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Three Hughes
Irvine, California
92618-2021
(949) 583-1010 PH
(949) 583-0759 FX
www.hunsaker.com

Water System Hydraulic Analysis

Date: January 23, 2019

For: Suburban Water Services
1325 N. Grand Ave, Suite 100
Covina, CA 91724

By: Katie O'Connor, P.E.
Hunsaker & Associates Irvine, Inc.

Project: **Glenelder Tract 082159**

Hunsaker & Associates Irvine, Inc. (H&A) is pleased to submit the Water System Hydraulic Analysis for the Glenelder project. This analysis has been prepared to describe the proposed water system for the aforementioned residential development project in Hacienda Heights. The project lies within the jurisdiction of Suburban Water Systems and their standards have been used for this report. Hydraulic models were prepared using Haestad Methods software to model various flows during steady state conditions.

THE PROPOSED WATER SYSTEM FOR THE GLENELDER PROJECT MEETS THE DESIGN STANDARDS SPECIFIED BY SURBURBAN WATER SYSTEMS. This evaluation is based on existing and known conditions and should be re-evaluated if these conditions change or new information becomes available. Any interpretation of the information presented in this report should be referred to H&A to ensure the integrity of the results.

Project Location

The Glenelder project is located adjacent to Folger Street in Hacienda Heights. The general project location is shown on exhibit entitled, “Vicinity Map – Figure 1.”

Summary of Findings

1. The development will include 86 single family residential units on approximately 11.5 acres.

2. Water supply is provided by Suburban Water Systems through an existing water system. The Static Hydraulic grade was assumed to 518 feet based on a fire hydrant flow test on Folger Street included in the Appendix for Reference.

3. The proposed onsite water system consists of 8-inch diameter water mains. The proposed water system includes two connections to the Suburban Water Systems water mains surrounding the project. The water system schematic is shown on the attached “Proposed Water System Model – Figure 2.”

4. H&A estimated the flow constant “K” using Affinity Laws to determine the HGL of the water supply at static, peak hour demands, and maximum day demands plus 1250 gpm fire flow events. The flow constant for this water system is $K = Q / H_f^{0.54}$ where H_f is the difference (in feet) of the measured static and residual pressure at the test flow. The “K” value for the water

system is estimated to be **264** based on the fire flow test included in the Appendix.

5. In order to calculate the pipe sizes, velocities and available pressure of the proposed water system for Glenelder, we have prepared a hydraulic model using WaterCad v7.0 by Haestad Methods. The summary of outputs from the model runs are included in the Appendix of this report.

6. The proposed water system provides pressures greater than 40 psi for all nodes during maximum daily demands. The minimum in-tract maximum daily demand pressure experienced was **68 psi** with an estimated HGL of 518 feet at the modeled fire flow test hydrant on Folger Street. The following table summarizes the peak hour model run:

Table 1 – Summary of Maximum Daily Demand Model Run

Total Flow (gpm)	Minimum in-tract Residual Pressure	
	(node)	(psi)
50	J-13	68

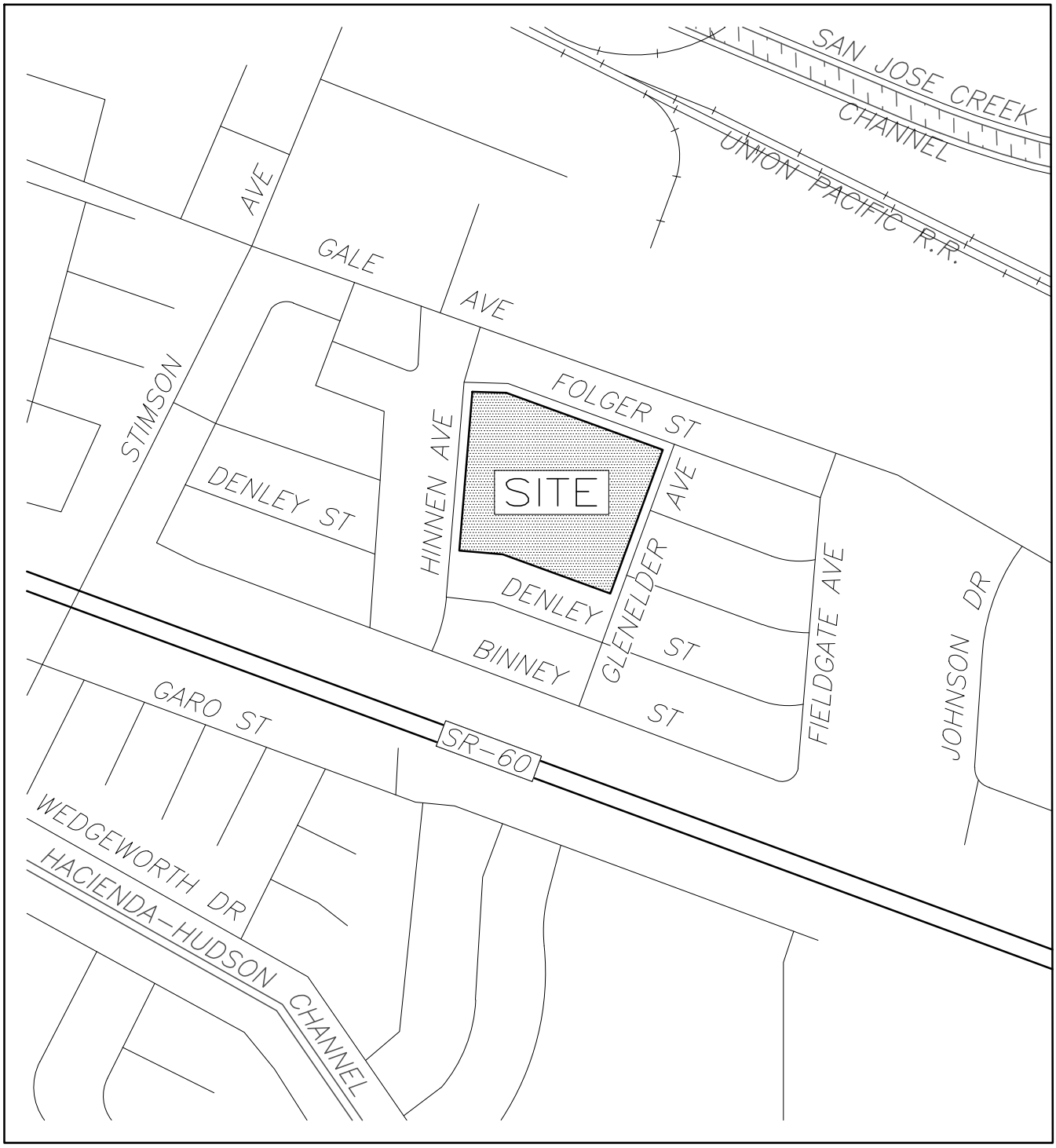
7. Fire flow requirement was determined by the Los Angeles County Fire Authority. The proposed water system provides pressures greater than 20 psi during maximum day demands plus 1250 gpm fire flow events as required by the Los Angeles County Fire Department. The minimum residual pressure experience for the worst-case 1250 gpm fire flow event was **56 psi** with an estimated HGL of 499 feet at the modeled fire flow test hydrant on Folger Street. The following table summarizes the MDD plus Fire Flow events:

Table 3 - Summary of Worst Case Fire Flow Model Runs

Fire Flow Node	Node Elevation	MDD+FF at Node	Node HGL	Residual Pressure
Max Day Demand + 1250 gpm Fire Flow				
J-12	362 ft	1250 gpm	491 ft	**56 psi**

We sincerely trust these calculations will provide sufficient evidence that the proposed water system is adequate for the proposed Glenelder residential project Please contact me at (949) 458-5437 if you have any questions.

KO
Enclosures
xc:
W.O.3916-28
(F:\1037\Engineering\SY_WS STUDIES\water\WT_Report_Letterhead 2018.doc)



VICINITY MAP

N.T.S.

GLENELDER
HACIENDA HEIGHTS, CA
VICINITY MAP

FIGURE 1

W.O. # 3916-28

DATE: 22 JAN 2019

LEGEND

P–X	EXISTING 8" DOMESTIC WATER AND PIPE NUMBER
P–X	EXISTING 6" DOMESTIC WATER AND PIPE NUMBER
P–X	PROPOSED 8" DOMESTIC WATER AND PIPE NUMBER
J–X ●	NODE & NODE NUMBER
	MODELED FIRE FLOW
	PROPOSED FIRE HYDRANT
	EXISTING FIRE HYDRANT
	MODELED RESERVIOR

SUMMARY OF FIRE FLOW MODEL RUN

FIRE FLOW NODE	NODE ELEVATION (ft)	FF+MDD AT NODE (gpm)	NODE HGL (ft)	RESIDUAL PRESSURE (psi)
J-12	362	1250	491	56

NOTES:

1. SEE APPENDIX FOR THE COMPLETE MODEL RUN DATA
2. MODELED RESERVOIR IS LOCATED AT THE FLOW TEST HYDRANT ON SUBURBAN WATER DISTRICT'S WATER SYSTEM. THE STATIC HGL IS ASSUMED TO BE 518 FEET, PER FIRE HYDRANT FLOW TEST.

N.T.S.

HUNSAKER & ASSOCIATES
IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
Three Hughes ▪ Irvine, CA 92618 ▪ PH: (949) 583-1010 ▪ FX: (949) 583-0759

GLENELDER
DOMESTIC WATER SYSTEM MODEL

FIGURE 2

W.O. 3916–28 | DATE: 22 JAN 2019

PLOTTED BY: KatieO DATE: Jan. 24, 2019 TIME: 06:50 AM F:\1037\Engineering\SY_WS STUDIES\water\glenelder_water model EXHIBIT.dwg

Appendix

HUNSAKER
& ASSOCIATES
IRVINE, INC.

HGL Calculation Based on Hydrant Test

Description	Desired Flow Q_F (gpm)	Dynamic Loss H_F (feet)*	Available HGL_F (feet)**	Test Run
Static	0	0.00	518	1
MAX DAY	50	0.05	518	2
MDD+1250 FF	1,300	19.11	499	3

* H_F is Static minus Residual (in feet) at Desired Flow

** HGL_F = Test Elevation + Static Pressure - H_F

Hydrant Test Data:

Orifice Dia	4.0 in.	
Static Pressure	72 psi	*166* feet
Residual Pressure	20 psi	*46* feet
Pitot Reading	0 psi	
Observed Flow	3,500 gpm	
Test Elevation	352 feet	

Affinity Equations:

$$K = \frac{Q_R}{H_R^{\wedge 0.54}}$$

- K is Affinity Constant
- Q_R is Test Flow
- Q_F is Desired Flow
- H_R is Static minus Residual (in feet) at Test Flow

$$H_F = \left(\frac{Q_F}{K}\right)^{\wedge 1.85}$$

Affinity Constant: (Using Flow Test Values)

K = 264

FORM 195
Rev. 05/13

COUNTY OF LOS ANGELES FIRE DEPARTMENT
FIRE PREVENTION DIVISION

Fire Prevention Engineering
5823 Rickenbacker Road
Los Angeles, CA 90040
Telephone (323) 890-4125 Fax (323) 890-4129

Information on Fire Flow Availability for Building Permit

For Single Family Dwellings (R-3)

INSTRUCTIONS:

Complete parts I, II (A) when:
Verifying fire flow, fire hydrant location and fire hydrant size.

Complete parts I, II (A), & II (B) when:
For buildings equipped with fire sprinkler systems, and/or private on-site fire hydrants.

PROJECT INFORMATION
(To be Completed by Applicant)

PART I

Building Address: 16234 Folger Street

City or Area: Hacienda Heights

Nearest Cross Street: Glenelder Ave and Hinnen Avenue

Distance of Nearest Cross Street: Abutting

Property Owner: Hacienda La Puente Unified Sc Telephone: (626) 933-1000

Address: 15959 E. Gale Ave

City: City of Industry Zip Code 91745

Occupancy (Use of Building): Future 86 SFR dwellings Sprinklered: Yes [X] No [ ]

Type of Construction Type V wood frame for SFR's.

Square Footage: 2,200 - 3,400 sq ft SFR dwellin Number of Stories: 2

Present Zoning: R-1 (LA County Zone); H9 (Residential: 0-9 du/net ac) (Hacienda H

Applicant's Signature

Date 11/19/18

Lennar Homes

PART II (A) **INFORMATION ON FIRE FLOW AVAILABILITY**
(Part II to be completed by Water Purveyor)

The distance from the fire hydrant to the property line is 50'

feet via vehicular access. The fire flow services will be rendered from a 8" AC

inch diameter water main. The hydrant is located on FOLGER ST (Street)

395' (Feet) EAST OF (Direction) of HINNEN AVE (Nearest Cross - Street)

Under normal operating conditions the fire flow available from this 4.0 (Size)

hydrant is 3500 GPM at 20 PSI residual for 2 hours at 72 PSI Static

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PART II (B) **SPRINKLERED BUILDINGS ONLY**

Detector Location:(check one) ☐ Above Grade ☐ Below Grade ☐ Either

Backflow protection required (fire sprinklers/private hydrant): ☐ Yes ☐ No

Type of Protection Required:(check one)

☐ Double Check Detector Assembly ☐ Reduced Pressure Principal Detector Assembly

☐ Other _____ Domestic Meter Size _____

PART II (C)

Suburban Water Systems
Water Purveyor

Signature 12/14/18

December 14, 2018
Date

Vice-President, Engineering
Title

PART III **Conditions for Approval by the Building Department**
(To be Completed by Building Department)

The building permit may be issued for single family dwellings when the above information is complete and shows that the following minimum requirements are met and the property is not in the Very High Fire Hazard Severity Zone.

The water system is capable of delivering at least 1250 GPM at 20 PSI for two hours.

The distance from the structure to the fire hydrant does not exceed 450 feet via vehicular access.

The proposed construction must be within 150 feet of a vehicular access roadway that is a minimum of 20 feet wide, paved with concrete or asphalt and does not exceed 15% grade.

APPROVED BY _____ DATE _____ OFFICE _____

This Information is Considered Valid for Twelve Months

Where the water service does not meet the above requirements for approval by the **Building Department, Fire Prevention Division** approval of the site plan will be required before a Building Permit can be issued by the **Building Department**.

GLENELDER
DEMAND CALCULATIONS

NODE NUMBER	RESIDENTIAL UNITS	AVERAGE DAILY DEMAND RESIDENTIAL (GPM) = ADD DUTY FACTOR * UNITS = 0.41 GPM/UNIT * UNIT	MAXIMUM DAILY DEMAND RESIDENTIAL (GPM) = ADD DUTY FACTOR * UNITS = 0.58 GPM/UNIT * UNIT
J 1	0	0.0 GPM	0.0 GPM
J 2	0	0.0 GPM	0.0 GPM
J 3	0	0.0 GPM	0.0 GPM
J 4	0	0.0 GPM	0.0 GPM
J 5	12	4.9 GPM	7.0 GPM
J 6	0	0.0 GPM	0.0 GPM
J 7	0	0.0 GPM	0.0 GPM
J 8	10	4.1 GPM	5.8 GPM
J 9	9	3.7 GPM	5.2 GPM
J 10	0	0.0 GPM	0.0 GPM
J 11	11	4.5 GPM	6.4 GPM
J 12	0	0.0 GPM	0.0 GPM
J 13	12	4.9 GPM	7.0 GPM
J 14	18	7.4 GPM	10.4 GPM
J 15	14	5.7 GPM	8.1 GPM
TOTALS	86	35.3 GPM	49.9 GPM

GLENELDER
Scenario: Static
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	352	0	518	72
J-2	350	0	518	73
J-3	361	0	518	68
J-4	368	0	518	65
J-5	363	0	518	67
J-6	364	0	518	67
J-7	356	0	518	70
J-8	353	0	518	71
J-9	354	0	518	71
J-10	354	0	518	71
J-11	359	0	518	69
J-12	362	0	518	68
J-13	362	0	518	68
J-14	356	0	518	70
J-15	355	0	518	70

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	352	0	518	72
J-2	350	0	518	73
J-3	361	0	518	68
J-4	368	0	518	65
J-5	363	5	518	67
J-6	364	0	518	67
J-7	356	0	518	70
J-8	353	4	518	71
J-9	354	4	518	71
J-10	354	0	518	71
J-11	359	5	518	69
J-12	362	0	518	68
J-13	362	5	518	68
J-14	356	7	518	70
J-15	355	6	518	70

Label	Diam. (in)	Length (ft)	Start Node	Stop Node	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Hydraulic Grade Begin (ft)	Hydraulic Grade End (ft)	Headloss (Friction) (ft)
P-1	8	249	J-1	J-2	130	8	0.05	518.00	518.00	0.00061
P-3	6	620	J-3	J-4	130	2	0.03	518.00	517.99	0.00055
P-4	6	261	J-4	J-5	130	2	0.03	517.99	517.99	0.00024
P-5	6	36	J-5	J-6	130	7	0.08	517.99	517.99	0.00031
P-6	6	521	J-6	J-7	130	7	0.08	517.99	518.00	0.00409
P-7	8	443	J-7	J-8	130	7	0.05	518.00	518.00	0.00085
P-8	8	153	J-8	J-1	130	24	0.15	518.00	518.00	0.00275
P-9	8	263	J-1	J-9	130	16	0.1	518.00	517.99	0.00226
P-10	8	41	J-9	J-10	130	6	0.04	517.99	517.99	0.00006
P-11	8	247	J-10	J-11	130	6	0.04	517.99	517.99	0.00037
P-12	8	229	J-11	J-12	130	1	0.01	517.99	517.99	0.00000
P-13	8	37	J-12	J-13	130	1	0.01	517.99	517.99	0.00000
P-14	8	358	J-13	J-14	130	1	0.01	517.99	517.99	0.00006
P-15	8	289	J-14	J-9	130	6	0.04	517.99	517.99	0.00049
P-16	8	235	J-13	J-5	130	5	0.03	517.99	517.99	0.00018
P-17	8	13	J-8	R-1	130	35	0.22	518.00	518.00	0.00049
P-2(1)	8	418	J-2	J-15	130	8	0.05	518.00	518.00	0.00098
P-2(2)	8	430	J-15	J-3	130	2	0.01	518.00	518.00	0.00012

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	518	35	518

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	352	0	518	72
J-2	350	0	518	73
J-3	361	0	518	68
J-4	368	0	518	65
J-5	363	7	518	67
J-6	364	0	518	67
J-7	356	0	518	70
J-8	353	6	518	71
J-9	354	5	518	71
J-10	354	0	518	71
J-11	359	6	518	69
J-12	362	0	518	68
J-13	362	7	518	68
J-14	356	10	518	70
J-15	355	8	518	70

Label	Diam. (in)	Length (ft)	Start Node	Stop Node	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Hydraulic Grade Begin (ft)	Hydraulic Grade End (ft)	Headloss (Friction) (ft)
P-1	8	249	J-1	J-2	130	9	0.06	517.99	517.99	0.00073
P-3	6	620	J-3	J-4	130	1	0.01	517.99	517.99	0.00006
P-4	6	261	J-4	J-5	130	1	0.01	517.99	517.99	0.00006
P-5	6	36	J-5	J-6	130	11	0.12	517.99	517.99	0.00061
P-6	6	521	J-6	J-7	130	11	0.12	517.99	518.00	0.00861
P-7	8	443	J-7	J-8	130	11	0.07	518.00	518.00	0.00177
P-8	8	153	J-8	J-1	130	33	0.21	518.00	517.99	0.00513
P-9	8	263	J-1	J-9	130	25	0.16	517.99	517.99	0.00500
P-10	8	41	J-9	J-10	130	9	0.06	517.99	517.99	0.00012
P-11	8	247	J-10	J-11	130	9	0.06	517.99	517.99	0.00079
P-12	8	229	J-11	J-12	130	3	0.02	517.99	517.99	0.00012
P-13	8	37	J-12	J-13	130	3	0.02	517.99	517.99	0.00000
P-14	8	358	J-13	J-14	130	0	0	517.99	517.99	0.00000
P-15	8	289	J-14	J-9	130	10	0.06	517.99	517.99	0.00104
P-16	8	235	J-13	J-5	130	4	0.03	517.99	517.99	0.00018
P-17	8	13	J-8	R-1	130	50	0.32	518.00	518.00	0.00092
P-2(1)	6	418	J-2	J-15	130	9	0.1	517.99	517.99	0.00494
P-2(2)	6	430	J-15	J-3	130	1	0.01	517.99	517.99	0.00006

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	518	50	518

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	352	0	496	62
J-2	350	0	496	63
J-3	361	0	494	58
J-4	368	0	493	54
J-5	363	7	492	56
J-6	364	0	493	56
J-7	356	0	498	61
J-8	353	6	499	63
J-9	354	5	493	60
J-10	354	0	493	60
J-11	359	6	492	58
J-12	362	1250	491	56
J-13	362	7	491	56
J-14	356	10	492	59
J-15	355	8	495	61

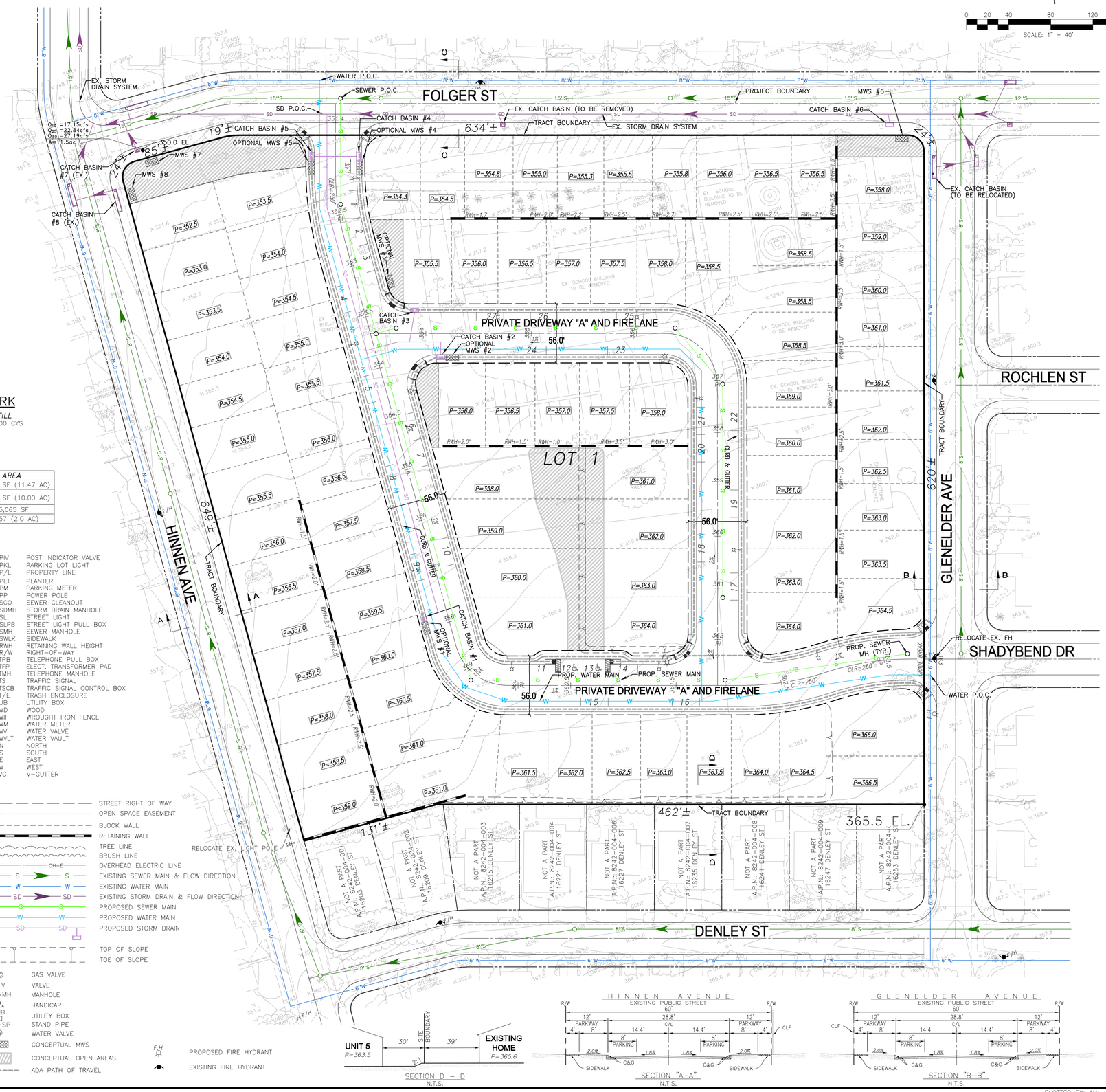
Label	Diam. (in)	Length (ft)	Start Node	Stop Node	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Hydraulic Grade Begin (ft)	Hydraulic Grade End (ft)	Headloss (Friction) (ft) Gradient (ft/ft)
P-1	8	249	J-1	J-2	130	153	0.98	496.03	495.89	0.14139
P-3	6	620	J-3	J-4	130	145	1.65	494.03	492.74	1.29208
P-4	6	261	J-4	J-5	130	145	1.65	492.74	492.19	0.54483
P-5	6	36	J-5	J-6	130	333	3.77	492.19	492.53	0.34427
P-6	6	521	J-6	J-7	130	333	3.77	492.53	497.57	5.03247
P-7	8	443	J-7	J-8	130	333	2.12	497.57	498.62	1.05289
P-8	8	153	J-8	J-1	130	962	6.14	498.62	496.03	2.59180
P-9	8	263	J-1	J-9	130	808	5.16	496.03	492.80	3.23273
P-10	8	41	J-9	J-10	130	450	2.87	492.80	492.63	0.16928
P-11	8	247	J-10	J-11	130	450	2.87	492.63	491.60	1.02902
P-12	8	229	J-11	J-12	130	443	2.83	491.60	490.67	0.92700
P-13	8	37	J-12	J-13	130	807	5.15	490.67	491.13	0.45734
P-14	8	358	J-13	J-14	130	343	2.19	491.13	492.03	0.89938
P-15	8	289	J-14	J-9	130	353	2.25	492.03	492.80	0.76859
P-16	8	235	J-13	J-5	130	471	3.01	491.13	492.19	1.06287
P-17	8	13	J-8	R-1	130	1300	8.3	498.62	499.00	0.37991
P-2(1)	6	418	J-2	J-15	130	153	1.74	495.89	494.92	0.96347
P-2(2)	6	430	J-15	J-3	130	145	1.65	494.92	494.03	0.89606

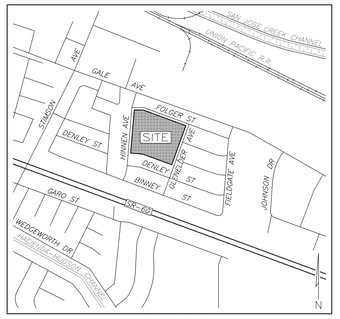
Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	499	1300	499

MAJOR LAND DIVISION
PRELIMINARY VESTING TENTATIVE TRACT MAP 082159
FOR 86 DETACHED CONDOMINIUMS

LOCATED IN THE CITY OF HACIENDA HEIGHTS
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

BEING A SUBDIVISION OF LOT 102 OF TRACT NO. 21865, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 587, PAGES 89 AND 90 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.





VICINITY MAP
N.T.S.

PROPOSED EARTHWORK

	CUT	FILL
RAW VOLUME	9,400 CYS	10,800 CYS
SHORT	1,400 CYS	

LOT SUMMARY

LOT SUMMARY	AREA
GROSS AREA	499,636 SF (11.47 AC)
NET AREA (EXCLUDES RIGHT OF WAY)	435,599 SF (10.00 AC)
NET AVERAGE DWELLING AREA	>5,065 SF
STREET	87,757 (2.0 AC)

LEGEND

AP	ANGLE POINT	PIV	POST INDICATOR VALVE
ASPH	ASPHALT PAVING	PKL	PARKING LOT LIGHT
BFP	BACKFLOW PREVENTOR	P/L	PROPERTY LINE
BC	BUILDING CORNER	PLT	PLANTER
BG	BEGIN	PM	PARKING METER
BLDG.	BUILDING	PP	POWER POLE
BW	BLOCK WALL	SCO	SEWER CLEANOUT
CATV	CABLE T.V. BOX	SDMH	STORM DRAIN MANHOLE
CB	CATCH BASIN	SL	STREET LIGHT
CF	CURB FACE	SLPB	STREET LIGHT PULL BOX
CLF	CHAIN LINK FENCE	SMH	SEWER MANHOLE
CONC	CONCRETE	SWLK	SIDEWALK
DI	DROP INLET	RWH	RETAINING WALL HEIGHT
DRWY	DRIVEWAY	R/W	RIGHT-OF-WAY
EMH	ELECTRICAL MANHOLE	TPB	TELEPHONE PULL BOX
EPB	ELECTRICAL PULL BOX	TFP	ELECT. TRANSFORMER PAD
ELEV	ELEVATION	TMH	TELEPHONE MANHOLE
EP	EDGE OF PAVEMENT	TS	TRAFFIC SIGNAL
FC	FIRE CONNECTION	TSCB	TRAFFIC SIGNAL CONTROL BOX
FH	FIRE HYDRANT	T/E	TRASH ENCLOSURE
FR	FIRE RISER	UB	UTILITY BOX
EVLT	ELECTRICAL VAULT	WD	WOOD
GA	GUY ANCHOR	WIF	WROUGHT IRON FENCE
GM	GAS METER	WM	WATER METER
GP	GUARD POST	WV	WATER VALVE
GUT	GUTTER	WVLT	WATER VAULT
HP	HIGH POINT	N	NORTH
ICB	IRRIGATION CONTROL BOX	S	SOUTH
ICV	IRRIGATION CONTROL VALVE	E	EAST
MB	MAILBOX	W	WEST
MH	MANHOLE	VG	V-GUTTER
O-H	BLDG OVERHANG		

SYMBOLS

CONC	CONCRETE		STREET RIGHT OF WAY
ASPH	ASPHALT		OPEN SPACE EASEMENT
	TREE		BLOCK WALL
	BUSH		RETAINING WALL
	PALM TREE		TREE LINE
o M/B	MAIL BOX		BRUSH LINE
	LIGHT STANDARD	OH-E	OVERHEAD ELECTRIC LINE
TS	TRAFFIC SIGNAL	S	EXISTING SEWER MAIN & FLOW DIRECTION
	STREET LIGHT	W	EXISTING WATER MAIN
	SIGN (10')	SD	EXISTING STORM DRAIN & FLOW DIRECTION
	SIGN (5')	S	PROPOSED SEWER MAIN
	STORM DRAIN MANHOLE	W	PROPOSED WATER MAIN
o S	SIGN	SD	PROPOSED STORM DRAIN
F/H	FIRE HYDRANT		TOP OF SLOPE
	POWER POLE		TOE OF SLOPE
	TRANSFORMER BOX		GAS VALVE
	GUYWIRE/ANCHOR	o V	VALVE
M	METER	o MH	MANHOLE
o	POST (NO LABEL)		HANDICAP
P=XXX.X	PAD ELEVATION	UB	UTILITY BOX
CB	CATCH BASIN	o SP	STAND PIPE
DI	DROP INLET	W	WATER VALVE
LP	LIGHT POLE		CONCEPTUAL MWS
S	SEWER MANHOLE		CONCEPTUAL OPEN AREAS
			ADA PATH OF TRAVEL
		F.H.	PROPOSED FIRE HYDRANT
			EXISTING FIRE HYDRANT

BASIS OF BEARINGS:
THE BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE BEARING OF FOLGER STREET BEING N69°42'37"W AS SHOWN ON THE TRACT MAP FILED IN BOOK 587 AT PAGE 9 OF MAP RECORDS, LOS ANGELES COUNTY, CALIFORNIA.

ALTA SURVEY PROVIDED BY C&V CONSULTING, INC. ON JUNE 15, 2016

BENCHMARK STATEMENT:
CITY OF INDUSTRY BENCH MARK NUMBER C-1 DESCRIBED AS; "BRASS CAP ON S. CB GALE AVE ±15 FT. E. OF E.C.R. OF S.E. CB RETURN ±40 FT E. ℄ SIMSON AVE." ELEVATION = 344.003 (NAVD29)

FLOOD NOTE:
THE SUBJECT PROPERTY FALLS WITHIN "ZONE X" ON A PORTION OF FLOOD INSURANCE RATE MAP NUMBER 06037C1700F OF PANEL 1700 OF 2350, EFFECTIVE SEPTEMBER 26, 2008. AREA DETERMINED TO BE OUTSIDE 0.2% ANNUAL CHANGE FLOODPLAIN.

UTILITY INFORMATION:
WATER – SUBURBAN WATER SYSTEMS
SEWER – COUNTY OF LOS ANGELES SANITATION DISTRICT
GAS – SOUTHERN CALIFORNIA GAS CO.
ELECTRICITY – SOUTHERN CALIFORNIA EDISON CO.
TELEPHONE – AT&T
CABLE TV – CHARTER CO.
FIRE – COUNTY OF LOS ANGELES FIRE DEPARTMENT
SHERIFF – COUNTY OF LOS ANGELES SHERIFF'S DEPARTMENT
SCHOOL – HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT

GENERAL NOTES:
1. APN: 8242-004-900
2. CURRENT ADDRESS: 16234 FOLGER STREET, HACIENDA HEIGHTS, CA 91745
3. EXISTING LAND USE: VACATED EDUCATION/INSTITUTIONAL SCHOOL SITE
4. PROPOSED LAND USE: DETACHED SINGLE FAMILY RESIDENTIAL
5. VESTING TENTATIVE TRACT MAP FOR CONDOMINIUM PURPOSES.
6. NO. OF EXISTING LOTS: 1
7. EXISTING GENERAL PLAN HHIA COMMUNITY: H9–RESIDENTIAL (0–9 DU/NET ACRE)
8. PROPOSED GENERAL PLAN HHIA COMMUNITY: SAME AS EXISTING, NO CHANGE.
9. COMMUNITY PLAN: HACIENDA HEIGHTS
10. EXISTING LA COUNTY ZONE: R1 RESIDENTIAL.
11. NO. OF PROPOSED LOTS: 1
12. NO OF PROPOSED RESIDENTIAL DWELLINGS: 86
13. PROPOSED DENSITY: 8.6 DU'S/NET ACRE
14. PROPOSED DEMOLITION: ALL EXISTING ON-SITE BUILDINGS, PARKING, PAVED AREAS, TREES AND GROUNDS.
15. NO OAK TREES ON SITE.
16. PROPOSED GRADES MAY CHANGE DURING FINAL ENGINEERING PLAN CHECK PROCESS.
17. LOT LINE ADJUSTMENTS IF NECESSARY MAY OCCUR PRIOR TO FINAL ENGINEERING.
18. PROJECT SITE MAY BE DEVELOPED IN MAP OR CONSTRUCTION PHASES. PHASED MAP DEVELOPMENT ALLOWED.
19. DRY UTILITIES MAY BE LOCATED IN COMMON UTILITY TRENCH WHERE POSSIBLE.
20. ALL UTILITIES TO BE UNDERGROUND TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
21. PIPE SIZING FOR STORM DRAIN IMPROVEMENTS SHALL BE DETERMINED DURING FINAL HYDROLOGY REPORT.
22. SEWER SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH SEWER STUDY AND SEWER DIVISION IN LOS ANGELES COUNTY PUBLIC WORKS.
23. WATER SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH WATER STUDY AND WATER DIVISION IN LOS ANGELES COUNTY PUBLIC WORKS AND SUBURBAN WATER SYSTEMS.
24. LANDSCAPE AND IRRIGATION PLAN PROVIDED BY LANDSCAPE ARCHITECT SHALL BE PROVIDED IN ACCORDANCE WITH ADOPTED WATER EFFICIENT LANDSCAPE GUIDELINES.
25. REFER TO LOW IMPACT DEVELOPMENT (LID) PLAN PROVIDES GUIDANCE FOR WATER QUALITY TREATMENT AND MAINTENANCE OF SUCH FACILITIES.
26. MWS DEVICES OR SIMILAR ALONG HINNEN AVENUE, FOLGER STREET, AND GLENELDER AVENUE ADJACENT TO PROJECT SITE TO BE LOCATED BACK OF STREET RIGHT OF WAY TO BE MAINTAINED BY HOA. MWS OR SIMILAR PRODUCT TO ADDRESS CO-MINGLED WATER.
27. CROSS LOT DRAINAGE PERMITTED IN FRONT YARDS IN UNDERGROUND PIPE OR CURB CUT OUTLET FROM RESIDENTIAL LOTS. MAY BE PART OF BMP/LID PLANS.
28. PROPOSED ON-SITE WATER, SEWER, STORM DRAIN AND APPURTENANT WET UTILITIES DEVICES ARE PUBLICLY MAINTAINED BY HOA.
29. OFF-SITE WATER, SEWER, STORM DRAIN AND APPURTENANT WET UTILITIES DEVICES ARE PUBLICLY MAINTAINED (HINNEN AVENUE, FOLGER STREET, GLENELDER AVENUE RIGHT OF WAY AND RELATED EASEMENTS)
30. POST BOX RECEPTACLES TO BE LOCATED BEHIND THE SIDEWALK AND IN GROUPS TO SERVE TWO OR MORE DWELLINGS.
31. RESIDENTIAL CONDOMINIUM PLAN TO BE SUBMITTED TO CA. DRE.
32. PARALLEL PARKING MINIMUM 8'x26'.
33. REFER TO LANDSCAPE PLANS FOR WALL AND FENCE PLAN

UNIT SETBACK INFORMATION:
HINNEN AVE, FOLGER ST, AND GLENELDER AVE
FRONT YARD – 12 FEET
INTERIOR SIDE YARD – 5 FEET
STREET SIDE YARD – 10 FEET
REAR YARD – 13 FEET

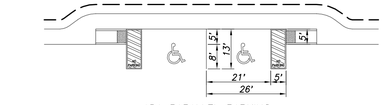
INTERIOR UNITS
FRONT YARD – 12 FEET
SIDE YARD – 5 FEET
REAR YARD – 11 FEET

EASEMENT NOTES
EASEMENTS FOR ACCESS (INGRESS/EGRESS), MAINTENANCE OF DESIGNATED WATER, SEWER, STORM DRAIN, WATER QUALITY NEEDS, OR APPURTENANT FACILITIES ARE TO BE PROVIDED OVER PRIVATE DRIVE WAY AND FIRE LANES FOR EMERGENCY SERVICES, LOS ANGELES COUNTY PUBLIC WORKS, LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, AND DRY UTILITY SERVICES AS DEEMED APPROPRIATE.

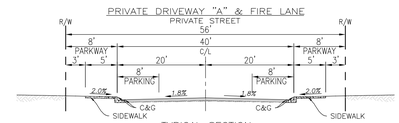
SECTION D – D
N.T.S.

SECTION "A–A"
N.T.S.

SECTION "B–B"
N.T.S.



ADA PARALLEL PARKING
SCALE 1" = 20'



TYPICAL SECTION
N.T.S.

SECTION "C–C"
N.T.S.

7	6	5	4	3	2	1	NO.
							DATE
							REVISIONS

DESIGNED: S.Y./V.V.
DRAWN: AM
CHECKED: V.V.
DATE: 04/04/2018
SCALE: PER PLAN

PREPARED FOR:
LENNAR
15131 ALTON PARKWAY, SUITE 365
IRVINE, CA 92618
(949) 349-8000

PREPARED BY:
HUNSKER & ASSOCIATES IRVINE, INC.
PLANNING • CIVIL ENGINEERING • SURVEYING
Three Hughes • Irvine, California 92618-2027 • 714.751.7373

PROFESSIONAL ENGINEER – SHAWN YU – No. C87239 – Exp. 06/30/19 – STATE OF CALIFORNIA
SHAWN YU R.C.E. 87239
UNDER THE SUPERVISION OF:

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 082159
FOR 86 DETACHED CONDOMINIUMS
16234 FOLGER STREET, HACIENDA HEIGHTS, CA 91745
APN: 8242-004-900

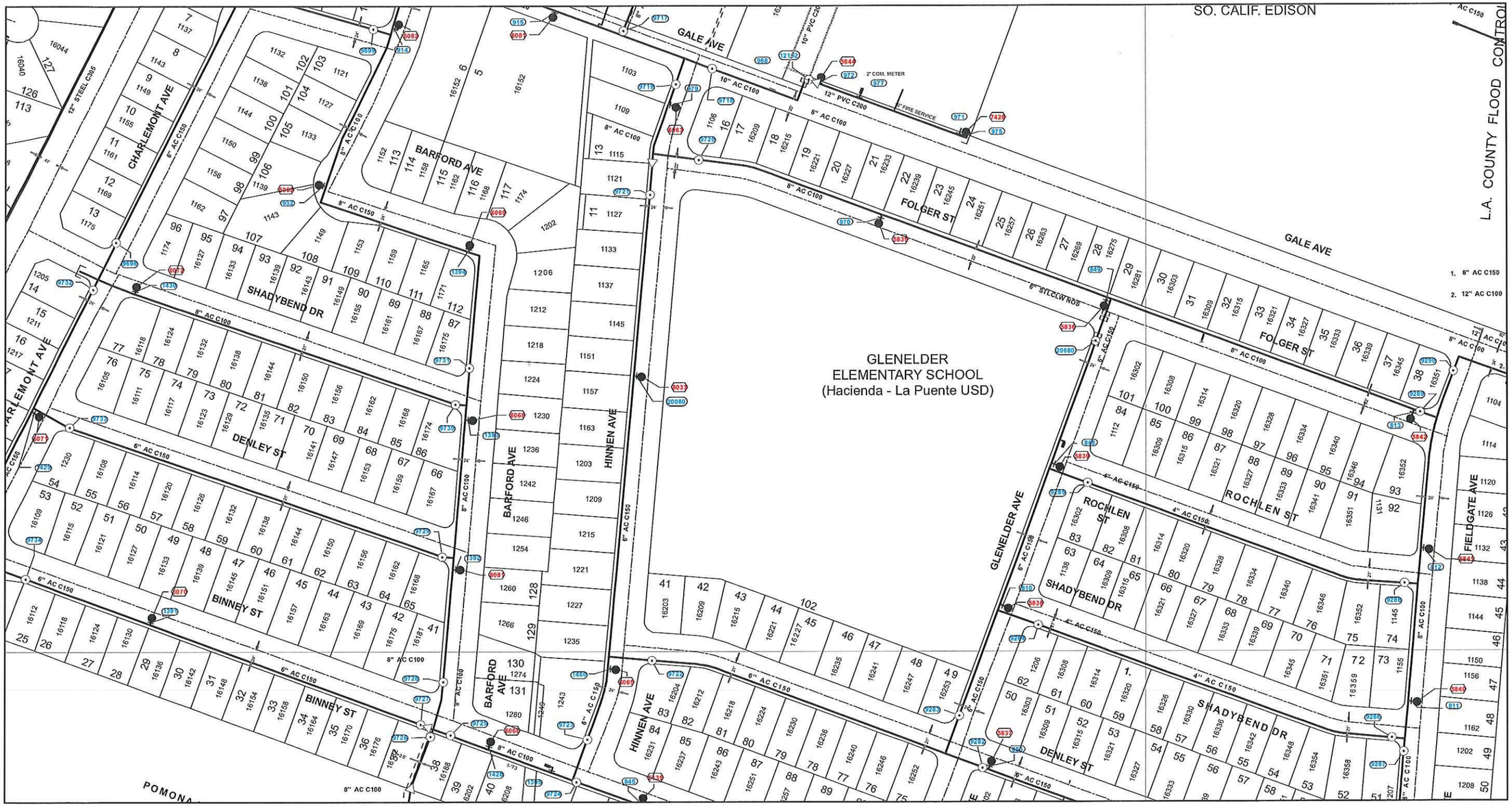
SUBMITTAL DATE:

SHEET 1
OF 3

W.O. 3916-28X GLENELDER PRELIMINARY TENTATIVE TRACT MAP

PLOTTED BY: Alex Martinez DATE: Dec. 18, 2018 01:16:27 PM FILE: F:\1037\Planning\SA_TTM_082159\Exh_TTM\Sht-1_TTM_082159.dwg

Suburban Water Systems



January 31, 2018

1:2,400

0 0.03 0.06 0.12 mi

0 0.0475 0.095 0.19 km

NOTICE

The location of water facilities are plotted using the best available information and are believed to be accurate. Within the area shown there may be abandoned facilities or proposed (or recent) additions which are not shown.

Any excavator shall take all steps necessary to locate and avoid damage to facilities whether or not shown hereon. For pipeline locations call toll free Underground Service Alert, "Dig Alert," at 811, two working days before excavation.

The information given hereon is an accommodation only and will not prejudice the right of Suburban Water Systems to pursue any right of action it may have for any damage to its plant and facilities.

Suburban Water Systems
A SouthWest Water Company

1325 N. Grand Avenue
Suite 100
Covina, CA 91724-4044
Phone 626.543.2500
Fax 626.331.4848
www.swwc.com

November 14, 2018

Mr. Andrew Han
Lennar Homes
15131 Alton Parkway, Suite 365
Irvine, CA 92618

RE: Conditional Statement of Water Service
16234 Folger St., Hacienda Heights, CA; SWS P-728
Tentative Tract Map No. 082159

This is to certify that the subject development is within the certificated service area of Suburban Water Systems. Suburban will operate the proposed water system and will serve water to the proposed unit, subject to, but not limited to the following.

Suburban requires a separate metered service for each dwelling on a lot. If you serve two or more dwellings from one meter Suburban will consider this an illegal connection and this could lead to an interruption to the service that you currently have.

Suburban does not know if major modifications will be needed to meet the Fire Department's fire flow requirements for the project until the Developer submits the Fire Department approved plan that shows the required hydrant locations and fire flow demand and duration. If system modifications are required the developer will be responsible for these costs.

Please be advised that a water service commitment in no way constitutes approval of any development proposal. This Conditional Statement of Water Service expires one year after the date of issuance.

Should you have any questions or need further assistance please feel free to contact Laura Sainz at (626)543-2565.

Regards,
SUBURBAN WATER SYSTEMS

Laura Sainz
Water Service Planner

cc: SWS P-728

COUNTY OF LOS ANGELES FIRE DEPARTMENT
FIRE PREVENTION DIVISION

Land Development Unit
5823 Rickenbacker Road
Commerce, CA 90040
Telephone (323) 890-4243, Fax (323) 890-9783

CASE NUMBER: RPPL2018001820 PROJECT NUMBER: TR82159
PROJECT ADDRESS: 16234 Folger St, Hacienda Heights (APN 8242-004-900)

5. The required fire flow from the public fire hydrant for this development is **1250** gallons per minute at 20 psi for duration of 2 hours. The required fire flow maybe reduced to a minimum 500 gallons per minute once detailed information on the future residential structures is provided.

6. The spacing between existing public fire hydrants for this development is 600 feet. The Fire Department will locate the new public fire hydrants when a formal submittal of a permit application and site plan.

7. All proposed buildings shall be places such that an approved fire apparatus access is within 150 feet of all exterior walls of the first story. This measurement shall be by an approved route around the exterior of the building.

For any questions regarding the report, please contact Juan Padilla at (323) 890-4243 or Juan.Padilla@fire.lacounty.gov.

Reviewed by: Juan Padilla Date: May 8, 2018