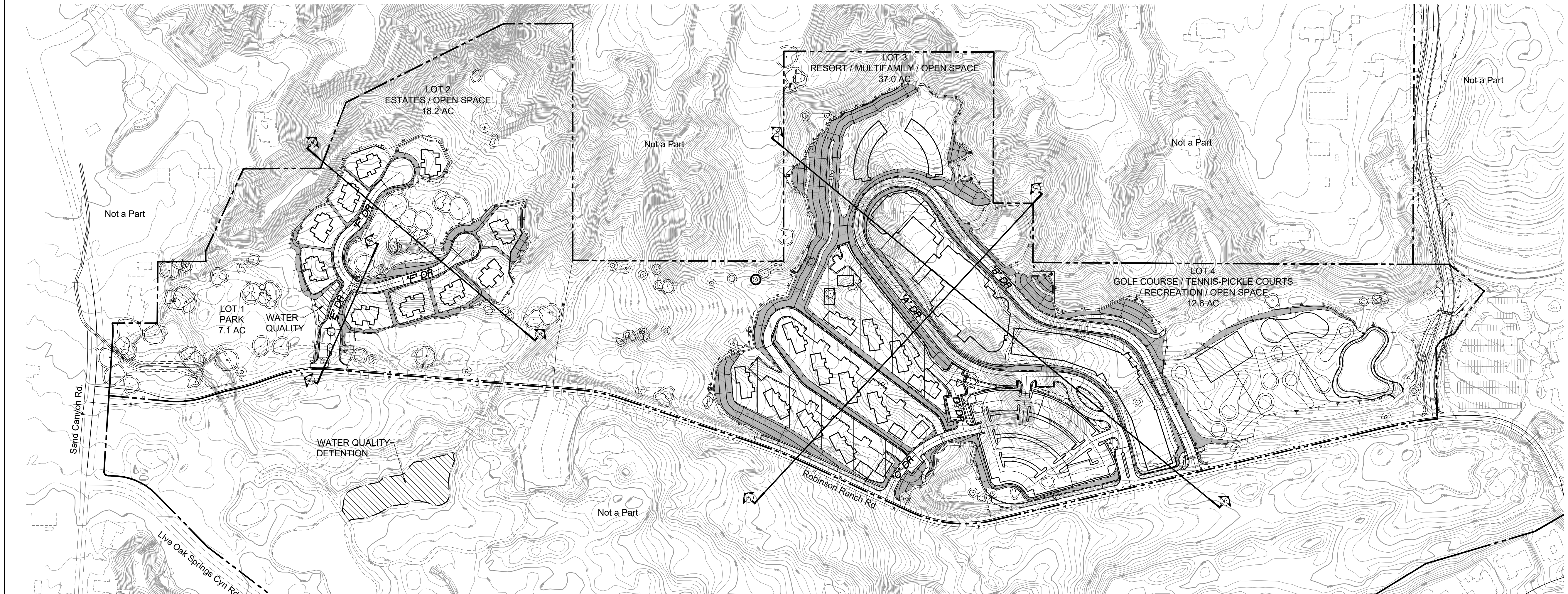
403.10

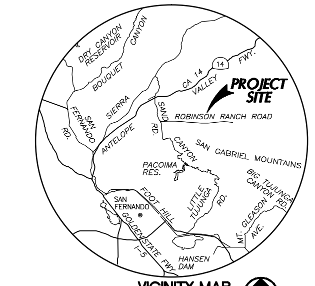






3. VTTM 78248 – Hunsaker & Associates – January 2018





VICINITY MAP
NOT TO SCALE

LEGEND:

- 100 — LOT NO.
- 5000 SF — LOT AREA (SQUARE FEET)
- PAD=1210.0 / O.S. — PAD ELEVATION OR LOT TYPE
- VTTM 78248 BOUNDARY
- EXISTING PARCEL BOUNDARY
- PROPOSED PRIVATE DRIVE
- 67' — PROPOSED LOT LINE
- PROPOSED EASEMENT
- EXISTING EASEMENTS IDENTIFIED BY (3)
- 950 — PROPOSED CONTOUR
- DAYLIGHT LINE
- STORM DRAIN CULVERT
- SD — STORM DRAIN
- S — SANITARY SEWER (SERVICE LOCAL)
- FM — SEWER FORCE MAIN
- W — WATER
- RW — RECYCLED WATER
- W — EXISTING WATER LINE
- E — EXISTING POWER LINE
- FIRE DEPARTMENT ACCESS GATE
- LOW FLOW DIVERSION
- DEBRIS RISER
- RISER
- CATCH BASIN
- (3) SURVEYOR'S NOTES PER "EXCEPTIONS", PER SHT 2
- IMPACTED OAK TREE HERITAGE SIZE LABELED WITH "H"
- ENCROACHED OAK TREE HERITAGE SIZE LABELED WITH "H"
- PRESERVED OAK TREE HERITAGE SIZE LABELED WITH "H"
- EXISTING POWER POLE
- PROPOSED DRIVEWAY
- WATER TANK & STORM DRAIN ACCESS ROAD
- TRAIL, CONC OR DG PER PLAN
- SIGHT DISTANCE LINE (415')

BC	BEGIN CURVE
BVC	BEGIN VERTICAL CURVE
CONC	CONCRETE
DG	DECOMPOSED GRANITE
EC	END CURVE
ESMT	EASEMENT
EVC	END OF VERTICAL CURVE
EX	EXISTING
GB	GRADE BREAK
HP	HIGH POINT
L	LENGTH
LDZ	LANDSCAPE DEVELOPMENT ZONE
LP	LOW POINT
MIN	MINIMUM
O.S.	OPEN SPACE
P.F.	PUBLIC FACILITY
PRC	POINT REVERSE CURVE
PRVC	POINT REVERSE VERTICAL CURVE
PROP	PROPOSED
PVI	POINT OF VERTICAL INTERSECTION
PVT	PRIVATE
R	RADIUS
REC	RECREATION
SF	SQUARE FEET
SD	STORM DRAIN
SS	SANITARY SEWER
SWK	SIDEWALK
WS	WATER SURFACE

GENERAL NOTES:

1. GRADE ELEVATIONS SHOWN ON THE VTTM ARE APPROXIMATE. CHANGES IN THE ELEVATIONS DEPICTED ON THE TENTATIVE MAP WHICH WILL NOT SUBSTANTIALLY ALTER THE APPROVED GRADING PLAN OR RESULT IN PAD ELEVATION CHANGES OF MORE THAN 10 FEET ARE PERMITTED SUBJECT TO THE PROVISIONS OF SECTION 5.2 OF THE NEWHALL RANCH
2. LOT LINES CAN BE ADJUSTED PROVIDED NO ADDITIONAL LOTS ARE CREATED. THE DEGREE OF ADJUSTMENT SHALL BE CONSISTENT WITH THE INTENT OF THE SUBDIVISION MAP APPROVAL, THE SUBDIVISION MAP ACT AND TO THE SATISFACTION OF DRP.
3. ALIGNMENT AND GEOMETRICS OF STREETS AND TRAILS ARE APPROXIMATE. ADJUSTMENTS TO STREETS CAN BE MADE PROVIDED THE DEPARTMENT OF PUBLIC WORKS AND DRP DETERMINE THAT THE ADJUSTMENTS ARE CONSISTENT WITH THE INTENT OF THE SUBDIVISION APPROVAL. ADJUSTMENTS TO TRAILS CAN BE MADE WITH APPROVAL BY DRP AND THE PARKS AND RECREATION DEPARTMENT.
4. BUILDING FOOTPRINTS SHOWN ON THE TENTATIVE MAP OR ACCOMPANYING SITE PLAN EXHIBIT MAPS ARE ONLY FOR ILLUSTRATIVE PURPOSES. RELOCATION OF BUILDINGS, OR ADJUSTMENTS IN BUILDING SQUARE FOOTAGE, NUMBER OF BUILDINGS, PARKING REQUIREMENTS AND OTHER FEATURES WHICH WILL NOT RESULT IN AN INCREASE IN TOTAL SQUARE FOOTAGE OR THE NUMBER OF DWELLING UNITS ARE PERMITTED SUBJECT TO THE PROVISIONS OF THE SECTION 5.2 OF THE NEWHALL RANCH SPECIFIC PLAN.
5. PERMISSION IS REQUESTED TO FILE "LARGE LOT" TRACT MAPS OF 20 ACRES OR MORE (WITHOUT IMPROVEMENTS) AS SPECIFIED IN THE COUNTY SUBDIVISION CODE.
6. THE RECORDATION OF A "LARGE LOT" PARCEL MAP SHALL BE CONSIDERED THE FILING OF THE FIRST UNIT FOR THE PURPOSE OF TIME EXTENSIONS PURSUANT TO THE SUBDIVISION MAP ACT. HOWEVER, THE RECORDATION OF A "LARGE LOT" PARCEL MAP SHALL NOT REQUIRE FULFILLMENT OF INFRASTRUCTURE REQUIREMENTS–IF CONSISTENT WITH THE COUNTY SUBDIVISION ORDINANCE–NOR THE DEDICATION OF PARKLAND OR IN LIEU PARK FEES.
7. PERMISSION IS REQUESTED TO COMBINE LOTS TO THE SATISFACTION OF DRP AND PUBLIC WORKS.
8. PERMISSION IS REQUESTED FOR UNIT PHASING TO THE SATISFACTION OF DRP AND PUBLIC WORKS.
9. PERMISSION IS REQUESTED TO RECORD ADDITIONAL OPEN SPACE LOTS TO THE SATISFACTION OF DRP AND PUBLIC WORKS.
10. PERMISSION IS REQUESTED TO RECORD ADDITIONAL UTILITY LOTS PROVIDED MAINTENANCE EASEMENTS ARE GRANTED TO THE SATISFACTION OF THE DRP.
11. THE LOCATIONS OF APPURTENANT STRUCTURES (E.G., PASEOS, PEDESTRIAN BRIDGES, TRANSIT SHELTERS, WATER QUALITY BASINS, WATER TANKS, ETC.) MAY BE RELOCATED TO THE SATISFACTION OF DPW AND DRP.
12. PERMISSION TO RECORD JOINT ACCESS EASEMENTS (20' WIDE) AS LOTS REQUESTED.
13. REQUEST PERMISSION TO PHASE MASS GRADE TO THE SATISFACTION OF DRP AND DPW AND THE PROVISIONS OF THE COUNTY CODE, APPROVED PROJECT CONDITIONS AND MITIGATION MEASURES.
14. PROPOSED STREET GRADING IS APPROXIMATE ONLY AND SUBJECT TO ADJUSTMENTS PENDING DETERMINATION OF FINAL DEVELOPMENT LAYOUT AND PLANS.
15. PROPERTY LINE RETURN RADII OF 13 FT. AT ALL LOCAL STREET INTERSECTIONS AND 27 FT AT THE INTERSECTION OF LOCAL STREETS WITH PLANNED HIGHWAYS (THOSE ON COUNTY HIGHWAY PLAN) AND WHERE ALL PLANNED HIGHWAYS INTERSECT OR WHERE ONE OF THE ROADS SERVES A COMMERCIAL OR INDUSTRIAL DEVELOPMENT PLUS ADDITIONAL RIGHT OF WAY FOR CORNER CUT–OFF TO MEET CURRENT GUIDELINES OF THE AMERICANS WITH DISABILITIES ACT (ADA) TO THE SATISFACTION OF PUBLIC WORKS.
16. MODIFIED STREET CROSS–SECTIONS AS SHOWN ON VESTING TENTATIVE TRACT MAP ARE REQUESTED. HOWEVER, PERMISSION IS SOUGHT TO CONSTRUCT STANDARD STREET CROSS–SECTIONS AT THE DISCRETION OF THE SUBDIVIDER.
17. ALL DIMENSIONS SHOWN ARE APPROXIMATE.
18. TOPOGRAPHY PROVIDED BY: CITY OF SANTA CLARITA
    DATE OF TOPOGRAPHY: 2006
    PHONE: N/A
19. ALL DRAINAGE TO BE MAINTAINED BY LACFCD, UNLESS OTHERWISE NOTED ON PLAN.
20. REQUEST STREET FRONTAGE WAIVER FOR LOTS FRONTING ON PRIVATE STREETS AND PRIVATE DRIVES PER CONDITIONS OF APPROVAL.
21. PERMISSION IS REQUESTED TO ALLOW FLAG LOTS PER CONDITIONS OF APPROVAL.
22. GRADING OF VTTM 78248 MAY BE DONE IN SUB–PHASES OVER TIME BUT SUCH GRADING WILL STILL BE BALANCED WITHIN THE GRADING LIMITS IDENTIFIED ON THE TENTATIVE TRACT MAP . ALL GRADING OF SLOPES WILL BE PERFORMED AS ENGINEERED GRADING. THE LIMIT OF A GRADING SUB–PHASE WILL BE ESTABLISHED TO ACHIEVE A BALANCED EARTHWORK FOR THAT SUB–PHASE AND MAY BE EXTEND BEYOND THE LIMITS OF A PARTICULAR FINAL UNIT MAP BOUNDARY IN ORDER TO ACHIEVE A PHASED GRADING BALANCE. AN INTERIM HYDROLOGY REPORT WILL BE PREPARED FOR EACH PHASE OF GRADING AREA AND REQUIRED DRAINAGE DEVICES WILL BE PROVIDED TO SUPPORT THE PHASED GRADING. DRAINAGE AND EROSION CONTROL FACILITIES WILL BE PROVIDED TO THE SATISFACTION OF DWP.

SPECIAL NOTES:

1. WATER QUALITY BASINS WILL PROVIDE FOR TREATMENT OF STORM WATER RUN OFF.
2. THE WATER QUALITY BASINS SHALL BE DEDICATED TO THE COUNTY WHEN COMPLETED AND ACCEPTED.
3. PROPOSED RECLAIMED WATER LINES WILL BE LOCATED IN PUBLIC STREETS AND TRAILS.

UTILITY PROVIDERS

PHONE: AT&T
SCHOOLS: SULPHUR SPRING UNION SCHOOL DISTRICT
ELECTRIC: SOUTHERN CALIFORNIA EDISON
SEWER TREATMENT: LA COUNTY SANITATION DISTRICT
GAS: SOUTHERN CALIFORNIA GAS COMPANY
WATER: SANTA CLARITA WATER DIVISION
POLICE PROTECTION: LA COUNTY SHERIFF
FIRE PROTECTION: LA COUNTY FIRE

SURVEY NOTES:

***VERTICAL DATUM:**

BENCH MARK: B.M. NO. L7143
LA CO BM BR DISK MRK'D 7143, IN E.
CURB SAND CYN RD. @SE COR COMET WAY.
LOS ANGELES CO. ELEV. 1573.398
*DATUM USED FOR FIELD REFERENCE AND VERIFICATION

AERIAL PLANIMETRY:

TOPOGRAPHY PROVIDED BY: CITY OF SANTA CLARITA
DATE OF TOPOGRAPHY: 2006
PHONE: N/A

LEGAL DESCRIPTION:

REAL PROPERTY IN THE CITY OF SANTA CLARITA, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

LOT 79 OF AMENDING MAP OF TRACT NO. 52004, IN THE CITY OF SANTA CLARITA, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 1253 PAGES 16 TO 34 INCLUSIVE OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT FROM THAT PORTION OF SAID LAND LYING WITHIN THAT PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 4 NORTH, RANGE 15 WEST, SAN BERNARDINO MERIDIAN, AS DESCRIBED IN THE DEED REFERRED TO HEREIN AN UNDIVIDED ONE– HALF OF ALL OIL, GAS AND OTHER MINERALS IN AND UNDER SAID LAND, AS GRANTED TO ALFRED J. KOLSCHOWSKY AND MARGARET KOLSCHOWSKY, HUSBAND AND WIFE, BY DEED RECORDED MARCH 1, 1949 AS INSTRUMENT NO. 1109 IN BOOK 29480 PAGE 175, OFFICIAL RECORDS.

EXCEPT FROM THAT PORTION OF SAID LAND LYING WITHIN THAT PORTION OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER AND THAT PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 4 NORTH, RANGE 15 WEST, SAN BERNARDINO MERIDIAN, AS DESCRIBED IN THE DEED REFERRED TO HEREIN ONE–HALF OF ALL OIL, GAS, PETROLEUM, MINERALS AND HYDROCARBON SUBSTANCES IN OR UNDER SAID LAND AS RESERVED BY RUTH LOUISE MILLHITE, A MARRIED WOMAN WHO ACQUIRED TITLE AS RUTH LOUISE DAVIS AND R. LOUISE DAVIS, A SINGLE WOMAN BY DEED RECORDED APRIL 9, 1951 AS INSTRUMENT NO. 818 IN BOOK 35996 PAGE 22 OFFICIAL RECORDS.

EXCEPT FROM THAT PORTION OF SAID LAND LYING WITHIN THAT PORTION OF THE SOUTHEAST QUARTER OF SECTION 24 AND LYING WITHIN THAT PORTION OF THAT NORTHEAST QUARTER AND THE SOUTHEAST QUARTER OF SECTION 25, BOTH IN TOWNSHIP 4 NORTH, RANGE 15 WEST, SAN BERNARDINO MERIDIAN, AS DESCRIBED IN THE DEED REFERRED TO HEREIN ONE–HALF OF ALL MINERAL AND OIL RIGHTS IN SAID LAND, AS RESERVED BY ANTHONY LAWRENCE, IN DEED RECORDED OCTOBER 22, 1953 AS INSTRUMENT NO. 1382 IN BOOK 42985 PAGE 190, OFFICIAL RECORDS.

EXCEPT FROM THAT PORTION OF SAID LAND LYING WITHIN THAT PORTION OF THE WEST 15 ACRES OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND LYING WITHIN THAT PORTION OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER IN SECTION 24 TOWNSHIP 4 NORTH, RANGE 15 WEST, SAN BERNARDINO MERIDIAN, AS DESCRIBED IN THE DEEDS REFERRED TO HEREIN SIXTY–TWO AND ONE–HALF PERCENT OF ALL OF THE OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES IN, UPON AND UNDER SAID REAL ESTATE, AS RESERVED IN DEEDS FROM FRANK M. FERRELL AND DOROTHY E. FERRELL, HIS WIFE, RECORDED MAY 10, 1956 AS INSTRUMENT NOS. 1585 AND 1586 IN BOOK 51145 PAGES 6 AND 7 RESPECTIVELY OFFICIAL RECORDS.

EXCEPT FROM THAT PORTION OF SAID LAND LYING WITHIN THAT PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 4 NORTH, RANGE 15 WEST, SAN BERNARDINO MERIDIAN, AS DESCRIBED IN THE DEED REFERRED TO HEREIN 50 PERCENT OF OIL, GAS, MINERAL, ASPHALTUM AND OTHER HYDROCARBON SUBSTANCES SAID PROPERTY OR THAT MAY BE PRODUCED THEREON BUT WITHOUT THE RIGHT OF ENTRY ABOVE THE DEPTH OF 500 FEET BELOW THE SURFACE OF SAID LAND, AS RESERVED BY FRED KOLSCHOWSKY AND MARGUERITE F. KOLSCHOWSKY, HUSBAND AND WIFE, IN DEED RECORDED MARCH 8, 1961 AS INSTRUMENT NO. 932 IN BOOK D–1148 PAGE 403, OFFICIAL RECORDS.

PROJECT SUMMARY:

GROSS AREA – 74.9 AC
TOTAL LOTS – 4 TOTAL D.U. – 392
EXISTING ZONING – OPEN SPACE
PROPOSED ZONING – REGIONAL COMMERCIAL
GENERAL PLAN LAND USE – VISITOR SERVING / RESORT

ASSESSOR'S PARCEL NUMBER (APN)

2840–022–025

APPROXIMATE EARTHWORK QUANTITIES:

VTTM 78248: (WITHIN TRACT BOUNDARY)

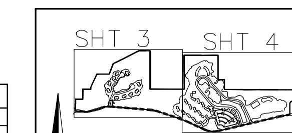
	CUT	FILL	NET
RAW VOLUME=	241,000 CY	201,500 CY	39,500 CY CUT
*TOTAL EXCAVATION=	511,000 CY	510,000 CY	*1000 CY CUT

TOTALS:
*INCLUDES SOILS ENGINEERS FINDINGS AND RECOMENDATIONS FOR SHRINKAGE, BED ROCK, BULKING, SCARIFICATION AND REMEDIAL GRADING.

LOT NUMBERS	TYPE (USE)	DWELLING UNITS OR NON–RESIDENTIAL	DEVELOPED ACRES	OPEN SPACE ACRES	TOTAL ACRES
1	PARK	0	0	7.1	7.1
2	1–STORY SINGLE FAMILY, OAK TREE PRESERVE & OPEN SPACE	10	5.7	12.5	18.2
3	HOTEL, RESORT SPA, RESTAURANTS, 2–STORY MULTI–FAMILY & OPEN SPACE	382	26.0	11.0	37.0
4	9 HOLE GOLF COURSE, TENNIS/PICKLE COURTS, RECREATION AREA & OPEN SPACE	000	0	12.6	12.6
		392	31.7	43.2	74.9

SHEET INDEX

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	DETAILS AND STREET / ROAD SECTIONS SECTIONS AND EASEMENT DESCRIPTIONS
3 AND 4	SAND CANYON RESORT



KEY MAP
NOT TO SCALE

DESIGNED: JHF, PDO
DRAFTED: PDO
CHECKED: JHF

NO.		REVISIONS	DATE	BY

OWNER DEVELOPER:
SAND CANYON COUNTRY CLUB
27734 SAND CANYON ROAD
SANTA CLARITA, CA, 91387
TELEPHONE: (213) 700–6883
OWNER: STEVE KIM

REGISTERED PROFESSIONAL ENGINEER · JASON H. FUKUMITSU · No. 40695 · CIVIL · STATE OF CALIFORNIA

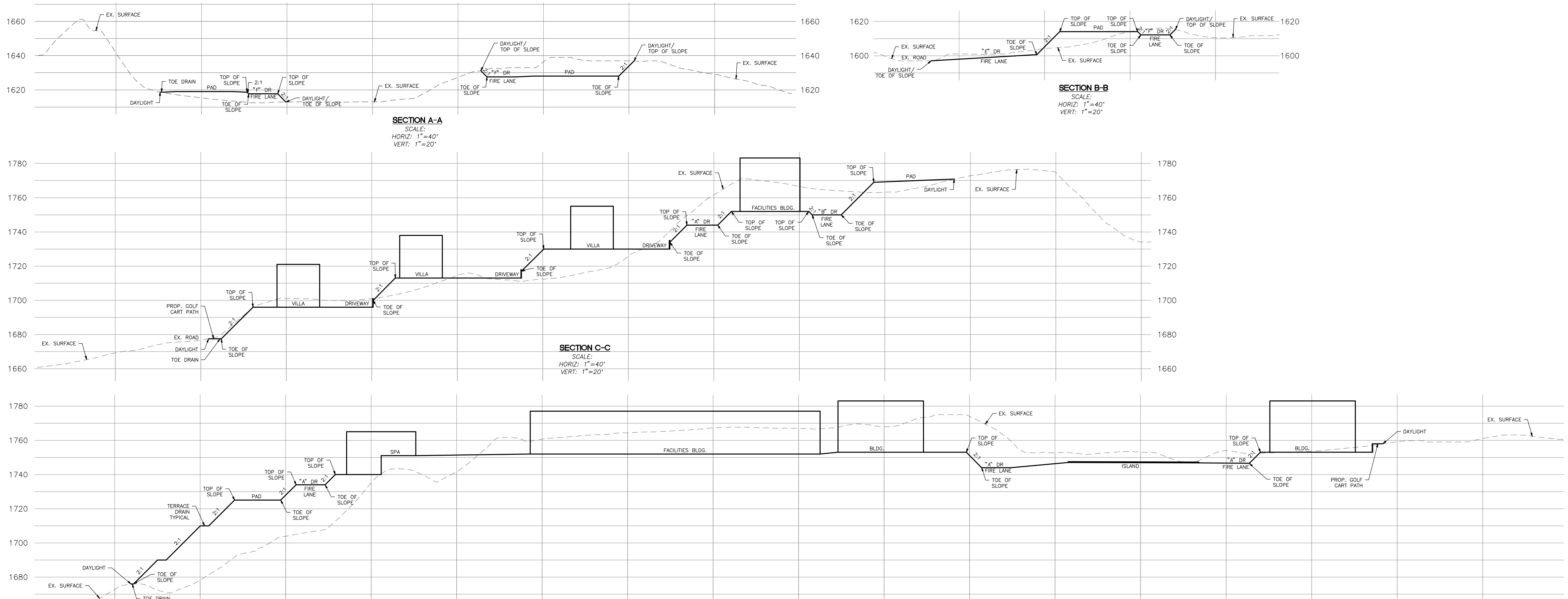
PLANS PREPARED BY:
HUNSAKER & ASSOCIATES LOS ANGELES, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
26074 Avenue Hall, Ste 23 ▪ Valencia, CA 91355
PH: (661) 294-2211 ▪ FX: (661) 294-9890
JASON H. FUKUMITSU DATE

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 78248
TITLE SHEET

IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

SCALE: PER PLAN
DATE: 09/13/2018
JOB No. 0261-001-001
SHEET 1 OF 4 SHEETS

G:\Sand Canyon Resort\Tentative\HSC010-01_TTM Sand Cyn Resort.dwg Plotted on Sep 13, 2018–5:20pm by paulo



SECTION A-A
SCALE:
HORIZ: 1"=40'
VERT: 1"=20'

SECTION B-B
SCALE:
HORIZ: 1"=40'
VERT: 1"=20'

SECTION C-C
SCALE:
HORIZ: 1"=40'
VERT: 1"=20'

SECTION D-D
SCALE:
HORIZ: 1"=40'
VERT: 1"=20'

SECTIONS

DISPOSITION LEGEND:

A	ABANDON
P	PROTECT IN PLACE
Q	QUIT CLAIM
R	REMOVE
RE	RELOCATE
RM	TO REMAIN
IN	INDETERMINATE IN NATURE
L	LEASE (OIL, GAS, MINERALS)
NA	NOT APPLICABLE TO PROJECT
LA	LINE OF SIGHT AIR SPACE EASEMENT

EASEMENTS

3. AN EASEMENT FOR POLES AND LINES AND INCIDENTAL PURPOSES, RECORDED AUGUST 14, 1956 AS INSTRUMENT NO. 3532 IN BOOK 52019, PAGE 419 OF OFFICIAL RECORDS.
IN FAVOR OF:SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION AFFECTS: AS DESCRIBED THEREIN

SURVEYOR'S NOTE: PLOTTED HEREON AS ⟨3⟩

4. AN EASEMENT SHOWN OR DEDICATED ON THE MAP AS REFERRED TO IN THE LEGAL DESCRIPTION FOR: SANITARY SEWER AND SANITARY SEWER INGRESS AND EGRESS, PRIVATE DRIVEWAY AND FIRELANE AND INCIDENTAL PURPOSES.

SURVEYOR'S NOTE: PLOTTED HEREON AS ⟨4⟩

5. ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM SAND CANYON ROAD, HAVE BEEN DEDICATED OR RELINQUISHED ON THE FILED MAP.

6. THE FOLLOWING MATTERS SHOWN OR DISCLOSED BY THE FILED OR RECORDED MAP REFERRED TO IN THE LEGAL DESCRIPTION: WE HEREBY DEDICATE TO THE CITY OF SANTA CLARITA THE RIGHT TO RESTRICT THE ERECTION OF BUILDINGS OR OTHER STRUCTURES WITHIN THOSE AREAS DESIGNATED ON THE MAP AS GEOLOGICAL RESTRICTED USE OR FLOOD HAZARD AREAS.

WE ALSO HEREBY DEDICATE TO THE CITY OF SANTA CLARITA THE RIGHT TO RESTRICT RESIDENTIAL CONSTRUCTION OVER ALL OPEN SPACE.

DRAINAGE NOTES: LOT OWNERS IN THIS SUBDIVISION SHALL NOT INTERFERE WITH THE ESTABLISHED DRAINAGE OF THIS SUBDIVISION. OWNERS OF LOTS SHALL NOT ERECT WALLS OR OTHER SOLID CONSTRUCTION WHICH WILL OBSTRUCT DRAINAGE EXCEPT AS APPROVED BY THE CITY ENGINEER.

OPEN SPACE GOLF COURSE NOTE: IF ANY OF THE GOLF COURSE LOTS ARE CONVEYED, ACCESS SHALL BE AFFORDED BY MEANS OF RESERVATION OF GRANT IN THE DEEDS OR DEEDS OF CONVEYANCE.

SURVEYOR'S NOTE: GEOLOGICAL RESTRICTED USE AREA IS BLANKET OVER LOT 79

SURVEYOR'S NOTE: FLOOD HAZARD AREA IS PLOTTED HEREON AS ⟨6⟩

7. AN EASEMENT FOR FLOOD CONTROL PURPOSES AND INCIDENTAL PURPOSES, RECORDED OCTOBER 10, 2000 AS INSTRUMENT NO. 00-1585068 OF OFFICIAL RECORDS.
IN FAVOR OF: LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, A BODY CORPORATE AND POLITIC AFFECTS:AS DESCRIBED THEREIN

DOCUMENT RE-RECORDED JULY 30, 2002 AS INSTRUMENT NO. 02-1777823 OF OFFICIAL RECORDS.

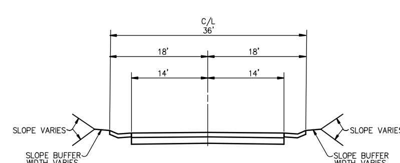
SURVEYOR'S NOTE: FLOOD CONTROL EASEMENT PLOTTED HEREON AS ⟨7⟩

SURVEYOR'S NOTE: TEMPORARY CONSTRUCTION EASEMENTS PLOTTED HEREON AS ⟨7A⟩

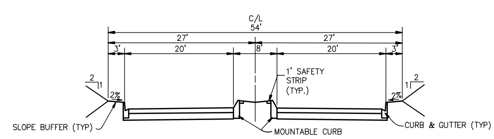
8. THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "ROAD EASEMENT AND MAINTENANCE AGREEMENT" RECORDED OCTOBER 31, 2000 AS INSTRUMENT NO. 00-1700352 OF OFFICIAL RECORDS.

9. AN EASEMENT FOR WATER LINE AND INCIDENTAL PURPOSES, RECORDED DECEMBER 11, 2000 AS INSTRUMENT NO. 00-1923801 OF OFFICIAL RECORDS.
IN FAVOR OF:SANTA CLARITA WATER COMPANY, A CORPORATION, ITS SUCCESSORS AND ASSIGNS AFFECTS:AS DESCRIBED THEREIN

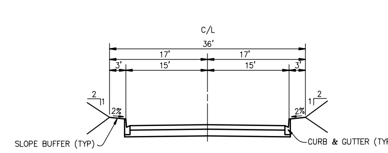
SURVEYOR'S NOTE: PLOTTED HEREON AS ⟨9⟩



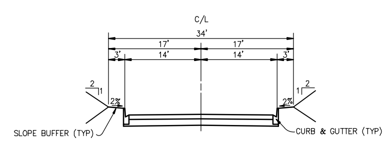
(1) ROBINSON RANCH ROAD (PRIVATE DR)
NOT TO SCALE
EXISTING



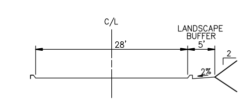
(2) MAIN ENTRANCE 54'
NOT TO SCALE
'A' DRIVE



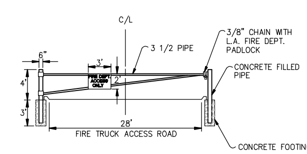
(3) SECONDARY ENTRANCE 36'
NOT TO SCALE
'B' DRIVE



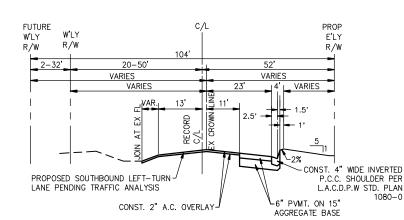
(4) PRIVATE DRIVE 34'
NOT TO SCALE
'A', 'B', 'C', 'D', 'E' AND 'F' DRIVES



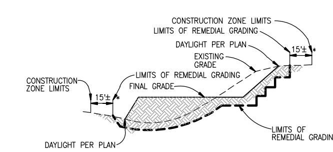
(5) FIRE TRUCK ACCESS ROAD
NOT TO SCALE
'B' DRIVE



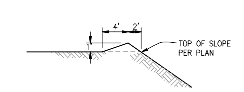
(6) FIRE TRUCK ACCESS SECURITY GATE
NOT TO SCALE
'B' DRIVE ENTRANCES



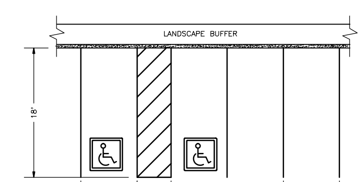
(7) EXISTING SAND CANYON ROAD
NOT TO SCALE



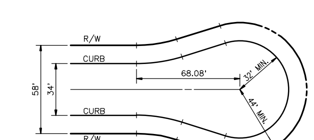
TYPICAL GRADING IMPACTS
NOT TO SCALE
* DIMENSION MAY VARY DEPENDING UPON ACTUAL FIELD CONDITIONS



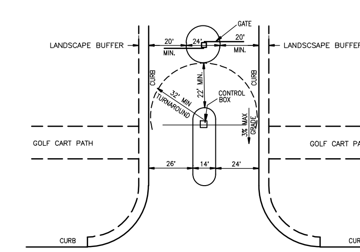
TOP OF SLOPE EDGE BERM
NOT TO SCALE



TYPICAL PARKING W/HANDICAP STALLS
NOT TO SCALE

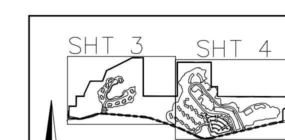


STANDARD CUL-DE-SAC PER CITY OF SANTA CLARITA
NOT TO SCALE



TYPICAL GATE DETAIL WITHOUT GUARD SHACK
NOT TO SCALE
'G' DRIVE

NOTE: DIMENSIONS SHOWN HEREON ARE MINIMUM REQUIREMENTS AND SUBJECT TO CHANGE. FINAL DIMENSIONS WILL BE BASED UPON TRAFFIC ENGINEER'S AND FIRE DEPARTMENT RECOMMENDATIONS



KEY MAP
NOT TO SCALE

DESIGNED: JHF, PDO				
DRAFTED: PDO				
CHECKED: JHF	NO.	REVISIONS	DATE	BY

OWNER DEVELOPER:
SAND CANYON COUNTRY CLUB
27734 SAND CANYON ROAD
SANTA CLARITA, CA, 91387
TELEPHONE: (213) 700-6883
OWNER: STEVE KIM

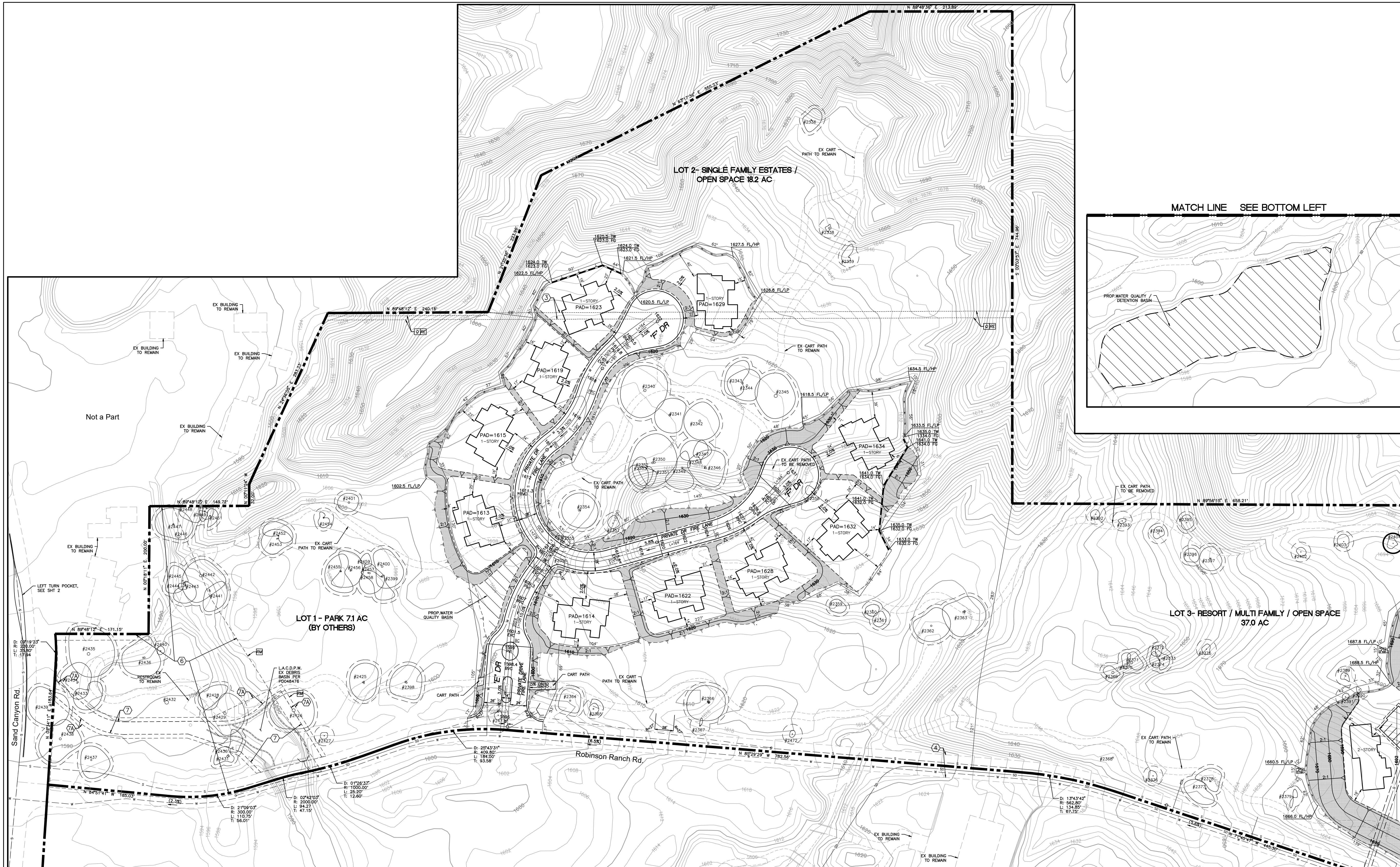
REGISTERED PROFESSIONAL ENGINEER JASON H. FUKUMITSU No. 40695 CIVIL STATE OF CALIFORNIA

PLANS PREPARED BY:
HUNSAKER & ASSOCIATES LOS ANGELES, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
26074 Avenue Hall, Ste 23 ▪ Valencia, CA 91355
PH: (661) 294-2211 ▪ FX: (661) 294-9890
JASON H. FUKUMITSU DATE

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 78248
EASEMENT DESCRIPTION
DETAILS AND SECTIONS
IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

SCALE: PER PLAN
DATE: 09/05/2018
JOB No. 0261-001-001
SHEET 2 OF 4 SHEETS

G:\Sand Canyon Resort\Tentative\HSC010-02_TTM Sand Cyn Resort.dwg



DISPOSITION LEGEND:

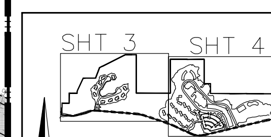
A	ABANDON
P	PROTECT IN PLACE
Q	QUIT CLAIM
R	REMOVE
RE	RELOCATE
RM	TO REMAIN
IN	INDETERMINATE IN NATURE
L	LEASE (OIL, GAS, MINERALS)
NA	NOT APPLICABLE TO PROJECT
LA	LINE OF SIGHT AIR SPACE EASEMENT

LEGEND:

100	LOT NO.
5000 SF	LOT AREA (SQUARE FEET)
PAD=1210.0 O.S.	PAD ELEVATION OR LOT TYPE
	VTTM 78248 BOUNDARY
	EXISTING PARCEL BOUNDARY
	PROPOSED PRIVATE DRIVE
67'	PROPOSED LOT LINE
	PROPOSED EASEMENT
	EXISTING EASEMENTS IDENTIFIED BY (3)
950	PROPOSED CONTOUR
	DAYLIGHT LINE
	STORM DRAIN CULVERT
SD	STORM DRAIN
S	SANITARY SEWER (SERVICE LOCAL)
FM	SEWER FORCE MAIN
W	WATER
RW	RECYCLED WATER
W	EXISTING WATER LINE
E	EXISTING POWER LINE
	FIRE DEPARTMENT ACCESS GATE
	LOW FLOW DIVERSION
	DEBRIS RISER
	RISER
	CATCH BASIN
(3)	SURVEYOR'S NOTES PER "EXCEPTIONS", PER SHT 2
	IMPACTED OAK TREE HERITAGE SIZE LABELED WITH "H"
	ENCROACHED OAK TREE HERITAGE SIZE LABELED WITH "H"
	PRESERVED OAK TREE HERITAGE SIZE LABELED WITH "H"
	EXISTING POWER POLE
	PROPOSED DRIVEWAY
	WATER TANK & STORM DRAIN ACCESS ROAD
	TRAIL, CONC OR DG PER PLAN
	SIGHT DISTANCE LINE (415')

BC	BEGIN CURVE
BVC	BEGIN VERTICAL CURVE
CONC	CONCRETE
DG	DECOMPOSED GRANITE
EC	END CURVE
ESMT	EASEMENT
EVC	END OF VERTICAL CURVE
EX	EXISTING
GB	GRADE BREAK
HP	HIGH POINT
L	LENGTH
LDZ	LANDSCAPE DEVELOPMENT ZONE
LP	LOW POINT
MIN	MINIMUM
O.S.	OPEN SPACE
P.F.	PUBLIC FACILITY
PRC	POINT REVERSE CURVE
PRVC	POINT REVERSE VERTICAL CURVE
PROP	PROPOSED
PVI	POINT OF VERTICAL INTERSECTION
PVT	PRIVATE
R	RADIUS
REC	RECREATION
SF	SQUARE FEET
SD	STORM DRAIN
SS	SANITARY SEWER
SWK	SIDEWALK
WS	WATER SURFACE

NOTE:
EASEMENTS FOR INGRESS/EGRESS WILL BE BASED ON FINAL SITE PLAN AND DEDICATED ON THE FINAL TRACT MAP.



KEY MAP
NOT TO SCALE

FEET 40' 20' 0 40' 80'
INCHES 1/2 0 1 2

DESIGNED: JHF, PDO
DRAFTED: PDO
CHECKED: JHF

NO.		REVISIONS	DATE	BY

OWNER DEVELOPER:
SAND CANYON COUNTRY CLUB
27734 SAND CANYON ROAD
SANTA CLARITA, CA, 91387
TELEPHONE: (213) 700-6883
OWNER: STEVE KIM

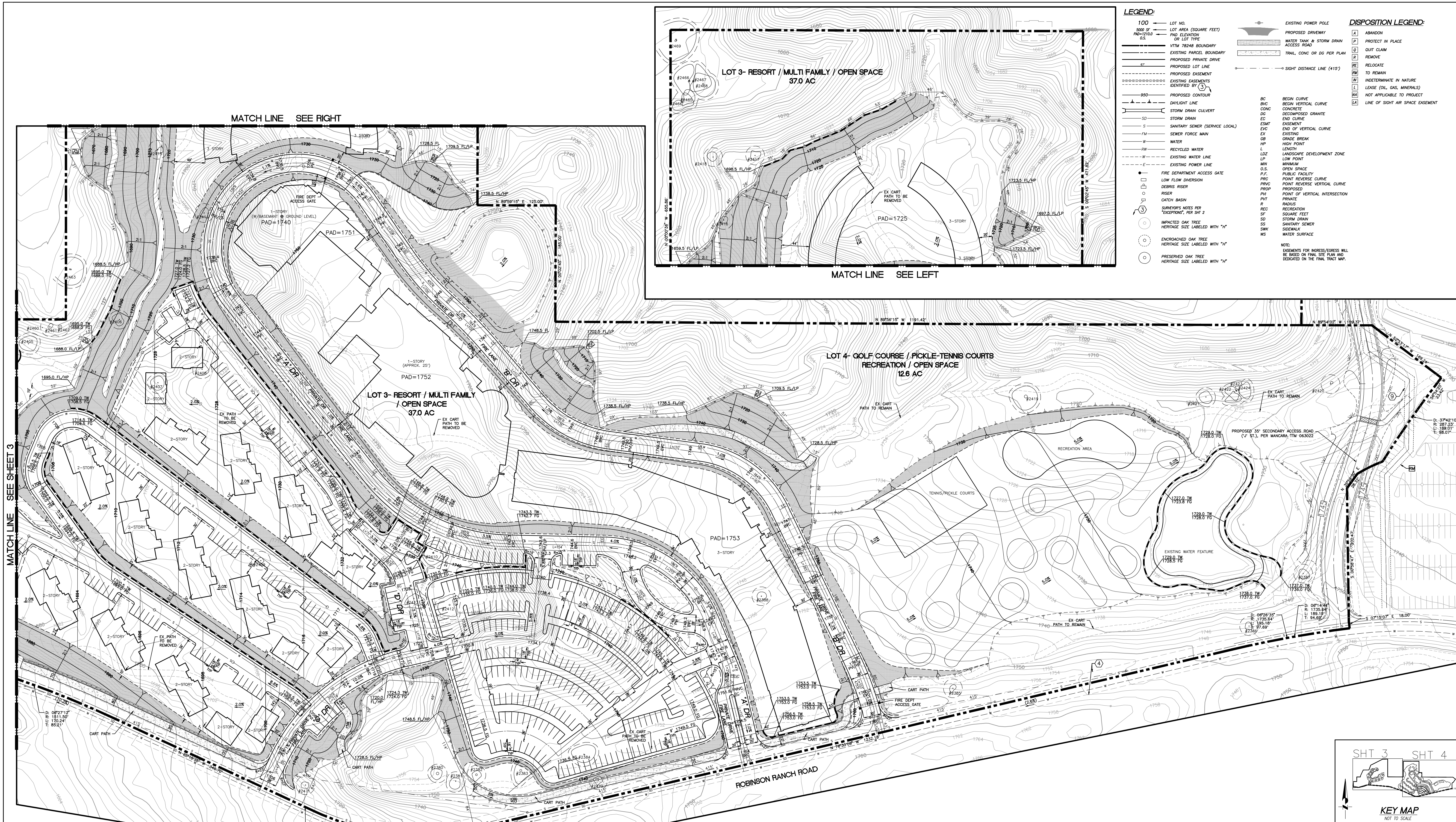
REGISTERED PROFESSIONAL ENGINEER JASON H. FUKUMITSU No. 40695 CIVIL STATE OF CALIFORNIA

PLANS PREPARED BY:
HUNSAKER & ASSOCIATES LOS ANGELES, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
26074 Avenue Hall, Ste 23 ▪ Valencia, CA 91355
PH: (661) 294-2211 ▪ FX: (661) 294-9890
JASON H. FUKUMITSU DATE

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 78248
PLANNING AREA OF 1-8

IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

SCALE: PER PLAN
DATE: 09/05/2018
JOB No. 0261-001-001
SHEET 3 OF 4 SHEETS



LEGEND:
100 — LOT NO.
5000 SF — LOT AREA (SQUARE FEET)
PAD=1210.0 O.S. — PAD ELEVATION OR LOT TYPE
VTTM 78248 BOUNDARY
EXISTING PARCEL BOUNDARY
PROPOSED PRIVATE DRIVE
67' PROPOSED LOT LINE
PROPOSED EASEMENT
EXISTING EASEMENTS IDENTIFIED BY 3
950 PROPOSED CONTOUR
DAYLIGHT LINE
STORM DRAIN CULVERT
SD STORM DRAIN
S SANITARY SEWER (SERVICE LOCAL)
FM SEWER FORCE MAIN
W WATER
RW RECYCLED WATER
W EXISTING WATER LINE
E EXISTING POWER LINE
FIRE DEPARTMENT ACCESS GATE
LOW FLOW DIVERSION
DEBRIS RISER
RISER
CATCH BASIN
3 SURVEYOR'S NOTES PER "EXCEPTIONS", PER SHT 2
IMPACTED OAK TREE HERITAGE SIZE LABELED WITH "H"
ENCROACHED OAK TREE HERITAGE SIZE LABELED WITH "H"
PRESERVED OAK TREE HERITAGE SIZE LABELED WITH "H"
EXISTING POWER POLE
PROPOSED DRIVEWAY
WATER TANK & STORM DRAIN ACCESS ROAD
TRAIL, CONC OR DG PER PLAN
SIGHT DISTANCE LINE (415')
BC BEGIN CURVE
BVC BEGIN VERTICAL CURVE
CONC CONCRETE
DG DECOMPOSED GRANITE
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ESMT EASEMENT
EVC END OF VERTICAL CURVE
EX EXISTING
GB GRADE BREAK
HP HIGH POINT
L LENGTH
LDZ LANDSCAPE DEVELOPMENT ZONE
LP LOW POINT
MIN MINIMUM
O.S. OPEN SPACE
P.F. PUBLIC FACILITY
PRC POINT REVERSE CURVE
PRVC POINT REVERSE VERTICAL CURVE
PROP PROPOSED
PVI POINT OF VERTICAL INTERSECTION
PVT PRIVATE
R RADIUS
REC RECREATION
SF SQUARE FEET
SD STORM DRAIN
SS SANITARY SEWER
SWK SIDEWALK
WS WATER SURFACE
NOTE:
EASEMENTS FOR INGRESS/EGRESS WILL BE BASED ON FINAL SITE PLAN AND DEDICATED ON THE FINAL TRACT MAP.
DISPOSITION LEGEND:
A ABANDON
P PROTECT IN PLACE
Q QUIT CLAIM
R REMOVE
RE RELOCATE
RM TO REMAIN
IN INDETERMINATE IN NATURE
L LEASE (OIL, GAS, MINERALS)
NA NOT APPLICABLE TO PROJECT
LA LINE OF SIGHT AIR SPACE EASEMENT
LOT 3- RESORT / MULTI FAMILY / OPEN SPACE
37.0 AC
MATCH LINE SEE LEFT
MATCH LINE SEE RIGHT
MATCH LINE SEE SHEET 3
LOT 3- RESORT / MULTI FAMILY / OPEN SPACE
37.0 AC
LOT 4- GOLF COURSE / PICKLE-TENNIS COURTS
RECREATION / OPEN SPACE
12.6 AC
TENNIS/PICKLE COURTS
RECREATION AREA
EXISTING WATER FEATURE
PROPOSED 35' SECONDARY ACCESS ROAD ("J" ST.), PER MANCARA TTM 063022
PAD=1740
PAD=1751
PAD=1752
PAD=1753
PAD=1725
ROBINSON RANCH ROAD
FIRE DEPT ACCESS GATE
CART PATH
EX CART PATH TO REMAIN
EX CART PATH TO BE REMOVED
NORTH
KEY MAP
NOT TO SCALE
SHT 3
SHT 4

DESIGNED: JHF, PDO	NO.	REVISIONS	DATE	BY
DRAFTED: PDO				
CHECKED: JHF				

OWNER DEVELOPER:

SAND CANYON COUNTRY CLUB

27734 SAND CANYON ROAD
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JASON H. FUKUMITSU DATE

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 78248
PLANNING AREA OF 1-8

IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

SCALE: PER PLAN
DATE: 09/05/2018
JOB No. 0261-001-001
SHEET 4 OF 4 SHEETS

4. Santa Clarita Department of Public Works Area Study Zoning Coefficients

City of Santa Clarita

Engineering Services Division

SEWAGE FLOW COEFFICIENTS

ZONING		DESCRIPTION	COEFFICIENT
			(cfs/gross acreage)
Residential	RE	Residential Estate – large custom single family homes on uniquely configured lots	0.00075
	RVL	Residential Very Low Density - 1 DU/AC	0.001
	RL	Residential Low Density – 2.2 DU/AC	0.0015
	RS	Residential Suburban - 5 DU/AC	0.005
	RM	Residential Moderate – 11 DU/AC	0.012
	RMH	Residential Medium High – 20 DU/AC	0.015
	RH	Residential High – 28 DU/AC	0.023
The above coefficients shall be used for undeveloped land, land that is not entitled, and apartment complexes. For developed land, and for entitled residential developments (except apartment complexes), a value of 0.001 cfs/dwelling unit shall be used in lieu of the above coefficients.			
Agricultural	A	Agricultural - 1 single family home/ legal lot	0.0002
Mixed-Use	MU	existing zone + 16 dwelling units per acre	existing zone coefficient + 0.016
Open Space	OS	Open Space - Natural / Unimproved	0
		Open Space - Parks	0.0002
		Community Rooms	0.0005
		Community Pool Facilities	0.001
Commercial	CTC	Commercial Town Center	0.015
	CC	Community Commercial	
	CN	Commercial Neighborhood	
	CO	Commercial Office	
Industrial	VSR	Visitor Serving/Resort	0.021
	BP	Business Park	
	IC	Industrial Commercial	
	I	Industrial	
SP 3: Newhall Specific Plan	UG1	Urban General 1	0.005
	UG2	Urban General 2	0.012
	UC	Urban Center	0.015
	COR	Corridor	0.021
	CD	Creative District	0.021
	OS	Open Space	0
			(gal/student)
Schools		Elementary & Junior High Schools	25
		High School	37.5
		University & College	50
		College with dormitories	212.5

5. Mancara (TTM063022) Sewer Area Study

MASTER SEWER AREA STUDY MAP
FOR
MANCARA
TM 063022

FLOW CAPACITY FOR ONSITE/DOWNSTREAM SEWERS LOST CANYON ROAD TO PC 15-01 24" LINE

SEGMENT	MH TO MH	EXISTING PIPE SIZE (in)	SLOPE (%)	FLOWRATE, Q (cfs)	CAPACITY, Q* (cfs)	Q/Q* (% FULL) 12" ≤ PIPE	Q/Q* (% FULL) 15" ≥ PIPE	TRIBUTARY AREA PER PC 11961 AS	CALCULATED FLOW (cfs)	EXISTING PIPE ADEQUATE	NOTES
①	P1/267–266	18	0.52	5.690	8.115	N/A	70.1	MANCARA AREA 1–6	0.237	YES	
②	266–265	18	0.52	5.690	8.115	N/A	70.1	–	–	YES	
③	265–264	18	0.52	5.690	8.115	N/A	70.1	–	–	YES	
④	264 263	18	0.52	5.719	8.115	N/A	70.5	17A, 17B	0.029	YES	
⑤	263–262	18	0.60	5.735	8.720	N/A	65.8	17C	0.016	YES	
⑥	262–261	18	1.16	5.755	12.139	N/A	47.4	17D	0.020	YES	
⑦	161–260	18	0.72	5.768	9.556	N/A	60.4	17E	0.013	YES	
⑧	260–259	24	0.12	5.796	8.453	N/A	68.6	17F	0.028	YES	
⑨	259–258	24	0.12	5.820	8.453	N/A	68.8	17G	0.024	YES	
⑩	258–142	24	0.12	5.829	8.453	N/A	68.9	17H	0.009	YES	
⑪	142–141	18	0.20	6.603	5.010	N/A	100.0	20A, 21A, 23A, 23B, 24	0.774	NO	SEE UPGRADED PIPE FLOW CAPACITY TABLE BELOW
⑫	141–140	18	0.20	6.603	5.010	N/A	100.0	–	–	NO	SEE UPGRADED PIPE FLOW CAPACITY TABLE BELOW
⑬	140–139	18	0.20	6.603	5.010	N/A	100.0	–	–	NO	SEE UPGRADED PIPE FLOW CAPACITY TABLE BELOW
⑭	139–138	18	0.20	6.603	5.010	N/A	100.0	–	–	NO	SEE UPGRADED PIPE FLOW CAPACITY TABLE BELOW
⑮	138–137	15	2.00	6.615	9.693	N/A	68.2	18	0.012	YES	
⑯	137–136	15	2.00	6.615	9.693	N/A	68.2	–	–	YES	
⑰	136–135	15	2.00	6.615	9.693	N/A	68.2	–	–	YES	
⑱	135–PC 15–01 24" LINE	15	2.00	6.644	9.693	N/A	68.5	19	0.029	YES	

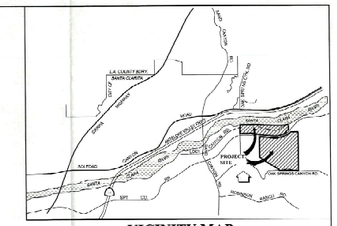
* NOTE: MAXIMUM % FULL TO BE 50% FOR 12" PIPE OR SMALLER AND 75% FOR 15" PIPE OR LARGER.

LAND USE/ SEWER GENERATION TABLE

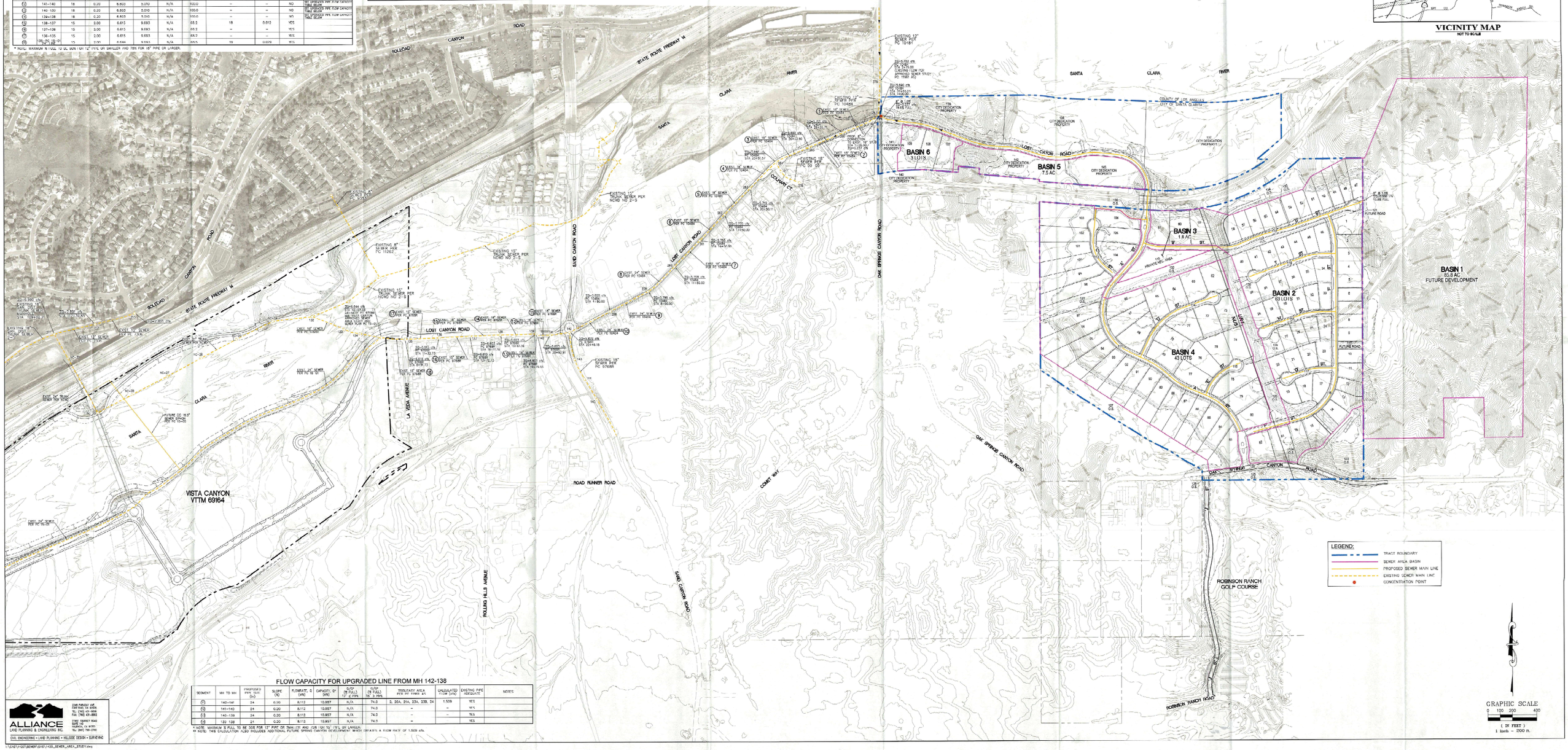
AREA I.D.	LAND USE	AREA OR NO. UNITS	PEAK Q COEFF.	PEAK Q
1	SINGLE-FAMILY RESIDENTIAL	85.8 AC	0.0015 cfs/AC	0.086 cfs
2	SINGLE-FAMILY RESIDENTIAL	63 UNITS	0.0015 cfs/UNIT	0.063 cfs
3	RECREATION AREA	1.8 AC	0.015 cfs/AC	0.027 cfs
4	SINGLE-FAMILY RESIDENTIAL	43 UNITS	0.001 cfs/UNIT	0.043 cfs
5	PARK/OPEN SPACE	7.5 AC	0.002 cfs/AC	0.015 cfs
6	SINGLE-FAMILY RESIDENTIAL	3 UNITS	0.001 cfs/UNIT	0.003 cfs

FLOW CAPACITY FOR ONSITE BASINS

BASIN ID	PROPOSED PIPE SIZE (in)	SLOPE (%)	FLOWRATE, Q (cfs)	CAPACITY, Q* (cfs)	Q/Q* (% FULL) 12" ≤ PIPE	Q/Q* (% FULL) 15" ≥ PIPE
1–6	8	1.00	0.237	1.212	19.6	N/A



VICINITY MAP
NOT TO SCALE



LEGEND:

▬ ▪ ▪ ▬	TRACT BOUNDARY
▬	SEWER AREA BASIN
▬	PROPOSED SEWER MAIN LINE
- - -	EXISTING SEWER MAIN LINE
●	CONCENTRATION POINT

GRAPHIC SCALE
0 100 200 400
(IN FEET)
1 inch = 200 ft.

FLOW CAPACITY FOR UPGRADED LINE FROM MH 142-138

SEGMENT	MH TO MH	PROPOSED PIPE SIZE (in)	SLOPE (%)	FLOWRATE, Q (cfs)	CAPACITY, Q* (cfs)	Q/Q* (% FULL) 12" ≤ PIPE	Q/Q* (% FULL) 15" ≥ PIPE	TRIBUTARY AREA PER PC 11961 AS	CALCULATED FLOW (cfs)	EXISTING PIPE ADEQUATE	NOTES
⑪	142–141	24	0.20	8.112	10.957	N/A	74.0	2, 20A, 21A, 23A, 23B, 24	1.509	YES	
⑫	141–140	24	0.20	8.112	10.957	N/A	74.0	–	–	YES	
⑬	140–139	24	0.20	8.112	10.957	N/A	74.0	–	–	YES	
⑭	139–138	24	0.20	8.112	10.957	N/A	74.0	–	–	YES	

* NOTE: MAXIMUM % FULL TO BE 50% FOR 12" PIPE OR SMALLER AND 75% FOR 15" PIPE OR LARGER.
** NOTE: THIS CALCULATION ALSO INCLUDES ADDITIONAL FUTURE SPRING CANYON DEVELOPMENT WHICH CREATES A FLOW RATE OF 1.509 cfs.

ALLIANCE
LAND PLANNING & ENGINEERING INC.

2248 FARADAY AVE.
CARLSBAD, CA 92008
TEL: (760) 431-9896
FAX: (760) 431-8802

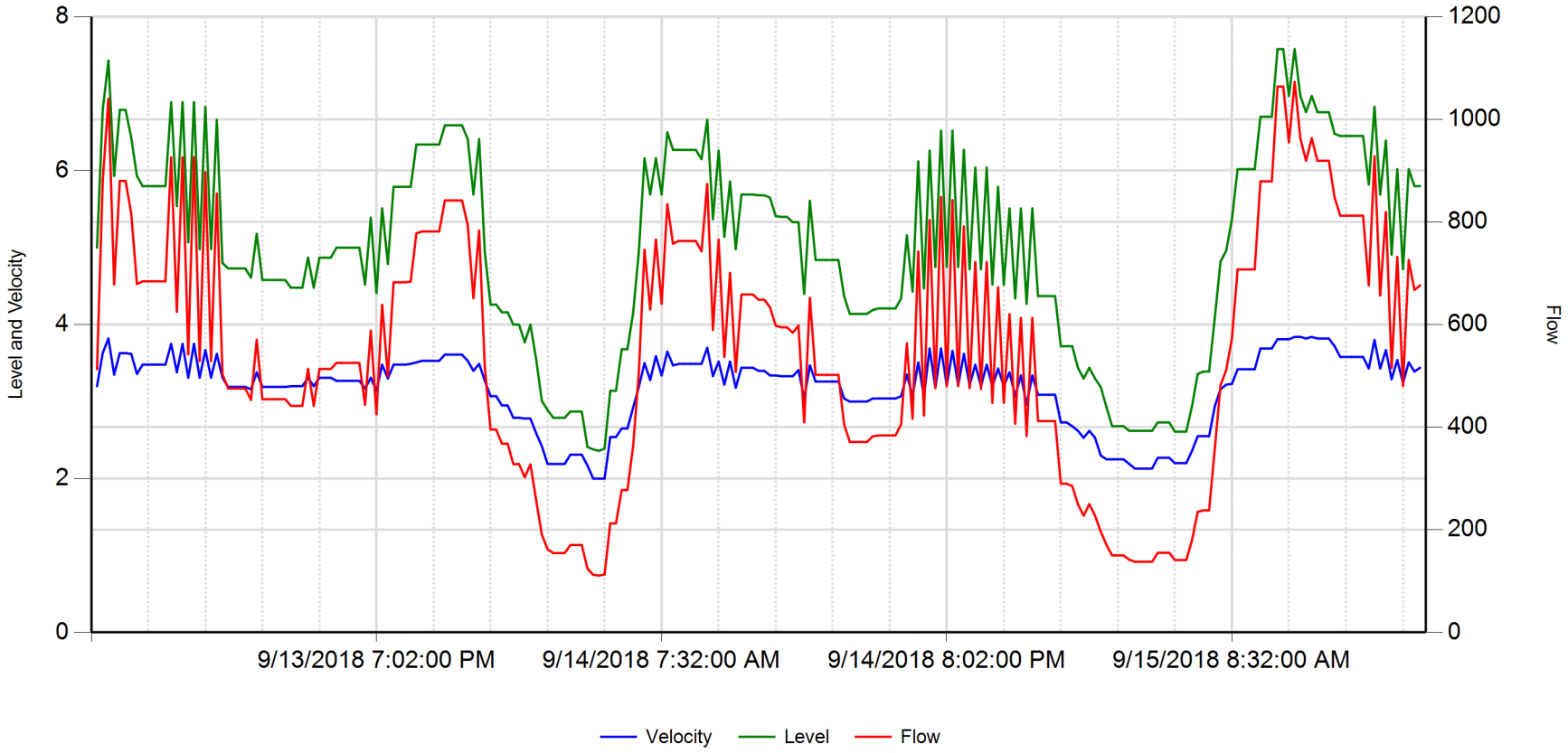
27451 TOURNEY ROAD
SUITE 140
VALENCIA, CA 91355
TEL: (661) 799-2760

CIVIL ENGINEERING • LAND PLANNING • HILLSIDE DESIGN • SURVEYING

I: \CAD\1420\SEWER\SAS\1420_SEWER_AREA_STUDY.dwg

6. Flow Test Result

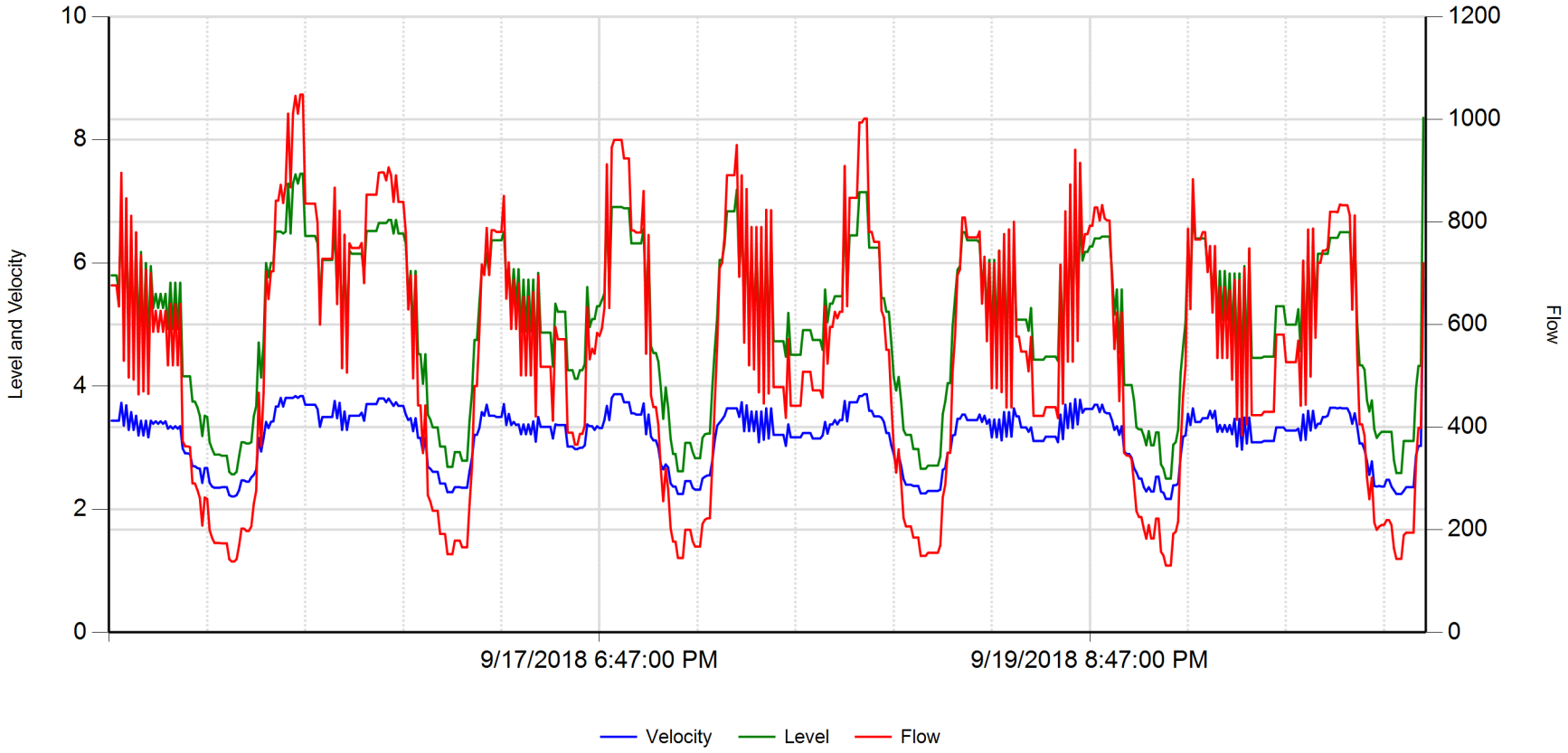
2018.09 Lost Canyon MH 138



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	3.175	5.015	543.872	**RainFall**	Inches
Maximum	3.840	7.580	1072.844		
Minimum	2.000	2.360	111.041		

9/24/2018 12:28:46 PM

2018.09 Lost Canyon MH 138



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	3.172	4.993	540.905	**RainFall**	Inches
Maximum	3.870	7.450	1048.330		
Minimum	2.170	2.500	130.486		

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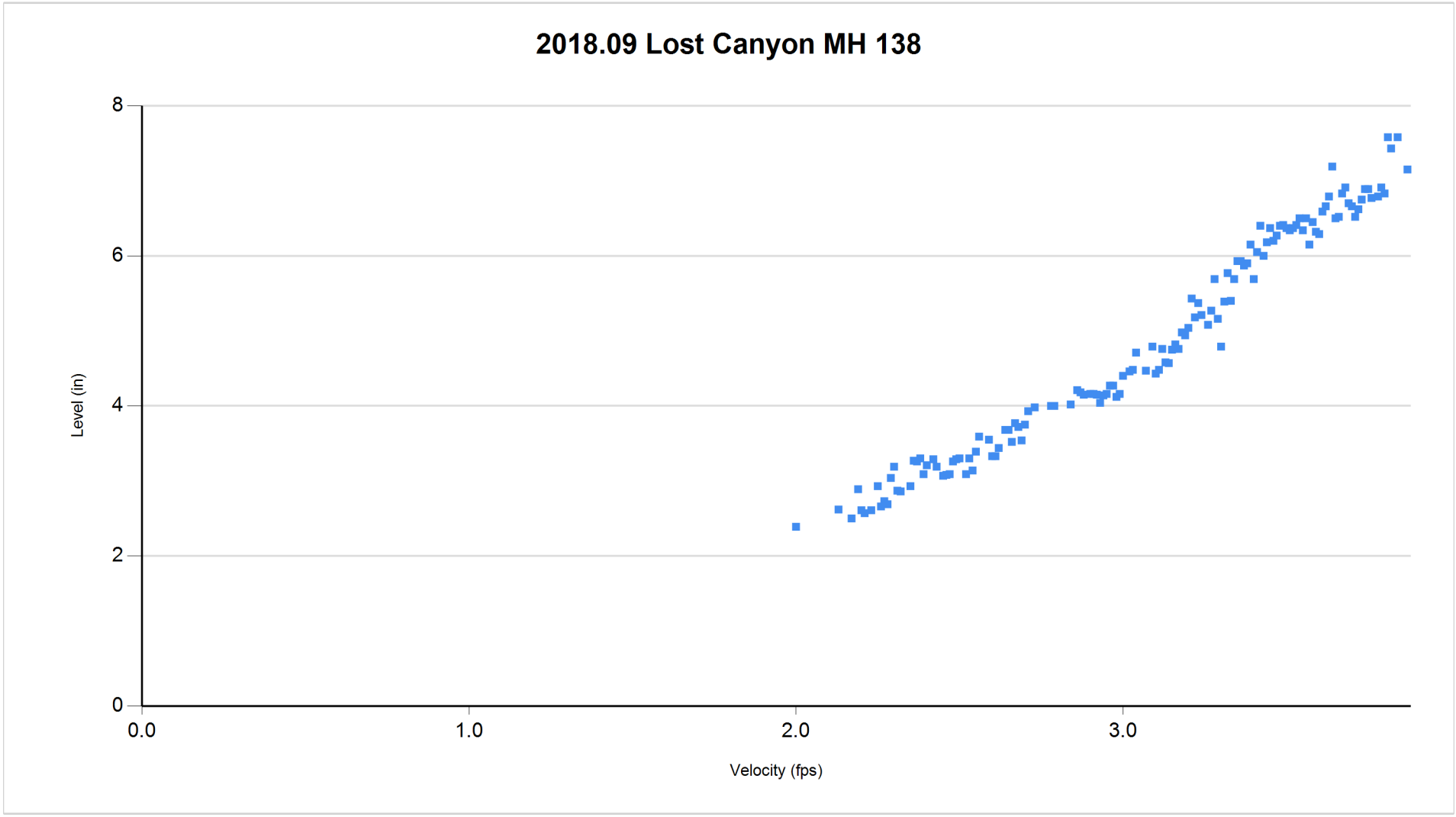
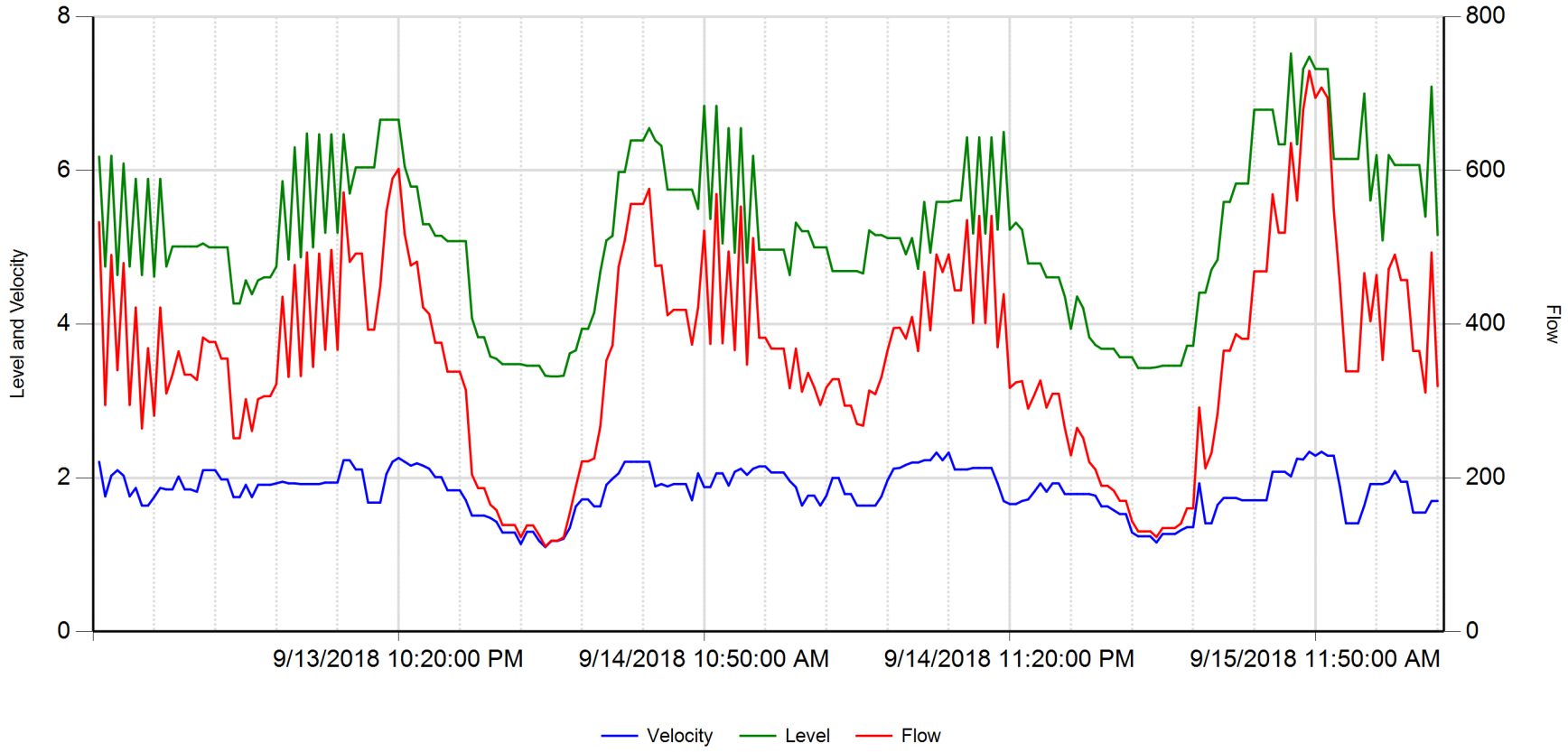


9/13/2018 thru 9/21/2018

9/24/2018 12:28:46 PM

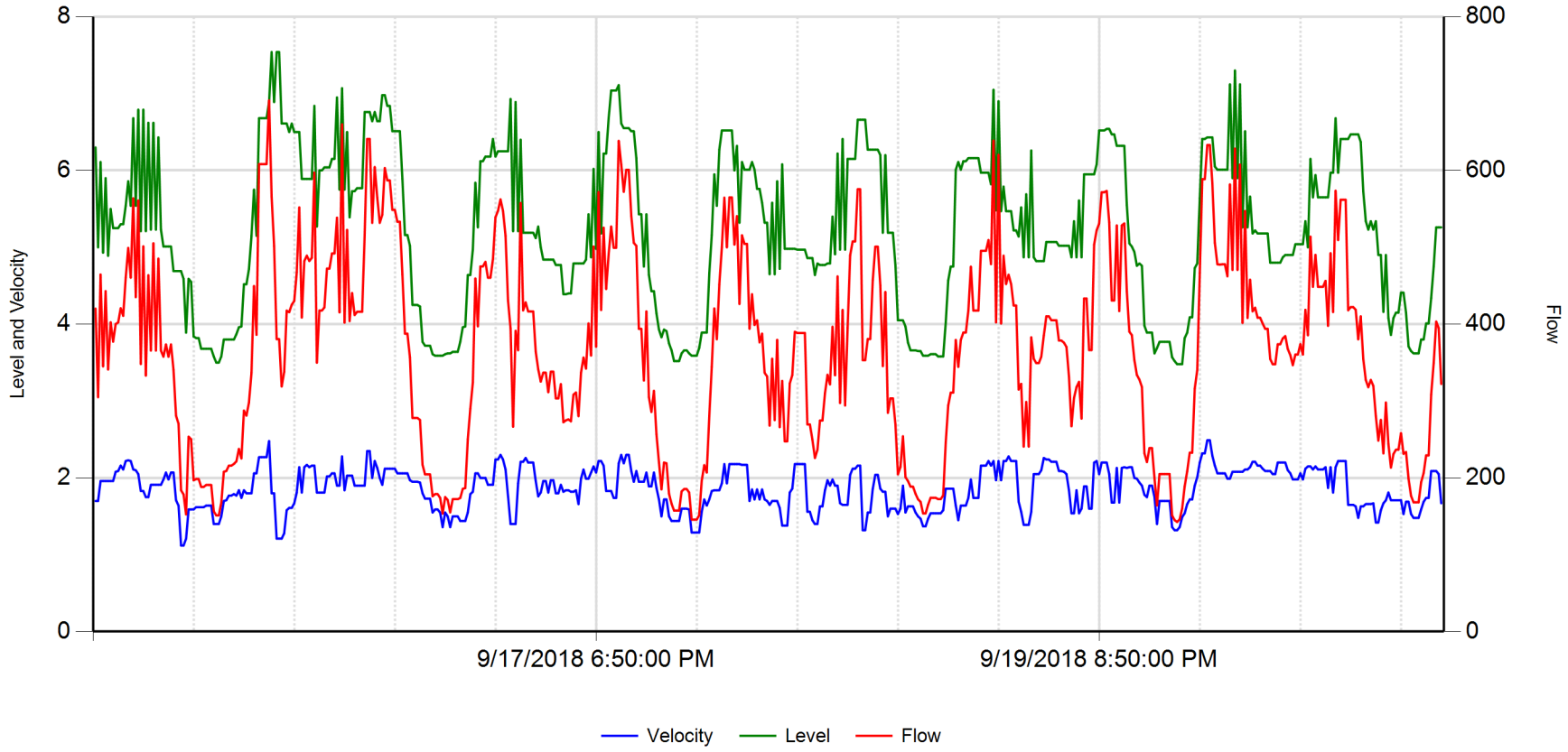
2018.09 Sand Canyon MH 142



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.836	5.194	360.417	**RainFall**	Inches
Maximum	2.340	7.520	729.442		
Minimum	1.100	3.320	110.833		

9/24/2018 12:29:23 PM

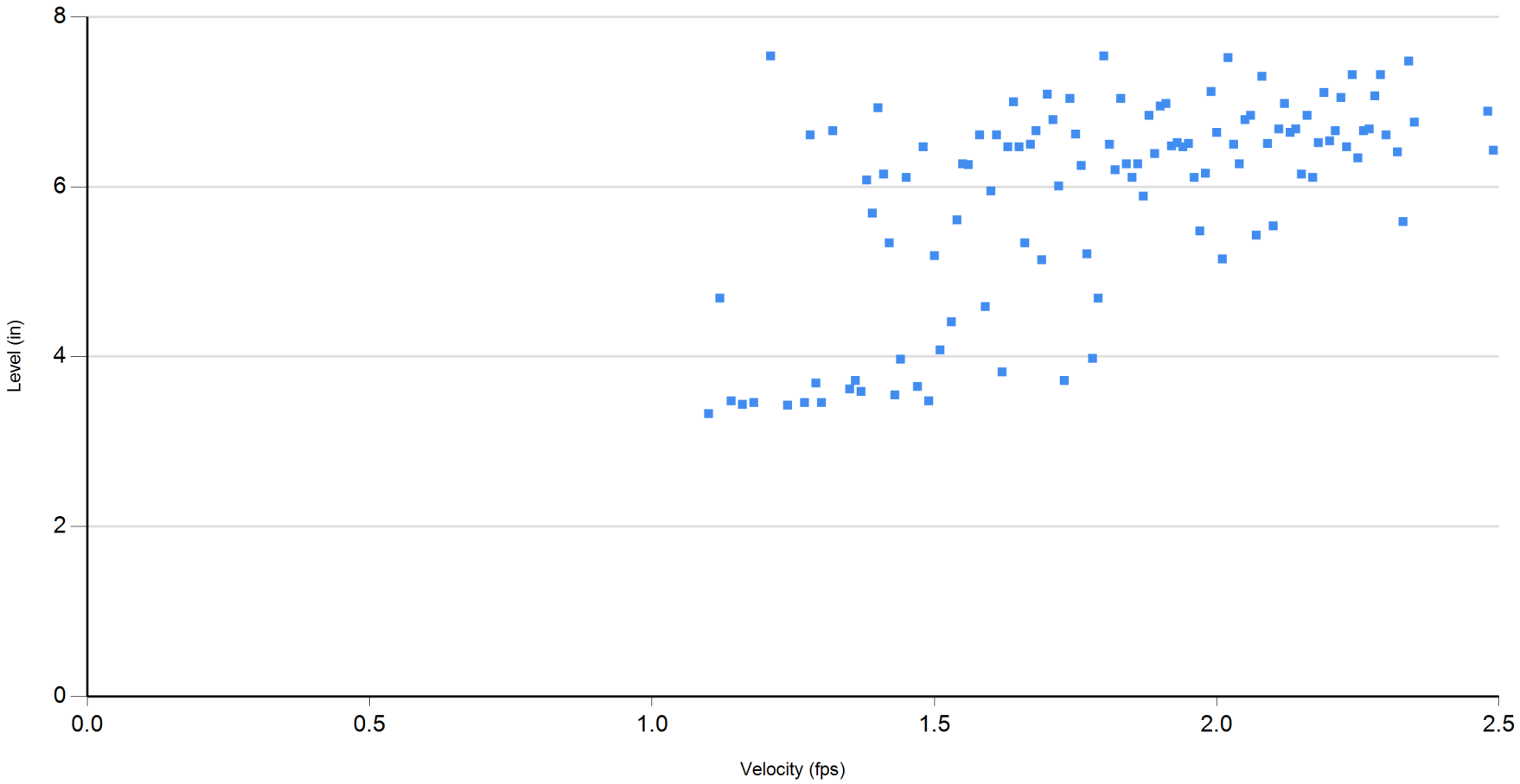
2018.09 Sand Canyon MH 142



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.862	5.248	367.766	**RainFall**	Inches
Maximum	2.490	7.540	691.039		
Minimum	1.120	3.480	142.708		

9/24/2018 12:29:23 PM

2018.09 Sand Canyon MH 142



9/13/2018 thru 9/21/2018

9/24/2018 12:29:23 PM

7. Bonding Estimate

City of Santa Clarita
Department of Public Works - Engineering Services Division
Updated September, 2017

Bond & Fee Calculation Sheet - Sewer

Instructions:
- Complete fields below highlighted in yellow
- On Line B1, using the drop-down arrow, select "Y" or "N" as applicable
- All bond and fee amounts will automatically calculate and be summarized below

Notes:
- Inspection fees calculated below are an estimated amount and subject to change. The fee is based on the final approved plan and date of payment. Verify fee amount with Engineering Services Division prior to payment.

Prepared by:

Heidy Siles	Name
(661)705-2203	Phone
hsiles@hunsaker.com	Email
9/27/2018	Date prepared

(place Engineer's seal, exp.date & signature below)

Tract / Parcel Map #	78248
Lot #	
Address	27734 Sand Canyon Road
Master Case #	
ENG	
STD	
SS	
PC	

Approved by:
Name _____
Signature _____
Date _____

SUMMARY

Valuation	$145,002.75	(A)
Bonds		
Sewer - Faithful Performance	$153,700.00	(G)
Sewer - Labor & Materials	$76,850.00	(G/2)
Bond Processing Fee	$237.00	
Plan Review Fee	$1,822.84	(I)
Record Management Fee	$47.24	
Encroachment Permit - Sewer		
Inspection Fee	$4,723.54	(F)
Permit Issuance Fee	$45.00	
Total =	$4,768.54	

SEWER - CONSTRUCTION COST			
Item	***Quantity***	***Unit Cost***	***Total Cost***

Sewer Pipe - Vitrified Clay Pipe				
4" VCP		$ 93.29	/ LF	$ -
6" VCP		$ 95.77	/ LF	$ -
8" VCP		$ 101.76	/ LF	$ -
10" VCP		$ 107.74	/ LF	$ -
12" VCP		$ 113.73	/ LF	$ -
15" VCP		$ 119.71	/ LF	$ -
18" VCP	638	$ 125.71	/ LF	$ 80,201.72
Manhole				
Manhole	5	$ 5,985.92	each	$ 29,929.60
Break into Existing Manhole		$ 2,394.36	each	$ -
Extra Depth Construction				
Extra Depth Construction (10' - 12')		$ 12.57	/ LF	$ -
Extra Depth Construction (12' - 14')		$ 18.55	/ LF	$ -
Extra Depth Construction (14' - 16')		$ 31.14	/ LF	$ -
Extra Depth Construction (16' - 18')		$ 37.12	/ LF	$ -
Extra Depth Construction (18' - 20')		$ 43.69	/ LF	$ -
Miscellaneous Items				
4" Ductile Iron Pipe		$ 43.56	/ LF	$ -
6" Ductile Iron Pipe		$ 53.69	/ LF	$ -
8" Ductile Iron Pipe		$ 70.91	/ LF	$ -
10" Ductile Iron Pipe		$ 74.96	/ LF	$ -
12" Ductile Iron Pipe		$ 86.11	/ LF	$ -
14" Ductile Iron Pipe		$ 92.18	/ LF	$ -
16" Ductile Iron Pipe		$ 97.25	/ LF	$ -
≥ 18" Ductile Iron Pipe		$ 108.39	/ LF	$ -
Concrete Encasement or Cradle		$ 31.14	/ LF	$ -
Special Encasement or Cradle		$ 61.66	/ LF	$ -
Excavation in Rock Areas		$ 31.14	/ LF	$ -
Unstable Bedding		$ 25.15	/ LF	$ -
Jacking Steel Casing		$ 677.62	/ LF	$ -
Breaking Pavement & Resurfacing - AC		$ 7.78	/ LF	$ -
Breaking Pavement & Resurfacing - Concrete		$ 13.77	/ LF	$ -
Backflow Preventer		$ 436.97	each	$ -
Cleanout (6")		$ 875.14	each	$ -
Cast Iron Pipe		$ 7.87	/ in / ft	$ -
Join Existing VCP		$ 281.21	each	$ -
Lump Sum ***(enter dollar amount)***			each	$ -
			TOTAL =	$ 110,131.32

SEWER - BOND			
(B1) Traffic Control Plan required? ***(click in cell and use drop-down arrow to select 'Y' for Yes or 'N' for No)***	Y	Traffic Control Plan (5% x A) =	$ 5,506.57
		Contingency [15% x (A+B)] =	$ 17,345.68
		Inflation [12% x (A+B+C)] =	$ 15,958.03
		Improvement Total (A+B+C+D) =	$ 148,941.60
		Inspection (Use Table 1) =	$ 4,723.54
		Sewer Bond Amount (E+F) =	$ 153,700.00
		round up to nearest hundred	

PLAN REVIEW FEE		
Valuation for Plan Review Fee (A+D+15% Contingency) =	$	145,002.75
***Plan Review Fee (Use Table 2)** =	$	1,822.84

**Plan Reviews beyond 3rd submittal will require payment of an additional review fee in the amount of 15% of original plan review fee.*

TABLE 1: Inspection Fee Calculation*

Valuation Total (E)					
$1 to $10,000	10% of valuation				
$10,000 to $20,000	$ 1,000.00	+	5.0%	over	$10,000
$20,001 to $200,000	$ 1,500.00	+	2.5%	over	$20,000
$200,000 and over	$ 6,000.00	+	2.0%	over	$200,000

TABLE 2: Plan Review Fee Calculation					
Valuation Total (H)	Plan Check Fee (I)				
$5,000 or less	$371				
$5,001 to $25,000	$388				
$25,001 to $100,000	$388	+	$	13.52	per $1,000 over $25,000
$100,000 and over	$1,401.61	+	$	9.36	per $1,000 over $100,000

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

GRACE ROBINSON HYDE
Chief Engineer and General Manager

July 3, 2019

Ref. DOC 4999798

Mr. Hai Nguyen
City of Santa Clarita
23920 Valencia Boulevard
Suite 302
Santa Clarita, CA 91355

Dear Mr. Nguyen:

Revised Response to the Revised NOP for Sand Canyon Resort Project

The Santa Clarita Valley Sanitation District (District) responded to a Revised Notice of Preparation of a Draft Environmental Impact Report (NOP) for the subject project on May 2, 2019 (copy enclosed). The proposed project is located within the jurisdictional boundaries of the District. We offer the following amendment:

- The District determined the wastewater originating from the proposed project site will discharge to a local sewer line, which is not maintained by the Districts, for conveyance to the Districts' Soledad Canyon Section 5 Trunk Sewer, located in Soledad Canyon Road at Los Canyon Road. The Districts' 18-inch diameter trunk sewer has a capacity of 5.7 million gallons per day (mgd) and conveyed a peak flow of 2.2 mgd when last measured in 2018.

The previous response letter misidentified wastewater flow tributary to the Soledad Canyon Section 4 Trunk Sewer. As a result of the amendment provided herein, the developer is no longer required to submit a build-out schedule. If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

Enclosure

cc: A. Schmidt
A. Howard

DOC 5212260.SCVD

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

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www.lacsd.org

GRACE ROBINSON HYDE
Chief Engineer and General Manager

May 2, 2019

Ref. DOC: 4999798

Mr. Hai Nguyen
City of Santa Clarita
23920 Valencia Boulevard
Suite 302
Santa Clarita, CA 91355

Dear Mr. Nguyen:

Response to Revised NOP for the Sand Canyon Resort Project

The Santa Clarita Valley Sanitation District (District) received a Revised Notice of Preparation of a Draft Environmental Impact Report (NOP) for the subject project on April 4, 2019. The proposed project is located within the jurisdictional boundaries of the District. Previous comments submitted by the District in correspondence dated November 15, 2018 (copy enclosed) still apply the subject project with the following updated information:

1. The Districts' 15-inch diameter Soledad Canyon Section 4 Trunk Sewer, located in a private right of way in the Santa Clara River southeast of the south terminus of Hidaway Avenue, is at capacity. Please submit a copy of the project's build-out schedule to the undersigned to ensure the project is considered when planning future sewerage system relief and replacement projects.

2. The expected increase in average wastewater flow from the revised project scope, described in the notice as a total of 392 hotel rooms, including the view villas, 25,000 square feet of Dining area, and a 33,000 square-foot Spa/Gym/Salon, is 95,970 gallons per day.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

Enclosure

cc: A. Schmidt
A. Howard

DOC 5081736.SCVD

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
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www.lacsd.org

GRACE ROBINSON HYDE
Chief Engineer and General Manager

November 15, 2018

Ref. Doc. No.: 4817284

Mr. Hai Nguyen
City of Santa Clarita
23920 Valencia Boulevard
Suite 302
Santa Clarita, CA 91355

Dear Mr. Nguyen:

NOP Response for the Sand Canyon Resort Project

The Santa Clarita Valley Sanitation District (District) received a Notice of Preparation of a Draft Environmental Impact Report for the subject project on October 18, 2018. The proposed project is located within the jurisdictional boundaries of the District. We offer the following comments regarding sewerage service:

1. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the District, for conveyance to the District's Soledad Canyon Trunk Sewer Section 4, located in a private right of way in the Santa Clara River southeast of the terminus of Hidaway Avenue. The District's 15-inch diameter trunk sewer has a capacity of 2.7 million gallons per day (mgd) and conveyed a peak flow of 1.5 mgd when last measured in 2012.

2. Availability of sewer capacity depends upon project size and timing of connection to the sewerage system. Because there are other proposed developments in the area, the availability of trunk sewer capacity should be verified as the project advances. Please submit a copy of the project's build-out schedule to the undersigned to ensure the project is considered when planning future sewerage system relief and replacement projects.

3. The District operates two water reclamation plants (WRPs), the Saugus WRP and the Valencia WRP, which provide wastewater treatment in the Santa Clarita Valley. These facilities are interconnected to form a regional treatment system known as the Santa Clarita Valley Joint Sewerage System (SCVJSS). The SCVJSS has a capacity of 28.1 mgd and currently produces an average recycled water flow of 18.4 mgd.

4. The expected average wastewater flow from the project, described in the notice as a total of 322 hotel rooms and 25 villas, is 44,150 gallons per day. For a copy of the District's average wastewater generation factors, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and click on the Table 1, Loadings for Each Class of Land Use link.

5. The District is empowered by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the District's Sewerage System for increasing the strength or quantity of wastewater discharged from connected facilities. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate the proposed project. Payment of a connection fee will be required before a permit to connect to the sewer is issued. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and search for the appropriate link. In determining the impact to the Sewerage System and applicable connection fees, the Districts' Chief Engineer and General Manager will determine the user category (e.g. Condominium, Single Family home, etc.) that best represents the actual or anticipated use of the parcel or facilities on the parcel. For more specific information regarding the connection fee application procedure and fees, please contact the Connection Fee Counter at (562) 908-4288, extension 2727.

6. In order for the District to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of District wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of District facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of District treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise you that the District intends to provide this service up to the levels that are legally permitted and to inform you of the currently existing capacity and any proposed expansion of District facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

cc: A. Schmidt
A. Howard