

WALTERIA TERRACE GARDEN
SEWER AREA STUDY
EAST SIDE OF HAWTHORNE BLVD. AND 210
FEET NORTH OF ROLLING HILLS ROAD
TORRNACE, CA 90505

PREPARED FOR:
AWAD PROPERTIES, LLC.

PREPARED BY :
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ATTESTATION

This Sewer Area Study has been prepared by, and under the direction of, the undersigned, a duly Registered Civil Engineer in the State of California. Except as noted, the undersigned attests to the technical information contained herein, and has judged to be acceptable the qualifications of a technical specialists providing engineering data for this report, upon which findings, conclusions, and recommendations are based.

Date 10/12/2023

Conway Cooke P.E. CE# 77195 Exp. 3-31-2025



Table of Contents	Page
Introduction	1
Project Site & Description	1
Existing Sewer System	2
Existing Sewer Capacity	3
Proposed Project Sewage Generation	4
Existing Plus Proposed Sewage Flow	4
Findings & Conclusions	5
Appendix Section	

WALTERIA TERRACE GARDEN
SEWER AREA STUDY
TORRANCE, CA 90505
October 12, 2023

Introduction:

This sewer Area Study for “Walteria Terrace Garden” development project (hereinafter referred to as Project) was commissioned by project proponent Awad Properties, LLC. (Awad), Hawthorne, California. The purpose of the study was to identify and evaluate potential sewer capacity issues, infrastructure requirements, and system-wide constraints and impacts that may be associated with development of the subject project. The study findings, conclusions, and recommendations presented in this report are independently derived by Conway Cooke & Associates, and are not necessarily shared by Awad, the City of Torrance, or any other interested parties.

Project Site Description:

The proposed project site is a 24,635 square foot development located east side of Hawthorne Blvd., and 210 feet North of Rolling Hills Road, in the City of Torrance. The proposed development consists of 20 1-bedroom apartment units and 1,608 square feet of commercial development. Access to and from the project site is proposed through one driveway entrance on Hawthorne Boulevard. Figure 1 illustrates the location of the project site. Figure 2 provides an aerial view of the Project Site. Figure 3 illustrates the project architect’s conceptual site plan for Walteria Terrace Garden.

Existing Sewer System:

Project site fronts Hawthorne Blvd. There is an 8" VCP sewer line in Hawthorne Blvd. Direction flow in the sewer line is toward north on Hawthorne to an 8" VCP Sewer pipe in Newton Street, direction of sewer in Newton Street is East to an 8" VCP pipe in Park Street direction of flow in Park Street in North t east-west alley north of 244th Street; 8" VCP pipe in the east-west alley flows toward west to north-south alley. 8" VCP pipe in the north-south alley travels North to 242nd Street ; 8" VCP pipe in 242nd Street flows east to Hawthorne Blvd. 8" VCP main in Hawthorne Blvd., travels north to Pacific Coast Highway County Sanitation Districts Trunk Sewer Line.

Based on a Sewer Area Study Report by KHR associates dated 4/20/2017 (copy enclosed for your reference) a 14 days flow measurement in the vicinity of the project site indicated the flowing flows:

MH No. 1 Newton Street, Sta. 30+494

MH No. 2 Park Street, Sta. 4+86.76

MH No. 3 Alley between Park Street and Hawthorne Blvd., Sta. 4+51.20

MH. No. 4 Hawthorne Blvd., at 242nd Street, Sta. 2+49.25

Revealed the following results:

Since $K=0.232$ is for pipes flowing half full ($D/d = 0.5$), showing that the existing plus proposed peak flows are less than full is equivalent to showing that the sewer would show less than half full ($D/d < 0.5$). Upstream sewers for each of the four manholes are analyzed below for half full conditions based on slope (s) and roughness coefficient (n) provided by the city of Torrance.

Manhole No. 1

$$n = 0.013$$

$$s = 0.01151$$

$$d = 8" = 0.67 \text{ ft}$$

$$\text{Cap} = (k'/n) d^{8/3} X (s^{0.5}) = 0.649 \text{ cfs}$$

Manhole No. 2

$$n = 0.013$$

$$s = 0.03449$$

$$d = 8" = 0.67 \text{ ft}$$

$$\text{Qcap} = (k'/n) d^{8/3} X (s^{0.5}) = 1.124 \text{ cfs}$$

Manhole No. 3

$$n = 0.013$$

$$s = 0.02057$$

$$d = 8" = 0.67 \text{ ft}$$

$$\text{Qcap} = (k'/n) d^{8/3} X (s^{0.5}) = 0.868 \text{ cfs}$$

Manhole No. 4

$$n = 0.013$$

$$s = 0.00507$$

$$d = 8" = 0.67 \text{ ft}$$

$$\text{Qcap} = (k'/n) d^{8/3} X (s^{0.5}) = 0.431 \text{ cfs}$$

Proposed Project Sewage Generation:

For the proposed Project, average and peak sewage generation was calculated using typical flow factors for 1 bed-room apartment:

$$20 \text{ 1bdrm apt.} \times 150 \text{ gal/D.U} = 3000 \text{ Gallons which is } 0.00470 \text{ cfs}$$

$$\text{For Commercial portion is } 100\text{Gal}/1000 \text{ sq. ft of Gross area}$$

$$1,608 \times 100\text{gal}/1000 \text{ sq.ft} = 160.8 \text{ gal which is } 0.0002547 \text{ cfs}$$

Average daily flow was converted to peak daily flow using formula:

$$Q_p = (Q_{avg} \times 2.65)^{0.906} = 90.0050 \times 2.65^{0.906} = 0.01989 \text{ cfs}$$

Existing Plus Proposed Project Sewage Generation:

In order to obtain the total proposed sewage for each Manhole, the maximum measured existing sewage flows as shown on table 1 were added to peak proposed sewage flow of (0.01989 s) and (0.234 cfs) for the proposed Solana Torrance development project, The resulting and proposed sewage flows are as shown in the table below:

Total Flow Generated = 0.234 + 0.01989 = 0.25389 cfs

Table 2 - Existing and Proposed Sewer Flows

MH No.	Existing Max Q (cfs)	Proposed Peak Q (cfs)	Total Peak Q (cfs)
1	0.025	0.25389	0.279
2	0.055	0.25389	0.309
3	0.180	0.25389	0.434
4	0.110	0.25389	0.364

Table 3 provides a comparison of proposed peak flows for each manhole to the capacities given in an earlier section.

As indicated, the existing sewers have more than adequate capacity to handle the additional peak flows from the proposed Project.

Table 3 - Comparison of Proposed Peak Sewer Flows to Sewer Capacities

MH No.	Total Peak Q (cfs)	Qcap (cfs)
1	0.279	0.649
2	0.309	1.124
3	0.434	0.868
4	0.364	0.431

Findings and Conclusion:

Based on the information and calculations presented herein, the following findings are made:

1. As mandated by the City of Torrance, 14-day flow monitoring was conducted for the 8-inch sewer main in, Newton Street, Park Street, the alley between Park Street and Hawthorne Boulevard , Hawthorne Boulevard and 242nd Street to establish the existing flow capacity of the sewer main to which the proposed Project will be connected.
2. Based on the City Standard Plan No. 500, the design peak flow rate is limited by the ratio equal to 0.50.

3. The existing plus proposed peak flows, will run at a peak depth less than $D/d = 0.5$

Based on the above study findings, it is concluded that:

The existing Sewer mains upstream from the four monitored manholes downstream from the project site have sufficient capacity to handle the project peak sewer flow from the Wateria Terrace Garden Project. Therefore, the Terrace Garden project, consisting of 20 units 1-bedroom apartments and 1,608 square feet of Commercial area, will not adversely impact the existing sewer system downstream of the project site.

TOPOGRAPHIC SURVEY

25480 HAWTHORNE BOULEVARD, TORRENCE, CA

DATE: 07.10.2017.

LEGAL DESCRIPTION:

EXHIBIT "A"

LOTS 1 TO 5 IN BLOCK 13, IN THE CITY OF TORRENCE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 17 PAGES 55 AND 56, OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

ALSO THAT PORTION OF THE SOUTHWESTERLY HALF OF CALIFORNIA AVENUE FORMERLY NEWTON STREET, VACATED, ADJOINING SAID LOTS 1 TO 5 INCLUSIVE, AND THE NORTHWEST HALF OF CANYON ROAD, VACATED ADJOINING SAID BLOCK 13 ON THE SOUTHWEST, AS SAID STREETS ARE SHOWN ON THE MAP OF WALTERIA AND THAT WOULD PASS BY A CONVEYANCE OF SAID LOTS;

EXCEPT THEREFROM THOSE PORTIONS THEREOF LYING WESTERLY OF THE EASTERLY LINE OF HAWTHORNE BOULEVARD, 100 FEET WIDE, DESCRIBED AS PARCEL 5-25 IN THE FINAL ORDER OF CONDEMNATION HAD IN LOS ANGELES SUPERIOR COURT CASE NO. 849, 519 A CERTIFIED COPY OF WHICH WAS RECORDED NOVEMBER 27, 1970 AS INSTRUMENT NO. 1919, OFFICIAL RECORDS.

ALSO EXCEPT THEREFROM ALL INTEREST IN AND TO ALL OIL, GAS, PETROLEUM AND OTHER MINERAL OR HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, TOGETHER WITH THE RIGHT TO USE THAT PORTION ONLY OF SAID LAND WHICH UNDERLIES A PLANE PARALLEL TO AND FIVE HUNDRED (500) FEET BELOW THE PRESENT SURFACE OF SAID LAND, FOR THE PURPOSE OF PROSPECTING FOR, DEVELOPING AND/OR EXTRACTING SAID OIL, GAS, PETROLEUM AND OTHER MINERAL AND HYDROCARBON SUBSTANCES FROM SAID LAND BY MEANS OF WELLS DRILLED INTO SAID SUBSURFACE OF SAID LAND FROM DRILL SITES LOCATED ON OTHER LAND, IN AND UNDER SAID LAND, AS RESERVED BY DAN E. BUTCHER, A MARRIED MAN, IN DEED RECORDED MARCH 19, 1984 AS INSTRUMENT NO. 84-332767, OFFICIAL RECORDS. **END OF LEGAL DESCRIPTION**

LAND AREA:

CONTAINING AN AREA OF 24,635.27 SQ. FT., OR 0.5660 ACRES, MORE OR LESS.

BENCHMARK:

BM ID: 705 (NAVD 1986)
FOUND CHISELED "X" + "2" WEST OF WEST END OF CATCH BASIN
ON NW CORNER OF HAWTHORNE BLVD. VIA VALMONTE
ELEV. = 178.79 FT.

SURVEYOR'S NOTE:

THIS MAP IS NOT A BOUNDARY SURVEY. NO PROPERTY CORNERS HAVE BEEN SET AS PART OF THIS WORK.

SURVEY MONUMENTS FOUND IN THE COURSE OF THIS MAPPING HAVE BEEN SET BY OTHERS, AND USED ONLY AS REFERENCE FOR PURPOSES OF TOPOGRAPHIC MAPPING, WITHOUT THE VERIFICATION OF ITS AGREEMENT WITH APPLICABLE LEGAL DESCRIPTIONS AND SENIORITY OF DEEDS.

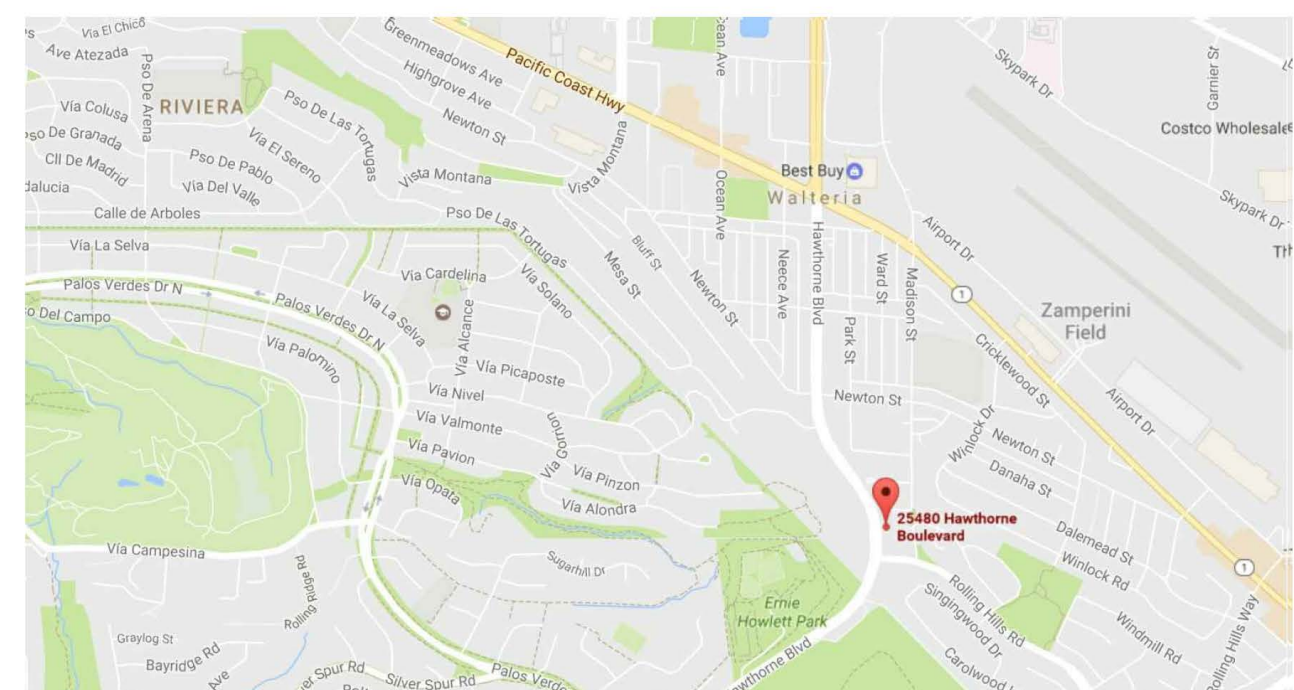
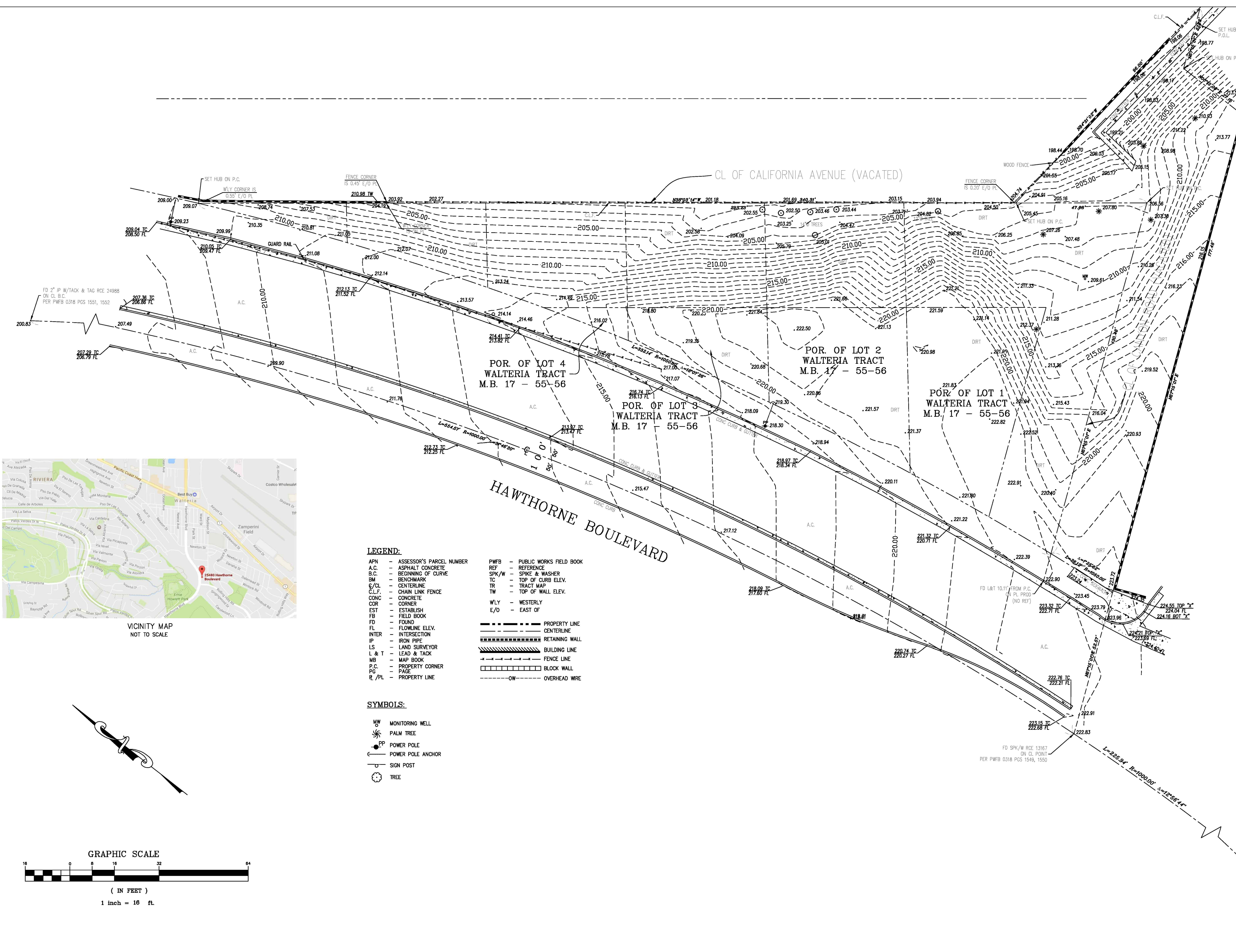
RELATION OF TOPOGRAPHIC FEATURES (FENCES, WALLS, TREES, POWER POLES, ETC.) TO PROPERTY LINES SHOWN ON THIS MAP IS SUBJECT TO THE ADJUSTMENTS TO ANY BOUNDARY SURVEY THAT IS TO BE DONE ON THE PROPERTY.

REFERENCE DOCUMENT:

PER PRELIMINARY TITLE REPORT FROM PROGRESSIVE TITLE COMPANY

ORDER NO. PR1780669

DATED AS OF: APRIL 18, 2017.



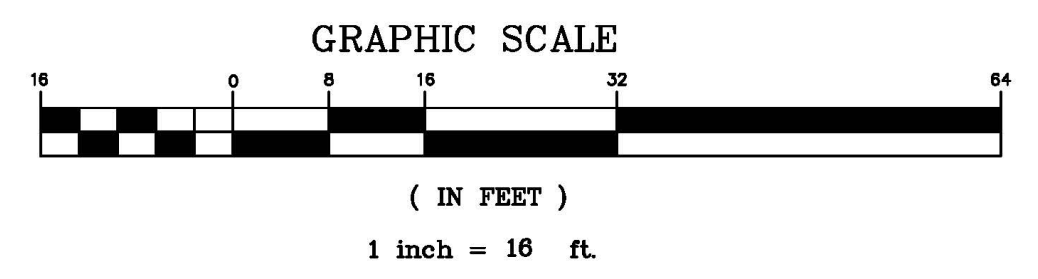
VICINITY MAP
NOT TO SCALE

LEGEND:

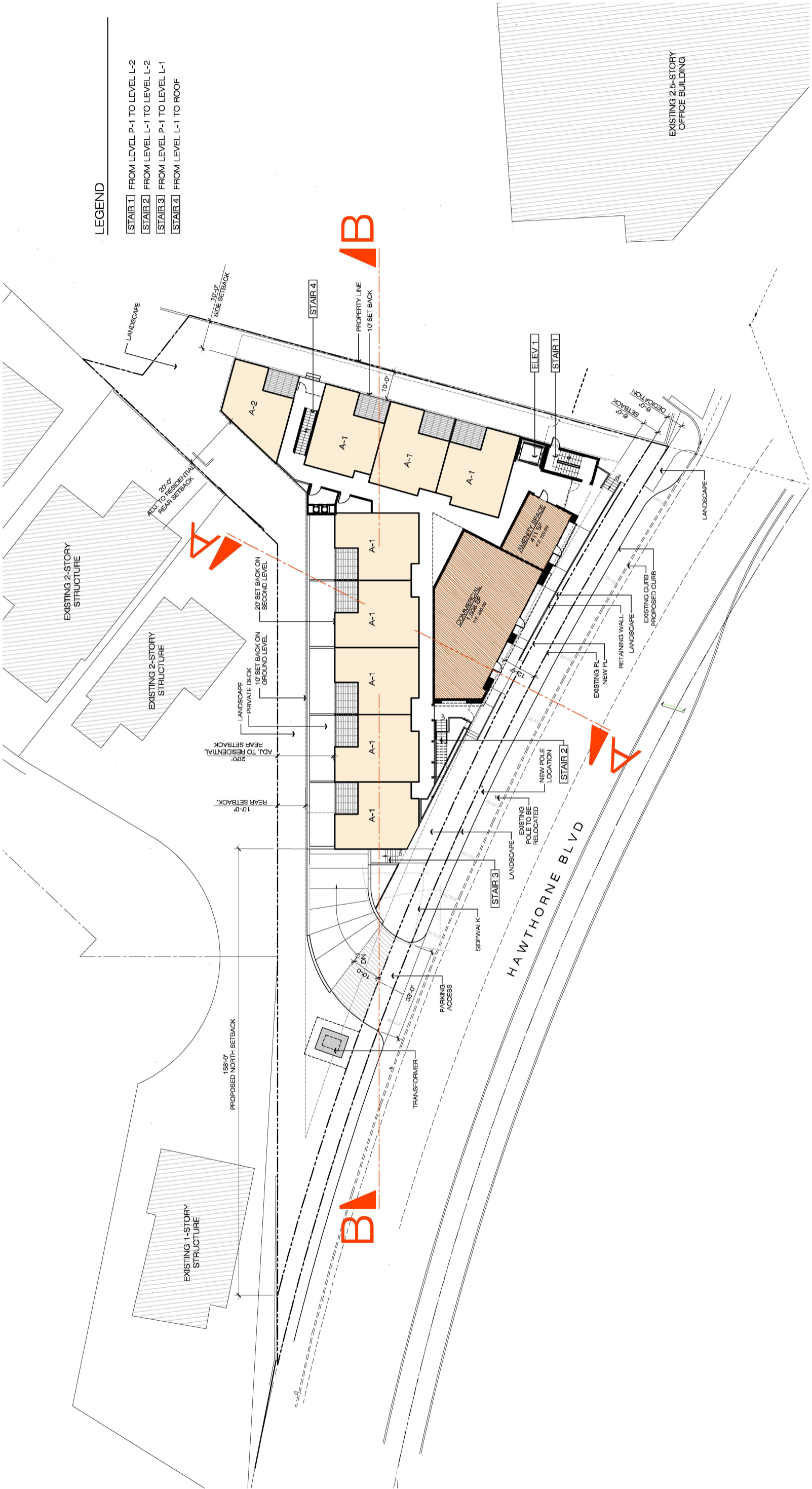
APN - ASSESSOR'S PARCEL NUMBER	PWFB - PUBLIC WORKS FIELD BOOK
A.C. - ASPHALT CONCRETE	REF - REFERENCE
B.C. - BEGINNING OF CURVE	SPK/W - SPIKE & WASHER
BM - BENCHMARK	TC - TOP OF CURB ELEV.
C/CL - CENTERLINE	TR - TRACT MAP
C.L.F. - CHAIN LINK FENCE	TW - TOP OF WALL ELEV.
CONC - CONCRETE	WLY - WESTERLY
COR - CORNER	E/O - EAST OF
EST - ESTABLISH	
FB - FIELD BOOK	
FD - FOUND	
FL - FLOWLINE ELEV.	
INTER - INTERSECTION	
IP - IRON PIPE	
LS - LAND SURVEYOR	
L & T - LEAD & TACK	
MB - MAP BOOK	
P.C. - PROPERTY CORNER	
PG - PAGE	
PL/PL - PROPERTY LINE	

SYMBOLS:

MW	MONITORING WELL
PT	PALM TREE
PP	POWER POLE
PA	POWER POLE ANCHOR
SP	SIGN POST
T	TREE



ROLLING HILLS ROAD
FD SPK/W RCE 13167
ON CL INTER
PER PWFB 0318 PGS 1547, 1548
233.12



LEGEND

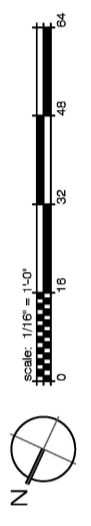
- [STAIR 1] FROM LEVEL P-1 TO LEVEL L-2
- [STAIR 2] FROM LEVEL L-1 TO LEVEL L-2
- [STAIR 3] FROM LEVEL P-1 TO LEVEL L-1
- [STAIR 4] FROM LEVEL L-1 TO ROOF



SITE PLAN
LEVEL L-1

No. ML210521 (CO018) Date: 02.24.2023 SD03

CITY OF TORRANCE - CALIFORNIA



Existing Sewer System

Project site fronts Hawthorne Blvd. There is an 8" VCP sewer line in Hawthorne Blvd. The direction of flow in the sewer line is toward north on Hawthorne to an 8" VCP Sewer pipe in Newton Street, direction of sewer in Newton Street is East to an 8" VC P pipe in Park Street direction of flow in the Park Street is North to east-west alley north of 244th Street; 8" VCP pipe in the east-west alley flows toward west to north-south alley. 8" VCP in the north-south alley travels north to 242nd Street; 8" VCP in 242nd Street east to Hawthorne Blvd. 8" VCP main in Hawthorne Blvd. travels north to Pacific Coast highway County Sanitation Districts Trunk sewer line.

Based on a Sewer Area Study Report by KHR Associates dated 4/20/2017 (copy enclosed for your reference), a 14 days flow measurement in the vicinity of the project site indicated the following flows:

- MH No. 1 Newton Street, Sta. 30+46.94
- MH No. 2 Park Street, Sta. 4+86.76
- MH No. 3 Alley between Park Street and Hawthorne Blvd., Sta. 4+51.20
- MR No. 4 Hawthorne Blvd. at 242nd Street, Sta. 2+49.25

Revealed the following results:

Table - Summary of Manhole Flows

MH. No.	Max. Q (gpm)	Max. Q (cfs)	In. Q (gpm)	Q (cfs)	Ave. Q (gpm)	Ave. Q (cfs)
1	11.47	0.025	0.25	0.00055	2.69	0.006
2	25.06	0.055	1.63	0.00000	7.96	0.018
3	80.00	0.180	0.00	0.00000	25.11	0.056
4	50.04	6.110	7.51	0.01700	28.96	0.064

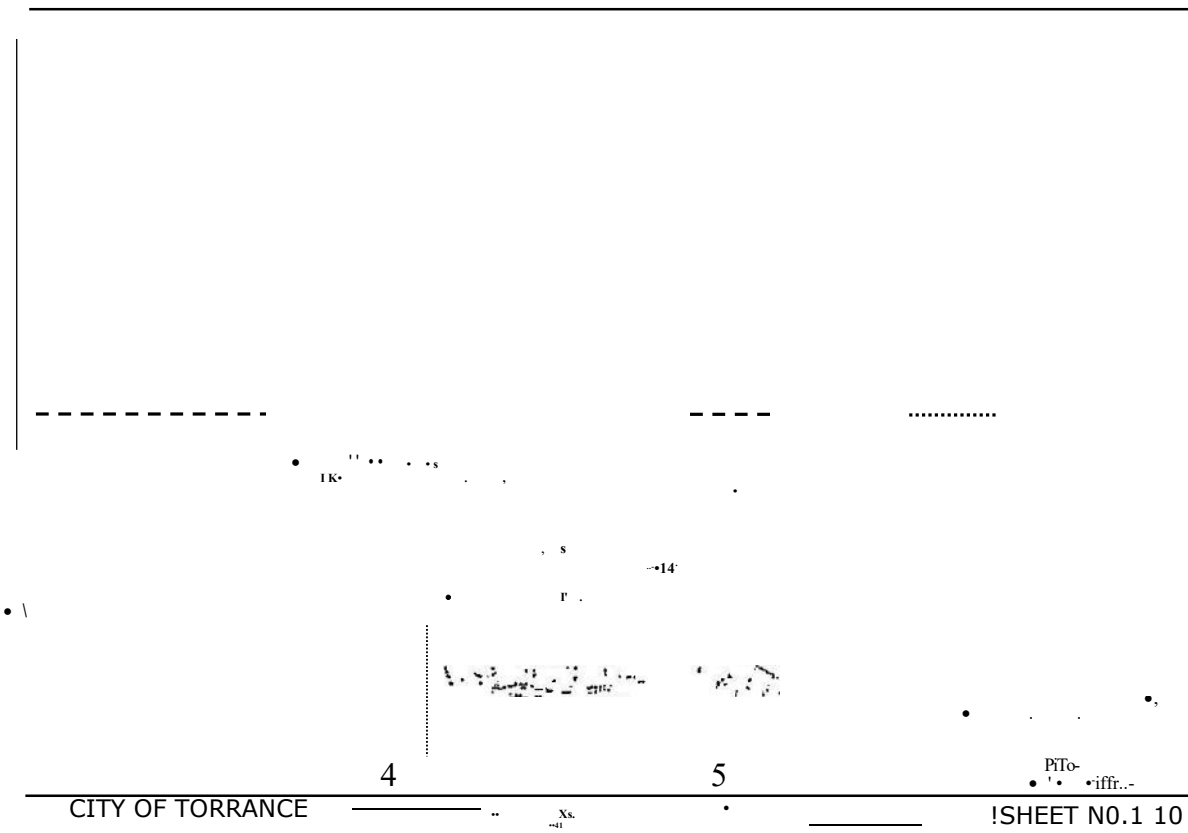


Figure 4 - Manhole No. 1 Location

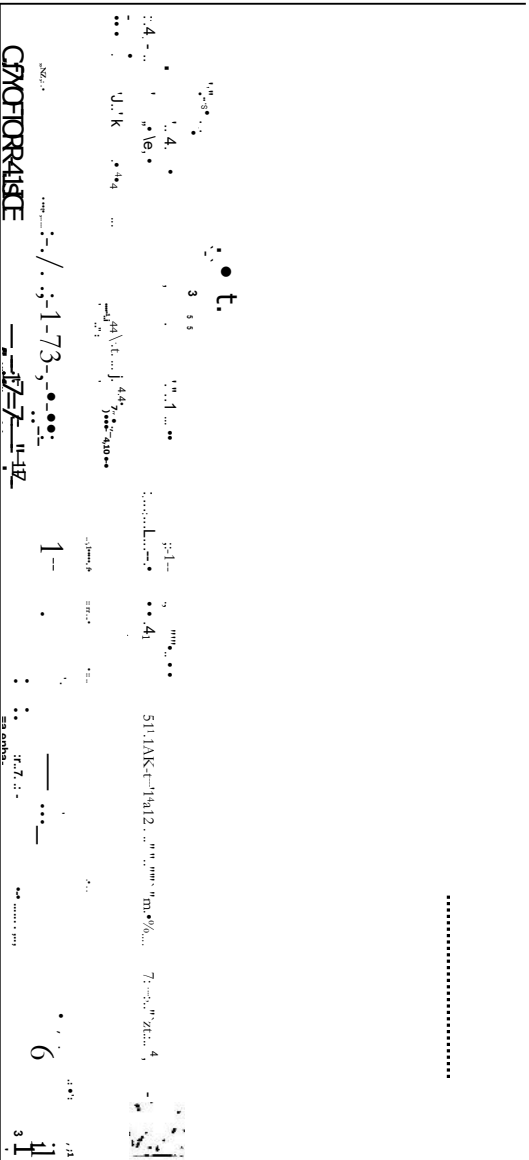
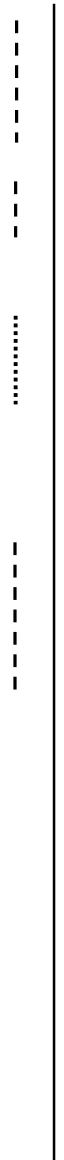


Figure 5 — Manhole Nos. 2, 3 and 4

Locations Existing Sewer Capacity

To calculate the capacity (Qmp), of the misting sewers, the following ton nua was used:
 $O_{mv} = (F^3) \text{ mi}$

$$X \text{ d}^{8/3} \times W^{1/5} \quad O_r \quad (2.65) \times (0_{av}) 0.906$$

Where,

Qmp = Half full pipe flow in cubic feet per second (CPS) or millions of gallons per day (MGD), with 1 CFS = 0.646 MGD

= Conveyance factor, 0.232 for pipes flowing half full (D/d = 0.5)

n = Manning's roughness coefficient = usually around 0.013 for vitrified clay pipe

s = Prie slope in decimal fraction

d = inner diameter of pipe in feet (fr.)

D = Flow depth (ft)

Since K=0232 is for pipes flowing half full (D/d = 0.5), showing that the existing plus proposed peak flows are less than Goo is equivalent TO showing that the sewers would flow less than half full (D/d < 0.5). Upstream sewers for each of the Four manholes are analyzed below for half full conditions based on slope (s) and roughness coefficient (n) provided by the City of Torrance

Manhole No. 1

$$n = 0.013$$

$$s = 0.01151$$

$$d = 8" = 0.67\text{ft}$$

$$Q_{\text{cap}} = (K'/n) \times d^{8/3} \times (S^{0.5}) = 0.649 \text{ cfs}$$

Manhole No. 2

$$n = 0.013$$

$$S = 0.03449$$

$$d = 8" = 0.67 \text{ (ft)}$$

$$Q_{\text{cap}} = (K'/n) \times d^{8/3} \times (S^{0.5}) = 1.124 \text{ cfs}$$

Manhole Na. 3

$$n = 0.013$$

$$s = 0.02057$$

$$d = 8" = 0.67 \text{ ft}$$

$$Q_{\text{cap}} = (K'/n) \times d^{8/3} \times (s^{0.5}) = 0.868 \text{ cfs}$$

Manhole Na. 4

$$n = 0.013$$

$$s = 0.00507$$

$$d = 8" = 0.67 \text{ ft}$$

$$Q_{\text{cap}} = (K'/n) \times d^{8/3} \times (s^{0.5}) = 0.431 \text{ cfs}$$

Proposed Project Sewage Generation:

For the proposed Project, average and peak sewage generation was calculated using typical flow factors for 1-bedroom apartment:

20 1bdrm apt X 150 gal/D.U.= 3,000 Gallons which is 0.00470 cfs

For the Commercial Portion is 100 Gal/1000 sq. ft of Gross area

1,608 X 100 gal/1000 Sq. ft = 574.5 gal which is 0.0002547 cfs

Average daily flow was converted to peak daily flow using the formula:

$$Q_p = (Q_{avg} \times 2.65)^{0.906} = (0.0050 \times 2.65)^{0.906} = 0.01989 \text{ cfs}$$

Existing Plus Proposed Project Sewage Generation:

In order to obtain the total proposed sewage flow for each manhole, the maximum measured existing sewage flows as shown on Table 1 were added to the peak proposed sewage flow of (0.01989cfs) and (0.234 cfs) for the proposed Solana Torrance development project. The resulting existing and proposed sewage flows are as shown in the table below:

$$\text{Total Flow Generated} = 0.234 + 0.01989 = 0.25389 \text{ cfs}$$

Table 2 - Existing and Proposed Sewer Flows

Mil No.	Existing Max Q (cfs)	Proposed peak Q (cfs)	Total peak Q (cfs)
1	0.025	0.25389	0.279
2	0.055	0.25389	0.309
3	0.180	0.25389	0.434
4	0.110	0.25389	0.364

Table 3 provides a comparison of proposed peak flows for each manhole to the capacities given in an earlier section.

As indicated, the existing sewers have more than adequate capacity to handle the additional peak flows from the proposed Project.

Table 3 - Comparison of Proposed Peak Sewer Flows to Sewer Capacities

MH No.	Total Peak Q (cfs)	Qcap (cfs)
1	0.279	0.649
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4	0.364	0.431

Findings and Conclusions:

Based on the information and calculations presented herein, the following findings are made:

1. As mandated by the City of Torrance, 14-day flow monitoring was conducted for the 8-inch sewer mains in, Newton Street, Park Street, the alley between Park Street and Hawthorne Boulevard, and Hawthorne Boulevard at 242nd Street to establish the existing flow capacity of the sewer main to which the proposed Project will be connected.
2. Based on the City Standard Plan No. 500, the design peak flow rate is limited by the D/d ratio equal to 0.50.
3. The existing plus proposed peak sewage flows, will run at a peak depth less than $D/d = 0.50$

Based on the above study findings, it is concluded that:

The existing sewer mains upstream from the four monitored manholes downstream from the Project site have sufficient capacity to handle the project peak sewer flow from the Wateria Terrace Garden project. Therefore, the Terrace Garden project, consisting of 20 units 1-bedroom apartment and 1,608 square feet of Commercial area, will not adversely impact the existing sewer system downstream of the project site.

Estimated Average Daily Sewage Flows for Various Occupancies

Occupancy	Abbreviation	*Average daily flow	
Apartment Buildings:			
Bachelor or Single dwelling units	Apt	100	gal/D.U, .-. it::
1 bedroom dwelling units	Apt	150	gal/D.U. ---, ² -6" c)
2 bedroom dwelling units	Apt	200	gal/D.U. ,-.-, ² 50
3 bedroom or more dwelling units	Apt	250	gal/D.L1, --> cax, 3a) /"P' r-e 54A/f)
Auditoriums, churches, etc,	Aud		5Rg1at
Automobile parking	P	25	gal/1000 sq ft gross floor area
Bars, cocktails lounges, etc.	Bar	20	gal/seat
Commercial Shops & Stores	CS	100	gal/1000 sq ft gross floor area
Hospitals (surgical)	HS	500	gal/bed
Hospitals (convalescent)	HO	85	gal/bed
Hotels	-	150	gal/room
Medical Buildings	MB	300	gal/1000 sq ft gross floor area
Motels	M	150	gal/unit
Office Buildings	Off	200	gal/1000 sq ft gross floor area
Restaurants, cafeterias, etc.	R	50	gal/seat
Schools:			
Elementary or Jr. High	S	10	gal/student
High Schools	HS	15	gal/student
Universities or Colleges	U	20	gal/student
College Dormitories	CD	85	gal/student

*Multiply the average daily flow by 2,5 to obtain the peak flow

Zoning Coefficients

Zone	Coefficient (cfs/Acre)	A-2-2	c..15
Agriculture ----- Residential ⁺ :	0.001		
R-1 -----	0.004		
R-2	0.008		
R-3 -----	0.012		
R-4 ----- 7 ..	0.016*		
Commercial:			
C-1 through C-4	0.015*		
Heavy Industrial:			
MI through 11/1-4	0.021*		

Individual building, commercial or industrial

plant capacities shall be the determining factor when they exceed the coefficients shown

+ Use 0,001 (cfs/unit) for condominiums only

Appendix Section

TORRANCE - MHI

Summary Report

Velocity Feet Per Second
 Level inches
 Flow Gallons Per Minute

Sunday 05109/16	Monday 05109/16	Tuesday 05110/16	Wednesday 05111/16	Thursday 05112/16	Friday 05113/16	Saturday 05114/16
vel	lev	lev	lev	lev	lev	lev
Ho	Ho	Ho	Ho	Ho	Ho	Ho
vel	lev	lev	lev	lev	lev	lev
flo	flo	flo	flo	flo	flo	flo
AM						
Total:						1945 16
Max						040 167 739
Min*						0.12 1 01 0 99
Avg*						0 21 1 26 2 70
PM						
Total:						2224 56
Mar						0 41 1 70 7 67 038 1 56 624
Min'						0.09 0.86 0 so 0.12 1 01 0 114
Avg:						0 26 1 39 3.70 0.23 1.33 3 09
Daily						
Total:						4169 71
Max						040 1 67 739
Min:						0 12 1 01 0 99
Avg:						0 22 1 24 2 90
Weekly						
Total:						
Max						
Avg*						

TORRANCE - MH1 Summary Report

Velocity Feet Per Second
Level inches
Flow Gallons Per Minute

	Sunday 05/15/16			Monday 05/16/16			Tuesday 05/17/16			Wednesday 05/18/16			Thursday 05/19/16			Friday 05/20/16			Saturday 05/21/16		
	vel	lev	flo	vel	lev	flo	vel	lev	flo	vel	lev	flo	vel	lev	flo	vel	lev	flo	vel	lev	flo
AM																					
Total	1295.80			1681.07			1154.10			1319.60			1757.47			1366.40			1802.47		
Max	0.30	1.50	4.20	0.29	1.52	4.66	0.38	1.513	5.90	0.33	1.49	6.09	0.33	1.57	5.45	0.34	1.43	4.81	0.37	1.67	6.19
Min	0.09	0.91	0.64	0.11	0.93	0.88	0.05	0.75	0.25	0.05	0.93	0.66	0.11	0.92	0.84	0.09	0.93	0.67	0.09	0.92	0.68
Avg	0.17	1.13	1.60	0.19	1.19	2.17	0.15	1.04	1.60	0.17	1.13	1.83	0.21	1.22	2.44	0.16	1.12	1.90	0.21	1.22	2.50
PM																					
Total	2177.25			3301.27			2357.85			2191.14			2315.64			2185.69			2267.85		
Max	0.35	1.64	6.04	0.55	1.61	11.47	0.42	1.61	7.32	0.35	1.57	6.05	0.33	1.68	6.17	0.30	1.56	6.15	0.34	1.67	5.47
Min	0.14	1.12	1.43	0.20	1.26	2.87	0.13	1.01	1.10	0.16	1.09	1.70	0.13	1.04	1.23	0.15	1.12	1.56	0.14	1.03	1.43
Avg	0.23	1.32	3.02	0.30	1.49	4.71	0.25	1.33	3.27	0.24	1.32	3.04	0.24	1.33	3.22	0.23	1.32	3.04	0.24	1.34	3.15
Daily																					
Total	3473.08			4953.25			3512.01			3510.74			4073.11			3554.09			4070.32		
Max	0.35	1.64	6.04	0.55	1.81	11.47	0.42	1.61	7.32	0.36	1.57	5.85	0.33	1.57	6.17	0.35	1.56	6.15	0.37	1.67	6.19
Min	4.09	0.91	0.64	0.11	0.93	0.86	0.05	0.76	0.25	0.09	0.93	0.66	0.11	0.92	0.64	0.09	0.93	0.87	0.09	0.92	0.68
Avg	0.20	1.22	2.41	0.25	1.34	3.44	0.20	1.18	2.44	0.20	1.22	2.44	0.23	1.27	2.133	0.21	1.22	2.47	0.22	1.213	2.83
Weekly																					
Total	2.714 Wei																				
Max	0.55	1.61	11.47																		
Min	0.05	0.75	0.25																		
Avg	0.22	1.26	2.60																		

TORRANCE - MH1

Summary Report

Velocity Feet Per Second
 Level Inches
 Flow Gallons Per Minute

	Sunday 05/22/16			Monday 05/23/16			Tuesday 05/24/16			Wednesday 05/25/16			Thursday 05/26/16			Friday 05/27/16			Saturday 05/28/16		
	vet	lev	fio	vet	lev	fio	vet	rev	lto	vet	lev	fio	vet	lev	fio	vet	tev	fio	vet	lev	fio
AM																					
Total'	13 32 22			1477.08			1325 28			1421.10			1355 73			519.70					
Max'	0 32	1 44	453	0 28	1 39	3 56	0 34	1 45	4 73	0 26	1 51	3 72	0 47	1 54	5 67	0 17	2 16	3 03			
Min'	0 10	0 96	0 80	0 12	0 93	0 98	0 09	0 93	0 65	0 09	0 92	0 88	0 08	0 54	0 23	0 00	1 11	0 00			
Avg'	0 10	1 13	182	0 19	1 18	2 05	0 17	1 13	1 84	0 18	1 18	1 97	0 19	1 06	1 88	0 08	1 52	0 94			
PM																					
Wa1'	2120.91			3547.78			2115 51			3658 87			1907 79								
Max'	0 32	1 84	5 18	0 49	1 84	10 55	0 35	1 55	5 72	0 57	1 94	13 24	0 51	2 18	9 86						
Min'	0 14	1 15	1 45	0 18	1 24	2 19	0 14	1 12	1 33	0 19	1 76	2 30	0 05	0 64	0 40						
Avg'	0 23	1 32	2 95	0 30	1 51	4 93	0 23	1 32	2 94	0 31	1 52	EOB	0 17	1 38	2 65						
Daily Total'	3433.13			6024 86			3440 79			5079.96			326.352			519.70					
Max'	0 32	1 84	5 18	0 49	1 84	10 55	0 35	1 55	5 72	0 57	1 94	13 24	0 47	1 54	9 86	0 17	2 16	3 03			
Min'	0 10	0 96	0 80	0 12	0 93	0 98	0 09	0 93	0 65	0 09	0 92	0 68	0 05	0 54	0 23	0 00	1 11	0 00			
Avg'	0 20	1 23	2 38	0 25	1 34	3 49	0 20	1 22	2 39	0 25	1 35	3 53	0 18	1 22	2 27	0 06	1 52	0 94			
Weekly Total'	2.076.20e1																				
Mar	0 57	2 18	13 24																		
Min'	0 00	0 54	0 00																		
Avg'	0 20	1 29	2 89																		

TORRANCE - MH2

Summary Report

Velocity Feet Per Second
 Level inches
 Flow Gallons Per Minute

Sunday 05/08/16	Monday 05/09/16	Tuesday 05/10/16	Wednesday 05/11/16	Thursday 05/12/16	Friday 05/13/16	Saturday 05/14/16							
vel	no	vel	lev	fro	vel	lev	flo	vel	lev	flo	vel	lev	flo
	ley												
AM													
Total*													5355 Ref
Max													1 98 1 47 14 SR
Min:													0 85 65 1 RI
Avg'													117 091 7 93
PM													
Total'										6800 34			6574 41
Max										3 12 1 51 92 68			1 55 1 38 23 12
Min•										0.22 0 51 2 16			0.57 0 67 4 09
n _v										i OR i 04 4.44			1 09 1 0l 9.13
Daily													
Total													1191 0la
Max													1.00 i 47 21 12
Avg													0 57 065 3.51
													1.12 096 855
Weekly													
Total*													
Max													
Min:													
Avg*													

TORRANCE MH2

Summary Report

Velocity Feet Per Second
 Level Inches
 Flow Gallons Per Minute

	Sunday 05/15/16			Monday 05/16/16			Tuesday 05/17/16			Wednesday 05/18/16			Thursday 05/19/16			Friday 05/20/16			Saturday 05/21/16		
	vel	lev	Flo	vel	lev	flo	vel	lev	ilo	vet	lev	Ito	vet	lev	fio	vel	lev	fio	vet	lev	fio
AM																					
Total	4602.97			5274.60			4068.77			1583.94			5810.51			5092.45			4792.16		
Max:	1.50	1.21	10.44	1.97	1.26	21.38	1.90	1.30	18.84	1.44	1.27	12.83	1.97	1.34	25.06	2.04	1.16	17.50	1.41	1.33	12.81
Min:	0.79	0.50	2.32	0.50	0.55	2.67	0.73	0.47	2.22	0.84	0.52	2.40	0.39	0.51	2.03	0.86	0.56	3.13	0.87	0.57	3.07
Avg*:	1.14	0.78	6.39	1.10	0.86	7.33	1.13	0.75	6.76	1.14	0.80	6.50	1.14	0.89	8.07	1.28	0.77	7.07	1.12	0.87	7.10
PM																					
Total:	6101.21			5910.36			7525.81			6153.13			6515.89			5948.17			5945.03		
Max:	1.53	1.37	14.68	1.63	1.65	19.79	1.73	1.35	19.91	1.70	1.21	17.36	1.69	1.32	21.34	1.37	1.39	16.18	1.54	1.37	16.75
Min:	0.49	0.72	2.63	0.27	0.72	1.98	0.35	0.70	2.70	0.70	0.68	4.11	0.20	0.66	1.63	0.79	0.67	4.21	0.45	0.67	3.27
Avg*:	1.05	0.99	8.47	0.89	1.11	8.57	1.22	1.01	10.45	1.10	0.96	8.55	1.17	0.97	9.05	1.10	0.28	6.67	1.03	1.01	8.43
Daily																					
Total:	1070.42e1			1118.500			1239.46E11			1073.71e1			1232. Val			1104.0W			1073.77e1		
Max:	1.58	1.37	14.68	1.97	1.65	21.38	1.90	1.35	19.91	1.70	1.27	17.36	1.97	1.34	25.06	2.04	1.39	17.50	1.54	1.37	16.75
Min:	0.49	0.50	2.32	0.27	0.55	1.98	0.35	0.47	2.22	0.70	0.52	2.40	0.20	0.51	1.63	0.79	0.56	3.13	0.45	0.57	3.07
Avg*:	1.10	0.80	7.43	1.00	0.99	7.93	1.18	0.86	8.61	1.12	0.68	7.53	1.15	0.93	8.56	1.18	0.87	7.83	1.07	0.94	7.78
Weekly																					
Total:	7.912.50e1																				
Max:	2.04	1.65	25.05																		
Min:	0.20	0.47	1.63																		
Avg*:	1.11	0.91	7.90																		

TORRANCE - MH2

Summary Report

Velocity Feet Per Second
 Level Inches
 Flow Gallons Per Minute

	Sunday 05/22/16			Monday 05/23/16			Tuesday 05/24/16			Wednesday 05/25/16			Thursday 05/26/16		Friday 05/27/16			Saturday 05/28/16			
	vet	ley	no	vel	ley	Ho	vel	ley	Ho	vel	ley	flo	vel	flo	vel	ley	flo	vet	fey	flo	
AM																					
Total•	4654.43			4565.56			4632.02			4871.03			4302.66		6 1 8 6 3 9						
Max	1.70	1.26	12.68	1.61	1.21	13.81	1.80	1.21	14.44	1.58	1.31	13.29	1.37	1.63	11.90	2.03	1.61	2.8	4.8	0	
Min•	0.87	0.57	3.48	-0.91	0.56	7	0.79	0.67	3.23	0.91	0.52	2.69	0.85	0.61	3.14	0.00	0.85	0	0	1.0	
Avg•	1.12	0.80	6.48	1.04	0.83	.64	1.14	0.76	6.43	1.15	0.02	6.91	1.13	0.97	7.35	1.00	1.18	5.8			
PM																					
Total•	8162.44			8187.07			8385.31			7245.65			9566.87								
Max	1.58	1.37	17.90	1.73	1.62	21.56	1.65	1.20	15.24	1.52	1.68	18.25	2.32	1.93	28.30						
Min•	0.05	0.70	0.30	0.58	0.85	4.61	0.85	0.77	8.17	0.52	0.79	5.75	0.66	0.00	4.80						
Avg:	1.03	0.99	8.56	1.08	1.16	11.37	1.12	0.98	8.87	1.03	1.18	10.73	1.16	1.21	13.29						
Daily																					
Total•	1081.69e1			1275.26e1			1101.7301			1211.67e1			1386.94e1		6188.39						
Max	1.70	1.37	17.90	1.73	1.62	21.58	1.130	1.21	15.24	1.56	1.68	18.25	1.37	1.63	28.30	2.03	1.61	28.45			
Min•	0.05	0.67	0.30	-0.91	0.56	-7.54	0.79	0.57	3.23	0.52	0.52	2.69	0.66	0.61	3.14	0.00	0.85	0.00			
Avg•	1.07	0.89	7.51	1.06	1.00	8.85	1.13	0.88	7.65	1.09	1.00	8.78	1.15	1.09	10.63	1.00	1.10	10.68			
Weekly																					
Total•	6,675.93'11																				
Max	2.32	1.93	28.46																		
Mitt-	.091	0.52	-7.54																		
Avg•	1.09	0.99	6.80																		

TORRANCE - MH3

Summary Report

Velocity Feet Per Second
level Inches
Flow Gallons Per Minute

	Sunday 05/16/18			Monday 05/18/18			Tuesday 05/17/16			Wednesday 05/18/18			Thursday 05/19/16			Friday 09/120/18			Saturday 05/12/11/16		
	vel	lev	flo	vet	lev	tic	vel	lev	flo	vet	lev	tic	vel	lev	fit)	vel	lev	tic	vel	lev	lio
AM																					
Tot31	121746e1			1666.8201			1327.43e1			1122.38e1			1441.27e1			1905.4401			1255.8091		
Max	2.82	2.10	51.40	3.17	2.08	60.35	3.27	1.90	65.03	3.18	1.60	53.06	3.28	2.12	75.31	3.22	2.01	73.23	3.15	1.69	62.28
Min•	0.09	0.87	0.78	0.48	0.95	3.60	0.08	0.80	0.85	0.08	6.39	0.41	0.08	0.82	0.61	0.00	1.03	0.00	0.09	0.84	0.86
Avg•	1.30	1.31	16.91	1.62	1.31	23.16	1.47	1.22	18.44	1.59	0.99	15.69	1.40	1.26	20.02	1.81	1.33	26.48	1.41	1.21	17.44
PM																					
Total	2294.92e1			1978.7601			2341.0101			2061.04e1			2400. Re I			2002.2101			2793.0801		
Max	2.87	1.89	57.89	2.82	1.81	53.67	2.94	1.80	58.29	2.86	2.15	53.76	2.98	1.92	64.29	2.71	1.76	49.48	2.83	1.97	59.59
Mtn•	1.96	0.94	17.06	1.70	0.86	11.75	1.56	0.95	12.29	1.58	0.77	13.11	0.00	0.91	0.00	0.00	0.91	0.00	1.86	1.00	20.31
Avg•	2.45	1.33	31.87	2.24	1.27	27.48	2.53	1.32	32.51	2.39	1.26	28.63	2.44	1.36	33.34	2.22	1.29	27.81	2.40	1.36	31.85
Daily																					
Total•	3512.38e1			3645.57131			9668.44e1			3183.4201			3841. WeI			3907.6501			3548.81181		
Max	2.07	2.10	57.89	3.17	2.013	80.35	3.27	1.90	65.03	3.18	2.15	53.76	3.28	2.12	75.31	3.72	2.01	73.23	3.15	1.92	62.76
Min•	0.09	0.87	0.78	0.48	0.86	3.60	0.08	0.80	0.66	0.08	0.39	0.41	0.00	0.82	0.00	0.00	0.91	0.00	0.09	0.84	0.86
Avg•	1.87	1.32	24.39	1.93	1.29	25.32	2.00	1.27	25.48	1.99	1.13	22.11	1.92	1.31	26.68	2.02	1.31	27.14	1.90	1.28	24.84
Weekly																					
Folat•	2.530		0.102																		
Max	3.28		215		BO 35																
Min	0.00		0.39		000																
	195		127		25.11																

TORRANCE - MH3

Summary Report

Velocity Feet Per Second
 Level inches
 Flow Gallons Per Minute

fbo

	Sunday 05/22/16			Monday 05/23/16			Tuesday 05/24/16			Wednesday 05/25/16			Thursday 05/26/16			Friday 05/27/16			Saturday 05/28/16	
	vet	lev	Ho	vet	lev	Ho	vet	lev	flo	vet	lev	flo	vet	lev	flo	vet	lev	Ho	vet	lev
AM																				
Total	1182.16e1			1141.8901			1469.480			1882.180			1310.30e1			8038.64				
Max	3.27	1.80	55.65	3.28	1.44	47.49	3.10	1.91	54.89	3.34	1.84	85.08	3.40	1.71	57.28	3.04	1.57		50.76	
Mtn'	0.27	0.76	2.27	0.06	0.78	0.51	0.07	0.84	0.64	0.83	1.03	7.66	0.07	0.90	0.83	0.06	0.78		0.55	
Avg	1.42	1.20	16.42	1.50	1.10	15.86	1.43	1.32	20.41	1.90	1.30	28.14	1.44	1.24	18.20	1.16	1.14		14.10	
PM																				
Total	1794.7901			2027.2901			2465.7301			2144.26e1			2319.43e1							
Max	779	1.49	42.64	2.92	1.94	67.87	3.24	1.71	60.73	2.84	1.66	49.57	2.81	1.71	63.65					
Min	1.46	0.76	10.15	1.23	0.83	7.80	1.93	1.03	17.81	1.36	0.91	9.55	1.66	1.09	15.54					
Avg	2.44	1.14	24.93	2.38	1.23	28.16	2.62	1.33	34.25	2.36	1.28	29.78	2.45	1.34	32.21					
Daily																				
Total	2978.9581			3100.6901			3935.2101			4026.4481			3629.7301			8038.64				
Max	3.27	1.80	58.65	3.26	1.94	67.87	3.24	1.91	68.73	3.34	1.84	65.08	3.40	1.71	57.28	3.04	1.57		50.76	
Min	0.27	0.76	2.27	0.06	0.78	0.61	0.07	0.84	0.64	0.83	1.03	7.66	0.07	0.90	0.83	0.06	0.78		0.55	
Avg	1.93	1.17	20.67	1.94	1.17	22.01	2.02	1.32	27.33	2.14	1.29	27.96	1.94	1.29	25.21	1.16	1.14		14.10	
Weekly total																				
Max	3.40	1.94	67.87																	

Min•	0.06	0.76	0.61
Avg•	193	12.4	23.86

TORRANCE - M1-14

Summary Report

Velocity Feet Per Second
 Level inches
 Flow Gallons Per Minute

	Sunday 05115/16			Monday 05/16/16			Tuesday 05117/16			Wednesday 05/18/16			Thursday 05119/16			Friday 05128/16			Saturday 05/21/18		
	vet	ley		vel	lev	flo	vet	ley	flo	vel	ley	lto	vet	iev	IEo	vet	lev	flo	vet	lev	lto
AM																					
Total'	2030 52e1			1988 5081			1834 Mel			180331e1			1958 91e1			2090 Frei			1819 ⁸ 91		
Max	1.42	2.53	47.52	1.33	2.66	46.44	1.36	2.42	41.99	1.36	2.41	41.62	1.39	2.55	48.14	1.69	2.14	50.04	1.16	2.29	40.81
Mitr	0.66	1.64	12.09	0.58	1.53	11.51	0.66	1.69	12.32	0.86	1.67	12.11	0.56	1.69	12.14	0.66	1.70	17.52	0.74	1.77	14.98
Avg'	1.04	2.09	28.20	1.01	2.08	27.69	0.99	2.02	25.47	0.99	2.01	25.05	1.03	2.05	27.21	1.12	2.04	29.04	1.01	2.00	29.28
PM																					
Total'	2625 15e1			1600 28o1			2284 2091			237897e1			2396 66e1			MP ⁴⁰ 91			2131 1491		
Max	1.50	2.48	48.04	1.56	2.64	48.08	1.43	2.43	43.06	1.36	2.42	41.02	1.59	2.42	48.00	1.43	7.29	39.80	1.25	2.27	38.02
Min*	0.90	1.89	25.10	1.01	0.09	7.51	0.00	1.90	20.78	1.10	1.97	26.09	0.81	1.91	20.83	0.64	2.04	21.11	0.87	2.08	29.70
Avg*	1.26	2.23	36.46	1.24	1.50	20.64	1.15	2.17	31.72	1.20	2.16	33.01	1.25	2.12	33.29	1.19	2.16	32.67	1.08	2.16	29.60
Daily																					
Total'	4665 6781			man 7801			4116 2681			41602081			4355 6781			4443 04e1			3950.9591		
Mar	1.50	2.53	48.04	1.56	2.64	48.08	1.43	2.43	43.06	1.36	2.42	41.82	1.29	2.65	48.14	1.69	2.34	50.04	1.16	2.29	40.81
Mtn	0.66	1.64	12.09	0.58	0.89	7.61	0.66	1.69	12.32	0.66	1.67	12.11	0.56	1.69	12.14	0.66	1.70	17.52	0.74	1.77	14.98
Avg:	1.15	2.16	32.33	1.12	1.79	24.21	1.07	2.10	28.60	1.09	2.08	29.03	1.14	2.09	30.25	1.15	2.10	30.85	1.04	2.08	27.44
Weekly																					
Total'	2.919 05E2																				
Max	1.89	2.66	50.04																		
Min-	0.56	0.89	7.51																		
Avg*	1.11	2.06	78.96																		

TORRANCE - MH4 Summary Report

Velocity Feel. Per Second
Level Inches
Flow Gallons Per Minute

	Sunday 05/22/16			Monday 05/23/16			Tuesday 05/24/16			Wednesday 05/25/16			Thursday 05/26/16			Friday 05/27/16			Saturday 05/28/16		(to	
	vet	lev	flo	vet	rev	Ito	vel	lev	fie	vet	rev	fie	vet	lev	flo	vel	rev	flo	vel	lev		
AM																						
Taint'			19625381			10863001			1797.810			1904.72e1			17101481			1259.27e1				
Mar	1.37	2.48	43.02	1.51	2.27	44.71	1.48	2.16	39.74	1.41	2.16	37.86	1.59	2.23	45.81	1.45	2.16	39.79				
Min•	0.74	1.77	14.98	0.46	1.06	12.98	0.70	1.79	14.3e	0.78	1.77	15.72	0.52	1.79	13.76	0.00	1.77	10.68				
Avg•	1.04	2.05	27.26	1.03	2.04	28.24	1.03	1.97	24.97	1.10	1.96	26.45	0.97	1.97	23.75	0.68	1.92	21.53				
PM																						
Tota1•			22176681			21012001			2211.1901			2104.540			2198.21e1							
Max	1.52	2.27	45.00	1.39	2.18	38.00	1.56	2.16	41.62	1.48	2.13	39.17	1.42	2.16	38.13							
Min•	0.74	1.98	20.85	0.90	1.96	21.00	0.88	1.96	21.20	0.84	1.95	21.28	0.98	1.95	23.03							
Avg•	1.14	2.14	30.80	1.14	2.09	30.02	1.21	2.05	30.71	1.14	2.05	29.23	1.19	2.07	30.53							
Daily																						
Tatar•			418019e1			4060.0e1			4009.00e1			4009.26e1			3908.35e1			1259.2781				
Max	1.52	2.48	45.00	1.51	2.27	44.71	1.55	2.16	41.62	1.48	2.15	39.17	1.59	2.23	45.81	1.45	2.16	39.79				
Min*	0.74	1.77	14.98	0.46	1.06	12.98	0.70	1.79	14.36	0.78	1.77	15.72	0.52	1.79	13.76	0.00	1.77	10.66				
Avg•	1.09	2.10	27.03	1.09	2.06	28.13	1.12	2.01	27.84	1.12	2.01	27.84	1.08	2.02	27.14	0.86	1.92	21.53				
Weekly																						
Toter			2.141			67e2																
Max	1.59		2.48			45.81																
Mitt	0.00		1.77			10.68																
Avg	1.08		2.03			27.01																