

APPENDIX L

DOMESTIC WATER USE AND SEWER CAPACITY STUDIES



514 Prospect Ave
Beach City Health District
Water Memorandum
August 14, 2020

PREPARED BY:

John Labib & Associates
319 Main Street
El Segundo, CA 90245
(213) 239 - 9700

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1. Existing Water Infrastructure

The existing project at 514 Prospect Ave is currently being serviced by Cal Water. An 8” water service currently runs in Prospect Ave which is serving the existing project water demands. The existing property has two domestic water services and two fire services. A 4” domestic water service is located towards the northwest corner of the project and an 8” domestic water service is located at the southwest corner of the project. Similarly, two 8” fire services are located at the northwest corner and southwest corner of the project. These existing connections can be seen in Appendix B. The existing property also has 5 on-site fire hydrants and two off-site hydrants located on the east side of prospect that can serve the project. See table 1 below for summary of existing water demand.

Table 1 – Existing Water Demand

Existing Site				
Land Use	Indoor Water Generation Factor	Units (beds/S.F.)	Water Demand (gal/year) **(gal/day)	Water Demand (gal/min)
510 Prospect Ave (Advanced Imaging Building)				
Medical Office	125,481 gal/yr per 1,000 sf	125,481	15,745,481	29.9572
520 Prospect Ave (Providence Medical Institute Building)				
Medical Office	125,481 gal/yr per 1,000 sf	47,700	5,985,444	11.3878
514 Prospect Ave (Beach City Health Center)				
Hospital	89,814 gal/year per bed	60	5388840	10.2527
Medical Office	125,481 gal/yr per 1,000 sf	158,000	19,825,998	37.7207
*Landscaping Irrigation demand for project site	0.05 gal/day per sf	82,541	** 4,127.05	2.8660
Total			48,452,136	92.1844

Note: Indoor Water demand rates have been referenced from CalEEMod Appendix D, Table 9.1

*Landscaping water use estimate of 2.5 AFY per acre (0.05 gpd/sf) from the City of Redondo Beach Water Front Project Water Supply Assessment (Yarne & Associates, Inc., 2015).

2. Proposed Water Infrastructure

The proposed project demolishes the existing Community Wellness Center, Parking Structure, and Mechanical Equipment building and proposes the construction of an Assisted living center, parking structure, and wellness centers. The occupiable square footages are shown below in Table 2 which summarize the proposed water demands of the project.

Table 2 – Proposed Water Demand

Proposed Site				
ASSISTED LIVING				
Studio	65,154 gal/year per dwelling unit	37	2,410,698	4.5866
1 Bedroom	65,154 gal/year per dwelling unit	100	6,515,400	12.3961
2 Bedroom	65,154 gal/year per dwelling unit	20	1,303,080	2.4792
*Common Areas	125,481 gal/year per 1,000 sf	84,000	10,540,404	20.0540
MEMORY CARE				
2 Bedroom	65,154 gal/year per dwelling unit	60	3,909,240	7.4377
*Common Areas	125,481 gal/year per 1,000 sf	24,500	3,074,285	5.8491
COMMUNITY SERVICES				
Office Building	177,734 gal/year per 1000 sf	6,270	1,114,392	2.1202
PACE				
Medical Office	125,481 gal/yr per 1000 sf	14,000	1,756,734	3.3423
AQUATIC CENTER				
Health Club/ Spa	59,143 gal/year per 1000 sf	27,015	1,597,748	3.0399
Office Building	177,734 gal/year per 1000 sf	1,813	322,232	0.6131
CENTER FOR HEALTH AND FITNESS				
Health Club/ Spa	59,143 gal/year per 1000 sf	20,000	1,182,860	2.2505
WELLNESS PAVILLION				
Office Building	177,734 gal/year per 1000 sf	19,271	3,425,112	6.5166
Research and Development	491,694 gal/year per 1000 sf	5,000	2,458,470	4.6775
*Restaurant	303,534 gal/year per 100 sf	5,782	1,755,034	3.3391
Youth Wellness Center				
*Counseling Center	42,890 gal/year per 1000 sf	9,100	390,299	0.7426
510 Prospect Ave (Advanced Imaging Building to remain)				
Medical Office	125,481 gal/yr per 100 sf	52,000	6,525,012	12.4144

520 Prospect Ave (Providence Medical Institute Building to remain)				
Medical Office	125,481 gal/yr per 100 sf	47,700	5,985,444	11.3878
*Landscaping Irrigation demand for project site	0.05 gal/day per sf	158,254	** 7,912.7	5.4949
Total			57,154,578	108.7416
Total Increase			8,702,442	16.5572

Note: Indoor Water demand rates have been referenced from CalEEMod Appendix D, Table 9.1

* Counseling center has been assumed to have the same demand as a day-care center.

* Restaurant has been conservatively assumed to have the same demand as a High turnover sit down restaurant.

*Landscaping water use estimate of 2.5 AFY per acre (0.05 gpd/sf) from the City of Redondo Beach Water Front Project Water Supply Assessment (Yarne & Associates, Inc., 2015).

* All Landscape areas have been conservatively assumed to be irrigated.

* Summary of water demand uses the proposed program tables for applicable areas noted to have water demands. Some areas have not been included in the water demand as they are assumed to have no water demand.

Irrigation demands noted in the above findings can also be fed from the existing reclaimed water line located in Prospect Ave. This potential connection could further reduce the proposed projects domestic water demand.

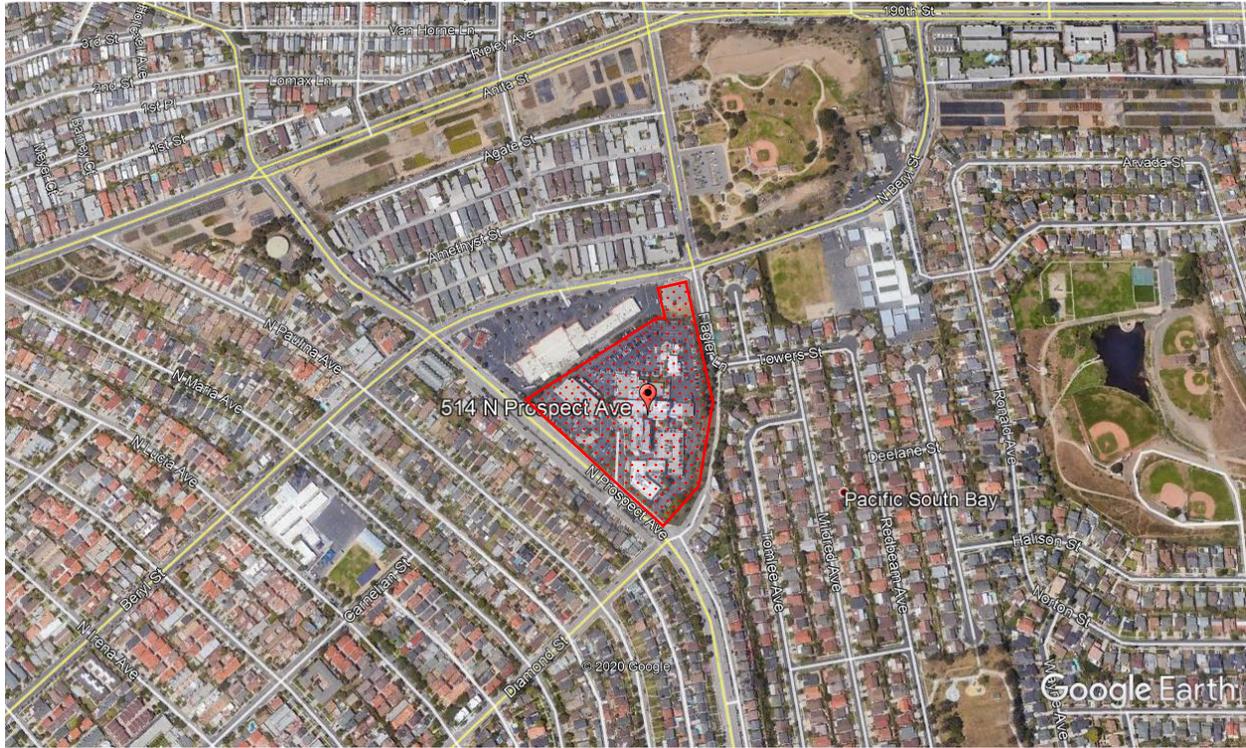
3. Conclusions

The project has been evaluated to determine the if the existing infrastructure has the capacity to serve the proposed project at all phases. To determine this a flow test was performed to find the available flow from the 8” water main in prospect. The fire flow results can be found in Appendix C. The results from this test show that the existing water main can discharge 2,513 gpm while keeping a residual pressure of 20 psi in the water main.

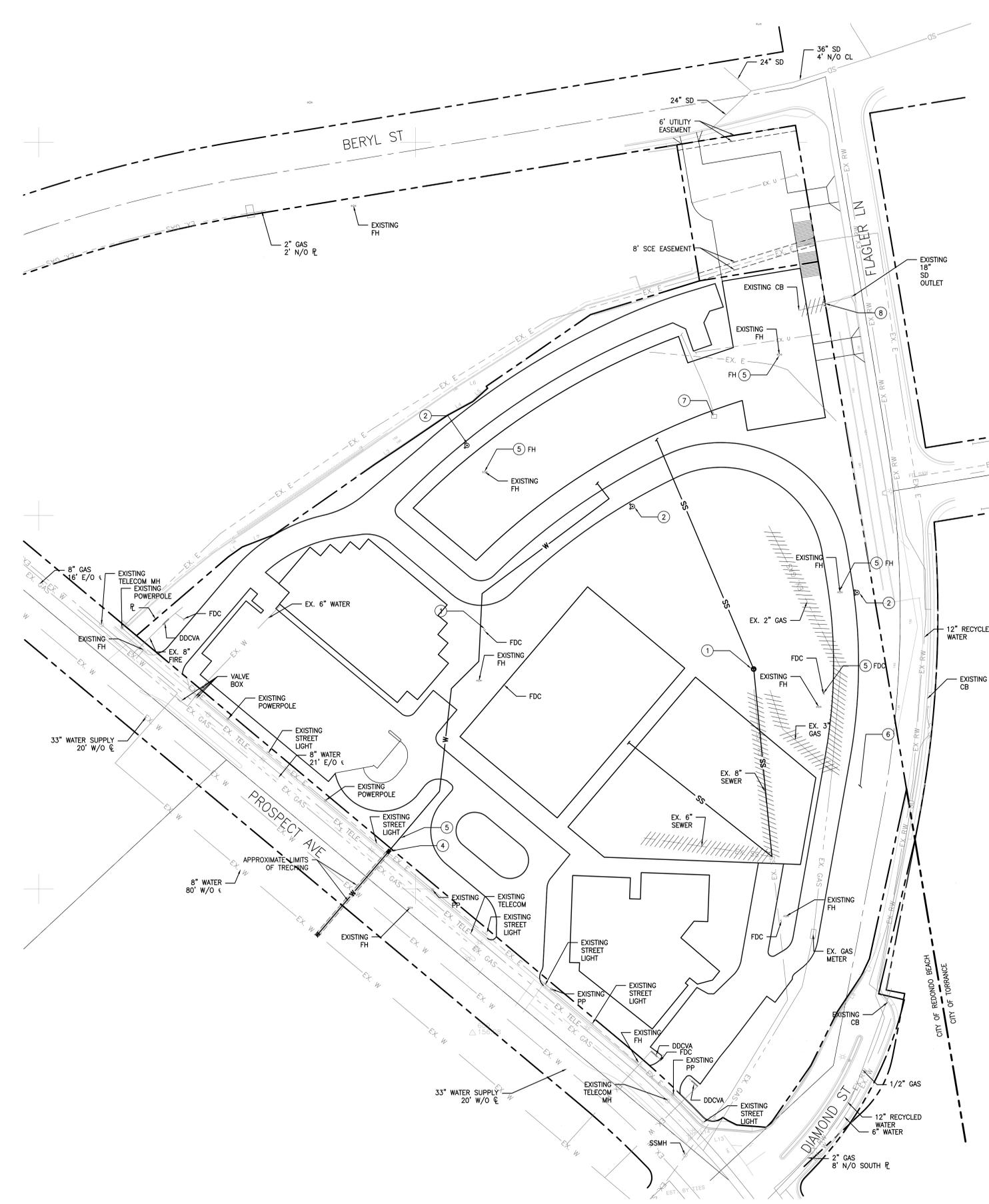
The water flow requirements for the proposed project will be controlled by the fire flow demand which is much larger than the domestic water and irrigation water demand. Fire flow requirements for the project have been estimated using the Los Angeles County Fire Department (LACFD) and are described in the Los Angeles County Fire Code, Appendix B (L AFC). The largest Building apart of the project has an approximate square footage of 290,000 S.F. Assuming a Type 1 construction site of the building, the required fire flow would be 5,750 gpm. A reduction in the required fire flow of up to 75% can be applied to buildings with automatic sprinklers therefore allowing a minimum fire flow requirement of 1,438 gpm. Per the Fire flow test, the maximum allowable flow from the main is 2,513 gpm which is less than the required fire flow. The existing infrastructure should be able to adequately provide water to the project without any constraints.

APPENDIX A
Project Vicinity Map

PROJECT VICINITY MAP



APPENDIX B
Utility Maps



- LEGEND**
- ◆ POINT OF CONNECTION
 - UNKNOWN UTILITY CONTINUATION
 - ||||| BACKFLOW ASSEMBLY
 - ▣ WATER METER
 - ⚡ FIRE DEPARTMENT CONNECTION (FDC)
 - //// DEMO UTILITY PIPE
 - EX. W — EXISTING WATER PIPE
 - EX. SD — EXISTING STORM DRAIN PIPE
 - EX. GAS — EXISTING GAS PIPE
 - EX. TELE — EXISTING TELECOM CONDUIT
 - EX. E — EXISTING ELECTRICAL SERVICE
 - EX. RW — EXISTING RECYCLED WATER
 - EX. U — EXISTING UTILITY (UNKNOWN)
 - W — PROPOSED WATER SERVICE
 - SS — PROPOSED SEWER
 - E — PROPOSED ELECTRICAL SERVICE
 - EASEMENT
- NOTES**
- ① PROPOSED MANHOLE
 - ② PROPOSED FIRE HYDRANT
 - ③ PROPOSED WATER METER
 - ④ PROPOSED BACKFLOW PREVENTER
 - ⑤ DEMO/RELOCATE EXISTING ITEM AS NOTED
 - ⑥ PROPOSED ELECTRICAL YARD.
 - ⑦ EXISTING TRANSFORMER.
 - ⑧ CUT AND CAP EXISTING UTILITY AT NOTED LOCATION.

WATER DEMAND

NOTE:
 *INDOOR WATER DEMAND RATES HAVE BEEN REFERENCED FROM CALEMOD APPENDIX D, TABLE 9.1
 EXISTING WATER SUPPLY CONSISTS OF A 4" SERVICE AND AN 8" SERVICE AND TWO 8" FIRE SERVICES
 ASSUMING ADDITIONAL DEMAND SHOULD BE ABLE TO BE SERVICED WITH AN ADDITIONAL 4" METER

WATER DEMAND	
	DEMAND (GPM)
EXISTING	92
PROPOSED	109
CHANGE	17

SEWER DEMAND

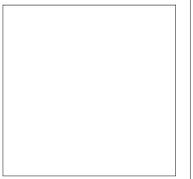
NOTE:
 *SEWAGE GENERATION VALUES SHOWN BELOW HAVE BEEN ESTIMATED USING VALUES FROM LOS ANGELES CEQA THRESHOLDS GUIDE 2006).

SEWER GENERATION	
	MGD
EXISTING	0.069
PROPOSED	0.116
CHANGE	+ 0.047

*EXISTING 8" SEWER WILL NOT NEED TO BE UPGRADED BASED ON CURRENT APPROXIMATION

PAUL MURDOCH ARCHITECTS
 8820 Wilshire Blvd, Suite 330
 Beverly Hills, California 90211
 310 358-0993 F.310 358-9196

THE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT, AND NO PART THEREOF SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT. THESE DRAWINGS OR SPECIFICATIONS SHALL BE VALID ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB AND BE RESPONSIBLE FOR ALL DISCREPANCIES. SHOP DETAILS MUST BE SUBMITTED TO HIS OFFICE BEFORE PROCEEDING.



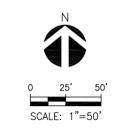
JLA
 John Labib + Associates
 Structural | Shoring | Civil
 Consulting Engineers

319 Main Street
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 Tel: 213.239.9700

JLA Job No. 19725



NO.	DATE	REVISION
BEACH CITIES HEALTH DISTRICT HEALTHY LIVING CAMPUS		
514 NORTH PROSPECT AVE. REDONDO BEACH, CA 90277		
PMA PROJECT NO.	19010	
DRAWING TITLE	UTILITY MAP	
SCALE	AS NOTED	
DATE	01/06/20	
DRAWN	Author	CHECKED
	Author	Checker
SHEET NO.		



APPENDIX C
Fire Flow Test & Reference Material



California Water Service Company

Fire Flow Test

12/3/2019

Test Date: 11/27/2019 Time: 13:00

District: HERMOSA REDONDO

Zone: 300-2

Plat: HER-27-23

Address: 514 N Prospect AVE

Cross Street: Diamond ST

Requested By: Kyle Prouty

Conducted By: Eric L.

Purpose Of Test: Determine Flow Availability

Witnessed By: Calwater: Nick R.

Others: Kyle P.

<u>Outlet No.</u>	<u>Outlet Size</u>	<u>PITOT</u>	<u>Observed</u>	<u>Static Pressure</u>	<u>Residual Pressure</u>	<u>Flow Observed</u>	<u>Flow Avail. @20</u>
<u>Location 1 Hydrant No.:</u> 0688		<u>Address:</u> 510 N. Prospect Ave					
1	4.00	13	1549	69	49	1549	2513
2							
3							
4							

Location 2 Hydrant No.: - Address:

- 1
- 2
- 3
- 4

Location 3 Hydrant No.: - Address:

- 1
- 2
- 3
- 4

Total Flow Observed Available @20: 1549 2513

Remarks: Elevation Difference: 2'. Distance from Static/Residual to FH: 221'. Distance from FH to Street Address P/L: 277'.

Static/Residual Location: 509 N. Prospect Ave

Note:

Regardless of the results of this test, California Water Service Company assumes no liability beyond that stated in the following excerpt from the P.U.C. Tarriff Schedule: "The utility (California Water Service Company) will supply only such water at such pressure as may be available from time to time as a result of its normal operation of the system."

TABLE B105.1(1)
REQUIRED FIRE-FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES

FIRE-FLOW CALCULATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
0-3,600	No automatic sprinkler system	1,000	1
3,601 and greater	No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2) at the required fire-flow rate
0-3,600	Section 903.3.1.3 of the <i>California Fire Code</i> or Section 313.3 of the <i>California Residential Code</i>	500	1/2
3,601 and greater	Section 903.3.1.3 of the <i>California Fire Code</i> or Section 313.3 of the <i>California Residential Code</i>	1/2 value in Table B105.1(2)	1

For SI: 1 square foot = 0.0929 m², 1 gallon per minute = 3.785 L/m.

TABLE B105.1(2)
REFERENCE TABLE FOR TABLES B105.1(1) AND B105.2

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute) ^b	FLOW DURATION (hours)
Type IA and IB ^a	Type IIA and IIIA ^a	Type IV and V-A ^a	Type IIB and IIIB ^a	Type V-B ^a		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	3
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	4
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m², 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

- a. Types of construction are based on the *California Building Code*.
- b. Measured at 20 psi residual pressure.

Table 9.1 Water Use Rates

Land Use Sub Type	Size Metric	Indoor Water, gal/size/year¹	Outdoor Water, gal/size/year¹
Apartments High Rise	Dwelling Unit	65,154	41,075
Apartments Low Rise	Dwelling Unit	65,154	41,075
Apartments Mid Rise	Dwelling Unit	65,154	41,075
Arena	1000sqft	430,770	27,496
Arena	Acre	1,346,157	85,925
Automobile Care Center	1000sqft	94,081	57,663
Bank (with Drive-Through)	1000sqft	39,623	24,285
City Park	Acre		1,191,481
Condo/Townhouse	Dwelling Unit	65,154	41,075
Condo/Townhouse High Rise	Dwelling Unit	65,154	41,075
Congregate Care (Assisted Living)	Dwelling Unit	65,154	41,075
Convenience Market (24 hour)	1000sqft	74,073	45,399
Convenience Market with Gas Pumps	1000sqft	74,073	45,399
Convenience Market with Gas Pumps	Pump	10,457	6,409
Day-Care Center	1000sqft	42,890	110,287
Day-Care Center	Student	2,424	6,234
Day-Care Center	Employee	386	993
Discount Club	1000sqft	74,073	45,399
Electronic Superstore	1000sqft	74,073	45,399
Elementary School	1000sqft	28,997	74,564
Elementary School	Student	2,424	6,234
Elementary School	Employee	29,523	75,917
Fast Food Restaurant w/o Drive Thru	1000sqft	303,534	19,374
Fast Food Restaurant with Drive Thru	1000sqft	303,534	19,374
Free-Standing Discount Store	1000sqft	74,073	45,399
Free-Standing Discount Superstore	1000sqft	74,073	45,399
Gasoline/Service Station	1000sqft	94,081	57,663
General Heavy Industry	1000sqft	231,250	
General Light Industry	1000sqft	231,250	
General Office Building	1000sqft	177,734	108,934
Golf Course	Acre		1,191,481
Golf Course	Hole		8,317,850
Government (Civic Center)	1000sqft	198,660	121,759
Government Office Building	1000sqft	198,660	121,759
Hardware/Paint Store	1000sqft	74,073	45,399
health club	1000sqft	59,143	36,249
High School	1000sqft	33,205	85,383
High School	Employee	39,494	101,555
High School	Student	4,405	11,327
High Turnover (Sit Down Restaurant)	1000sqft	303,534	19,374
Home Improvement Superstore	1000sqft	74,073	45,399
Hospital	1000sqft	125,481	23,901
Hospital	Bed	89,814	17,107
Hotel	Room	25,367	2,819
Industrial Park	1000sqft	231,250	
Junior College (2yr)	1000sqft	49,049	76,718
Junior College (2yr)	Employee	58,339	91,248
Junior College (2yr)	Student	2,141	3,349
Junior High School	1000sqft	20,621	53,025
Junior High School	Student	2,424	6,234
Junior High School	Employee	24,527	63,069

Table 9.1 Water Use Rates

Land Use Sub Type	Size Metric	Indoor Water, gal/size/year¹	Outdoor Water, gal/size/year¹
Library	1000sqft	31,289	48,939
Library	Employee	29,219	45,702
Manufacturing	1000sqft	231,250	
Medical Office Building	1000sqft	125,481	23,901
Mobile Home Park	Dwelling Unit	65,154	41,075
Motel	Room	25,367	2,819
Movie Theater (No Matinee)	1000sqft	401,601	25,634
Movie Theater (No Matinee)	Screen	1,104,404	70,494
Movie Theater (No Matinee)	Seat	9,036	577
Office Park	1000sqft	177,734	108,934
Parking Lot	Space		
Unenclosed Parking Structure	Space		
Enclosed Parking Structure	Space		
Unenclosed Parking with Elevator	Space		
Enclosed Parking with Elevator	Space		
Parking Lot	1000sqft		
Unenclosed Parking Structure	1000sqft		
Enclosed Parking Structure	1000sqft		
Unenclosed Parking with Elevator	1000sqft		
Enclosed Parking with Elevator	1000sqft		
Other Asphalt Surfaces	1000sqft		
Other Non-Asphalt Surfaces	1000sqft		
Parking Lot	Acre		
Unenclosed Parking Structure	Acre		
Enclosed Parking Structure	Acre		
Unenclosed Parking with Elevator	Acre		
Enclosed Parking with Elevator	Acre		
Other Asphalt Surfaces	Acre		
Other Non-Asphalt Surfaces	Acre		
Pharmacy/Drugstore w/o Drive Thru	1000sqft	70,448	43,178
Pharmacy/Drugstore with Drive Thru	1000sqft	70,448	43,178
Place of Worship	1000sqft	31,289	48,939
Place of Worship	Seat	1,580	2,472
Quality Restaurant	1000sqft	303,534	19,374
Racquet Club	1000sqft	59,143	36,249
Recreational Swimming Pool	1000sqft	59,143	36,249
Refrigerated Warehouse-No Rail	1000sqft	231,250	
Refrigerated Warehouse-Rail	1000sqft	231,250	
Regional Shopping Center	1000sqft	74,073	45,399
Research & Development	1000sqft	491,694	
Retirement Community	Dwelling Unit	65,154	41,075
Single Family Housing	Dwelling Unit	65,154	41,075
Strip Mall	1000sqft	74,073	45,399
Supermarket	1000sqft	123,268	3,812
University/College (4yr)	Employee	8,222	12,860
University/College (4yr)	Student	2,141	3,349
University/College (4yr)	1000sqft	11,649	18,221
Unrefrigerated Warehouse-No Rail	1000sqft	231,250	
Unrefrigerated Warehouse-Rail	1000sqft	231,250	

1. Industrial water use is based on a work-year of 250 days per year.

APPENDIX D
Will Serve Letter



CALIFORNIA WATER SERVICE

Rancho Dominguez District 2632 West 237th Street, Torrance, CA 90505
Tel: (310) 257-1400

November 12, 2019

John Labib and Associates
319 Main Street
El Segundo, CA 90245
Attn: Ivan Simental

Will Serve Letter

N. Prospect Avenue, Beryl Street, Flagler Lane and Diamond Street, Redondo Beach, CA
Consulting Engineers: Ivan Simental

Dear Mr. Simental:

As a regulated utility, California Water Service Company Rancho Dominguez district ("Cal Water") has an obligation to provide water service in accordance with the rules and regulations of the California Public Utility Commission (CPUC). Assuming you receive all required permits from the City of Redondo Beach or Los Angeles County, Cal Water will provide water service to the above referenced project. Cal Water agrees to operate the water system and provide service in accordance with the rules and regulations of the California Public Utilities Commission (CPUC) and the company's approved tariffs on file with the CPUC. This will serve letter shall remain valid for **two years** from the date of this letter. If construction of the project has not commenced within this **two year** time frame, Cal Water will be under no further obligation to serve the project unless the developer receives an updated letter from Cal Water reconfirming our commitment to serve the above mentioned project. Additionally, Cal Water reserves the right to rescind this letter at any time in the event its water supply is severely reduced by legislative, regulatory or environmental actions.

Cal Water will provide such potable water at such pressure as may be available from time to time as a result of its normal operations per the company's tariffs on file with the CPUC. Installation of facilities through developer funding shall be made in accordance with the current rules and regulations of the CPUC including, among others, Tariff Rules 15 and 16 and General Order 103-A. In order for us to provide adequate water for domestic use as well as fire service protection, it may be necessary for the developer to fund the cost of special facilities, such as, but not limited to, booster pumps, storage tanks and/or water wells, in addition to the cost of mains and services. Cal Water will provide more specific information regarding special facilities and fees after you provide us with your improvement plans, fire department requirements, and engineering fees for this project.

This letter shall at all times be subject to such changes or modifications by the CPUC as said Commission may, from time to time, require in the exercise of its jurisdiction.



November 12, 2019
Mr. Ivan Simental
Page 2

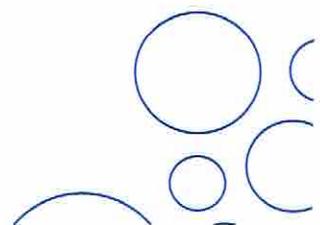
If you have any questions regarding the above, please call me at (310) 257-1400.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel Armendariz", is written over a horizontal dashed line.

Daniel Armendariz
District Manager

cc: Ting He – Cal Water Engineering Dept
Robert Thompson – Operations Manager
Rob Olsen – Superintendent
File





514 Prospect Ave
Beach City Health District
Sewer Capacity Study
February 12, 2021

PREPARED BY:

John Labib & Associates
319 Main Street
El Segundo, CA 90245
(213) 239 - 9700

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Appendix D	Sewer Hydraulic Calculations
Appendix E	Reference Material

1. Site Description

The project site is approximately 10.38 acres and is located at 514 Prospect Ave in the City of Redondo Beach. Refer to Appendix A for the Project Vicinity Map. The lot currently consists of two Medical Office Buildings, a Hospital, a utility equipment building, one above ground parking structure and one subterranean parking structure. The remainder of the site is paved for at grade parking areas with various landscape areas intermittently spaced throughout the site. The northern most part of the property is undeveloped at the current time.

2. Project Description

The proposed project is a partial redevelopment of the existing property. A new Hospital building, wellness facility, and parking structure are proposed and will replace the existing health center, parking garage, and utility equipment building. The medical office buildings and subterranean parking structure will remain for the proposed project. Other site features will include open landscape areas for common use, paved walkways and roads, as well as a new utility yard.

3. Existing Sewer Pipe Capacity Analysis

Per the City of Redondo Beach records of the existing sewer infrastructure, the project site is the most upstream point of an existing 8” sewer main. The sewer flow from the project connects to the existing 8” gravity sewer main located at the intersection of Prospect Ave and Diamond St. The existing 8” sewer main characteristics have been evaluated for the existing and proposed capacity to show that there are no impacts to the existing infrastructure based on the proposed project. The capacity of the pipe was analyzed using Bentley FlowMaster V8i. The results of the capacity analysis are shown below in Table 1 and can be found in Appendix C.

Table 1 – Existing Sewer Main Capacity

Existing Sewer Main Capacity						
	Size (in)	Slope (ft/ft)	Material	Max Flow Depth (in)	Max Flow (gpd)	Max Flow (mgd)
Existing	8	0.034	VCP	4	668,593	0.67

*All values shown here have been shown assuming a maximum flow depth of 4 inches or 50% full flow.

*Existing sewer main characteristics were acquired from City of Redondo Beach records.

4. Proposed Flow Generation

The proposed project Flow generation was calculated based on The Los Angeles CEQA Thresholds Guide, 2006 (see Appendix F). These values assume a peak flow rate which was used to determine the existing and proposed sewer generation from the project. Some areas of the existing and proposed project have been assumed to generate no sewage. These areas have been noted in the following tables. See the Table 2 and 3 for a summary of the existing and proposed flow generation calculations.

Table 2 – Existing Peak Sewer Flows

Existing Site				
Land Use	Generation Factor	Units (beds/S.F.)	Average Daily Peak Flow (gpd)	Average Daily Peak Flow (mgd)
510 Prospect Ave (Advanced Imaging Building)				
Medical Office	250 gpd/ksf	52,000	13,000	0.0130
520 Prospect Ave (Providence Medical Institute Building)				
Medical Office	250 gpd/ksf	47,700	11,925	0.0119
514 Prospect Ave (Beach City Health Center)				
¹ Hospital	75/bed	60	4500	0.0045
Medical Office	250 gpd/ksf	158,000	39,500	0.0395
Total			68,925	0.0689

NOTE: Factors provided in the above table are from Los Angeles CEQA Thresholds Guide (2006).

¹Hospital assumes same use as memory care units.

*Parking garages, Maintenance buildings, & Mechanical rooms are not included in the above summary table. They are assumed to generate no sewage flow.

Table 3 – Proposed Sewer Flows

Proposed Site				
ASSISTED LIVING				
*Studio	80/dwelling unit	37	2,960	0.0030
*1 Bedroom	120/dwelling unit	100	12,000	0.0120
*2 Bedroom	160/dwelling unit	20	3,200	0.0032
Lobby Areas	80/ksf	84,000	6,720	0.0067
MEMORY CARE				
*2 Bedroom	160/dwelling unit	60	9,600	0.0096
Lobby Areas	80/ksf	24,500	1,960	0.0020
COMMUNITY SERVICES				
Office Building	150/ksf	6,270	941	0.0009
PACE				
Medical Office	250 gpd/ksf	14,000	3,500	0.0035
¹AQUATIC CENTER				
² Health Club/ Spa	800/ksf	27,015	21,612	0.0216
Office Building	150/ksf	1,813	272	0.0003
*Lobby Areas	80/ksf	500	40	0.0000
CENTER FOR HEALTH AND FITNESS				
Health Club/ Spa	800/ksf	20,000	16,000	0.0160
³WELLNESS PAVILLION				
*Lobby Areas	80/ksf	12,863	1,029	0.0010
Office Building	150/ksf	7,077	1,062	0.0011
Library	80/ksf	5,000	400	0.0004
*Restaurant	30/seat	290	8,700	0.0087
Youth Wellness Center				
Counseling Center	150/ksf	9,100	1,365	0.0014
510 Prospect Ave (Advanced Imaging Building to remain)				
Medical Office	250 gpd/ksf	52,000	13,000	0.0130
520 Prospect Ave (Providence Medical Institute Building to remain)				
Medical Office	250 gpd/ksf	47,700	11,925	0.0119
Total			116,285	0.1163
Total Increase			47,360	0.0474

NOTE: Factors provided in the above table are from Los Angeles CEQA Thresholds Guide 2006).

1. Back of house areas for the Aquatic center have been assumed to generate no sewage flow.

2. Includes outdoor pool.

3. Sewage generation for Wellness Center does not include Utility rooms. Utility rooms assumed to generate no sewage flow.

*Assisted living uses are assumed to generate the same as apartments.

*Lobby Area include most common space, meeting areas, wait rooms, etc.

*Parking garages, Maintenance buildings, & Mechanical rooms are not included in the above summary table. They are assumed to generate no sewage flow.

*Number of restaurant seats currently unknown. Assumed 20 sf/seat per general seating guidelines. Restaurant includes kitchen areas, restrooms, and serving areas.

A separate sewer generation was provided by Los Angeles County Sanitation District (LACSD). LACSD has estimated the project to generate 130,929 gal/day in sewage. LACSD sewage generation factors vary from the CEQA thresholds used in the previous analysis. This can be seen in the will-serve letter provided in Appendix E. The LACSD sewage generation estimate has also been evaluated in section 5 of this report.

5. Conclusion

Below is a summary of the existing sewer analysis, additional generated load, and future condition hydraulics. Pre and post development flows shown below were estimated based on the values shown above in tables 2 & 3.

Table 4 – LACSD Sewer Capacity Summary

Sewer Capacity Hydraulics						
	Size (in)	Slope (ft/ft)	Material	Peak Flow (gpd)	Flow Depth (in)	D/d (Depth/diameter)
Existing	8	0.034	VCP	68,925	1.23	0.154
LACSD Estimate	8	0.034	VCP	130,929	1.69	0.211
Δ					0.46	0.057

Proposed flow is less than 50% capacity so existing sewer has the capacity for the proposed project.

Table 5 – Sewer Capacity Summary

Sewer Capacity Hydraulics						
	Size (in)	Slope (ft/ft)	Material	Peak Flow (gpd)	Flow Depth (in)	D/d (Depth/diameter)
Existing	8	0.034	VCP	68,925	1.23	0.154
Proposed	8	0.034	VCP	116,285	1.59	0.199
Δ					0.36	0.045

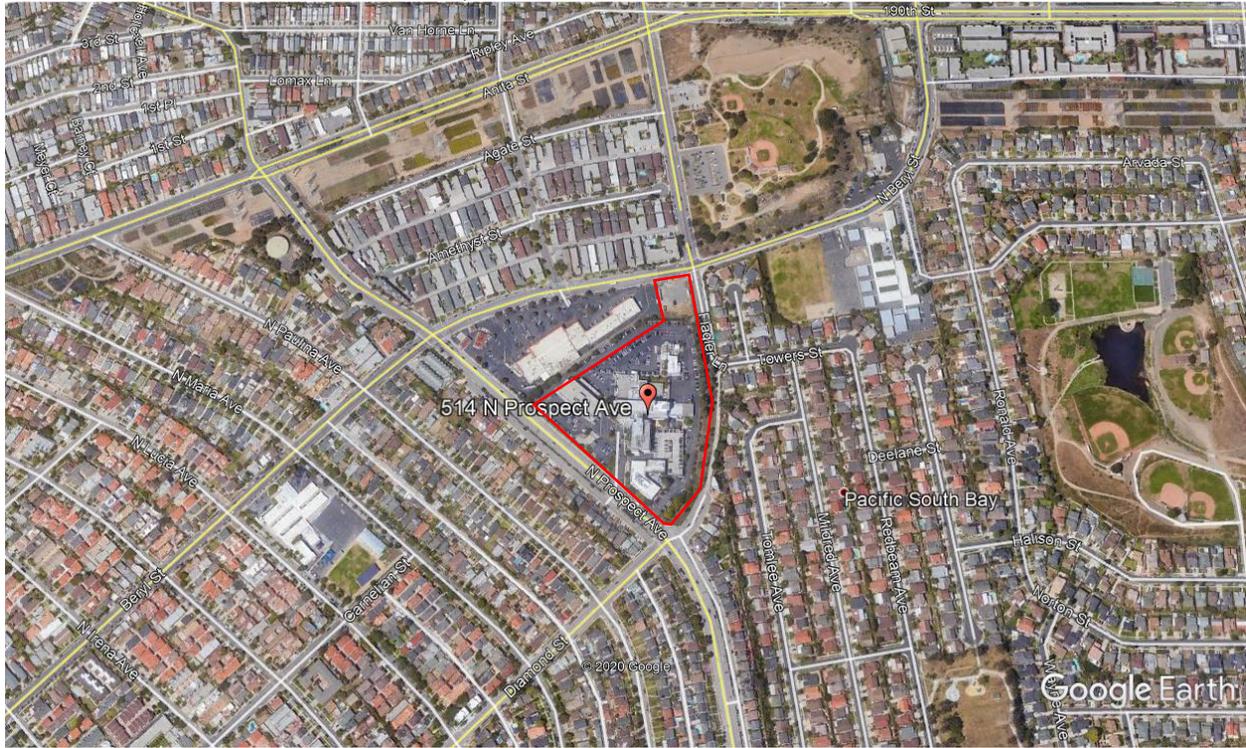
Proposed flow is less than 50% capacity so existing sewer has the capacity for the proposed project.

As shown above the proposed project assumes a 69% (90% for LACSD estimate) increase from the existing to proposed condition. The existing sewer main and infrastructure has been evaluated and found that the increase in flow based on the proposed project does not pose any issues to the existing infrastructure. Additionally, the project may also provide an additional sewer connection to the 8” sewer main in Beryl St. By providing an additional connection, this will disperse some of the sewage load on the existing infrastructure which will reduce the impact from the proposed project. The proposed flow is well below a 50% flow depth and the existing infrastructure has sufficient capacity to serve the proposed project.

APPENDIX A

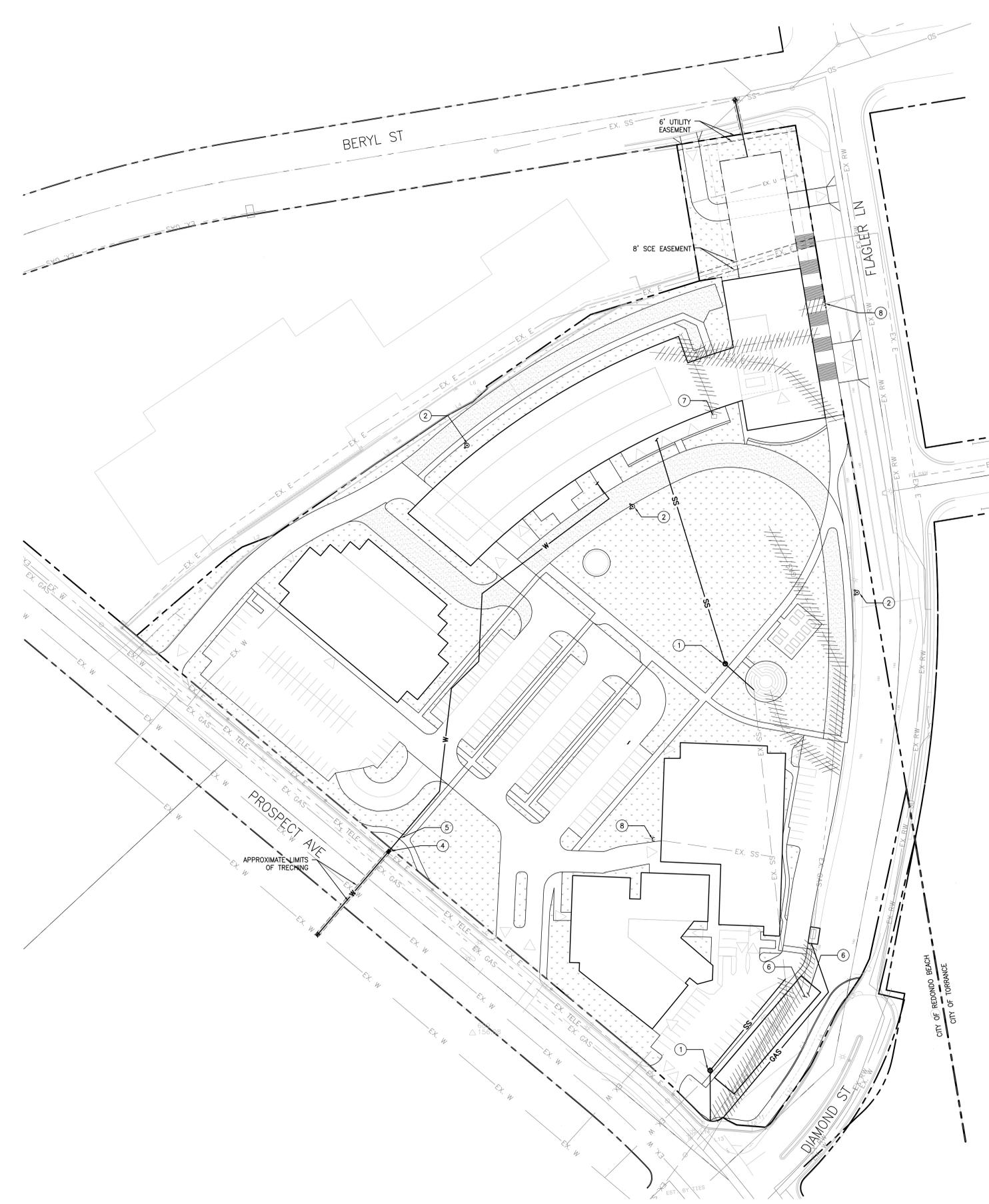
Project Vicinity Map

PROJECT VICINITY MAP



APPENDIX B

City of Redondo Beach Existing Sewer Maps



LEGEND

- POINT OF CONNECTION
- UNKNOWN UTILITY CONTINUATION
- BACKFLOW ASSEMBLY
- WATER METER
- FIRE DEPARTMENT CONNECTION (FDC)
- DEMO UTILITY PIPE
- EX. W — EXISTING WATER PIPE
- EX. SD — EXISTING STORM DRAIN PIPE
- EX. GAS — EXISTING GAS PIPE
- EX. TELE — EXISTING TELECOM CONDUIT
- EX. E — EXISTING ELECTRICAL SERVICE
- EX. RW — EXISTING RECYCLED WATER
- EX. U — EXISTING UTILITY (UNKNOWN)
- W — PROPOSED WATER SERVICE
- SS — PROPOSED SEWER
- E — PROPOSED ELECTRICAL SERVICE
- GAS — PROPOSED GAS SERVICE
- EASEMENT

NOTES

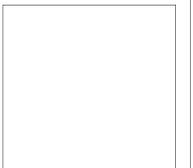
- ① PROPOSED MANHOLE
- ② PROPOSED FIRE HYDRANT
- ③ PROPOSED WATER METER
- ④ PROPOSED BACKFLOW PREVENTER
- ⑤ DEMO/RELOCATE EXISTING ITEM AS NOTED
- ⑥ PROPOSED ELECTRICAL YARD.
- ⑦ EXISTING TRANSFORMER.
- ⑧ CUT AND CAP EXISTING UTILITY AT NOTED LOCATION.

▲

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LFA

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JLA Job No. 19725



NOT FOR CONSTRUCTION

NO.	DATE	REVISION

BEACH CITIES HEALTH DISTRICT HEALTHY LIVING CAMPUS

514 NORTH PROSPECT AVE.
REDONDO BEACH, CA 90277

PMA PROJECT NO.
19010

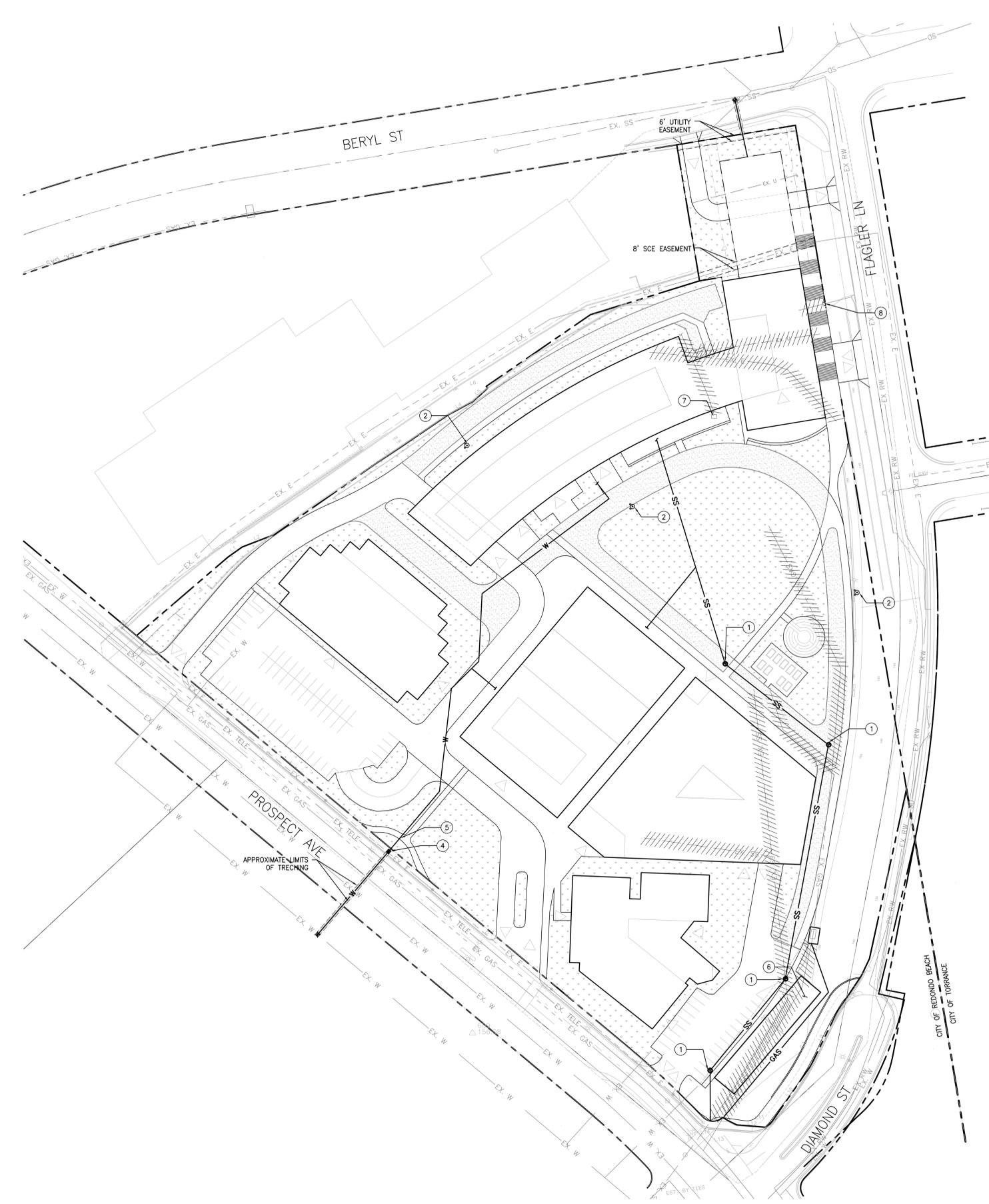
DRAWING TITLE
UTILITY MAP

SCALE
AS NOTED

DATE
01/06/20

DRAWN Author	CHECKED Checker
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SHEET NO.



LEGEND

- ◆ POINT OF CONNECTION
- UNKNOWN UTILITY CONTINUATION
- ▬ BACKFLOW ASSEMBLY
- ▨ WATER METER
- ⚡ FIRE DEPARTMENT CONNECTION (FDC)
- ▨ DEMO UTILITY PIPE
- EX. W — EXISTING WATER PIPE
- EX. SD — EXISTING STORM DRAIN PIPE
- EX. GAS — EXISTING GAS PIPE
- EX. TELE — EXISTING TELECOM CONDUIT
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- EX. RW — EXISTING RECYCLED WATER
- EX. U — EXISTING UTILITY (UNKNOWN)
- W — PROPOSED WATER SERVICE
- SS — PROPOSED SEWER
- E — PROPOSED ELECTRICAL SERVICE
- GAS — PROPOSED GAS SERVICE
- - - EASEMENT

NOTES

- ① PROPOSED MANHOLE
- ② PROPOSED FIRE HYDRANT
- ③ PROPOSED WATER METER
- ④ PROPOSED BACKFLOW PREVENTER
- ⑤ DEMO/RELOCATE EXISTING ITEM AS NOTED
- ⑥ PROPOSED ELECTRICAL YARD.
- ⑦ EXISTING TRANSFORMER.
- ⑧ CUT AND CAP EXISTING UTILITY AT NOTED LOCATION.

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NOT FOR CONSTRUCTION
SIGN DATE: 02/24/2021

NO. DATE REVISION

BEACH CITIES HEALTH DISTRICT HEALTHY LIVING CAMPUS

514 NORTH PROSPECT AVE.
REDONDO BEACH, CA 90277

PMA PROJECT NO.
19010

DRAWING TITLE
UTILITY MAP

SCALE
AS NOTED

DATE
01/06/20

DRAWN CHECKED
Author Checker

SHEET NO.

APPENDIX C

Sewer Hydraulic Calculations

Existing Sewer Main Maximum Capacity

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.014	
Channel Slope	0.03400	ft/ft
Normal Depth	4.00	in
Diameter	8.00	in

Results

Discharge	668593.15	gal/day
Flow Area	0.17	ft ²
Wetted Perimeter	1.05	ft
Hydraulic Radius	2.00	in
Top Width	0.67	ft
Critical Depth	0.48	ft
Percent Full	50.0	%
Critical Slope	0.01112	ft/ft
Velocity	5.93	ft/s
Velocity Head	0.55	ft
Specific Energy	0.88	ft
Froude Number	2.04	
Maximum Discharge	2.23	ft ³ /s
Discharge Full	2.07	ft ³ /s
Slope Full	0.00850	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	50.00	%
Downstream Velocity	Infinity	ft/s

Existing Sewer Main Maximum Capacity

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	4.00	in
Critical Depth	0.48	ft
Channel Slope	0.03400	ft/ft
Critical Slope	0.01112	ft/ft

Existing Sewer Hydraulics

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.014	
Channel Slope	0.03400	ft/ft
Diameter	8.00	in
Discharge	68925.00	gal/day

Results

Normal Depth	1.23	in
Flow Area	0.03	ft ²
Wetted Perimeter	0.54	ft
Hydraulic Radius	0.76	in
Top Width	0.48	ft
Critical Depth	0.15	ft
Percent Full	15.4	%
Critical Slope	0.00757	ft/ft
Velocity	3.12	ft/s
Velocity Head	0.15	ft
Specific Energy	0.25	ft
Froude Number	2.06	
Maximum Discharge	2.23	ft ³ /s
Discharge Full	2.07	ft ³ /s
Slope Full	0.00009	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	15.43	%
Downstream Velocity	Infinity	ft/s

Existing Sewer Hydraulics

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.23	in
Critical Depth	0.15	ft
Channel Slope	0.03400	ft/ft
Critical Slope	0.00757	ft/ft

Proposed Sewer Hydraulics

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.014	
Channel Slope	0.03400	ft/ft
Diameter	8.00	in
Discharge	116285.00	gal/day

Results

Normal Depth	1.59	in
Flow Area	0.05	ft ²
Wetted Perimeter	0.62	ft
Hydraulic Radius	0.96	in
Top Width	0.53	ft
Critical Depth	0.19	ft
Percent Full	19.9	%
Critical Slope	0.00745	ft/ft
Velocity	3.64	ft/s
Velocity Head	0.21	ft
Specific Energy	0.34	ft
Froude Number	2.10	
Maximum Discharge	2.23	ft ³ /s
Discharge Full	2.07	ft ³ /s
Slope Full	0.00026	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	19.93	%
Downstream Velocity	Infinity	ft/s

Proposed Sewer Hydraulics

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.59	in
Critical Depth	0.19	ft
Channel Slope	0.03400	ft/ft
Critical Slope	0.00745	ft/ft

LACSD Estimate Sewer Hydraulics

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.014	
Channel Slope	0.03400	ft/ft
Diameter	8.00	in
Discharge	130929.00	gal/day

Results

Normal Depth	1.69	in
Flow Area	0.05	ft ²
Wetted Perimeter	0.64	ft
Hydraulic Radius	1.01	in
Top Width	0.54	ft
Critical Depth	0.21	ft
Percent Full	21.1	%
Critical Slope	0.00745	ft/ft
Velocity	3.77	ft/s
Velocity Head	0.22	ft
Specific Energy	0.36	ft
Froude Number	2.11	
Maximum Discharge	2.23	ft ³ /s
Discharge Full	2.07	ft ³ /s
Slope Full	0.00033	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	21.14	%
Downstream Velocity	Infinity	ft/s

LACSD Estimate Sewer Hydraulics

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.69	in
Critical Depth	0.21	ft
Channel Slope	0.03400	ft/ft
Critical Slope	0.00745	ft/ft

APPENDIX D

Reference Materials

Exhibit M.2-12 SEWAGE GENERATION FACTORS

<u>Type Description</u>	<u>Average Daily Flow (Gpd/unit)</u>
Acupuncture Office/Clinic	150/1000 Gr.sq.ft.
Arcade - Video Games	80/1000 Gr.sq.ft.
Auditorium	4/seat
Auto Parking	20/1000 Gr.sq.ft.
Auto Body/Mech Repair Shop	800/1000 Gr.sq.ft. + Process Flow
Bakery	280/1000 Gr.sq.ft.
Bank: Headquarters	150/1000 Gr.sq.ft.
Bank: Branch	80/1000 Gr.sq.ft.
Banquet Room/ Ballroom	800/1000 Gr.sq.ft.
Bar: Cocktail, Fixed Seat	18/seat
Bar: Juice (No Baking Facilities)	120/1000 Gr.sq.ft.
Bar: Juice (With Baking Facilities)	280/1000 Gr.sq.ft.
Bar: Cocktail Public Table Area	500/1000 Gr.sq.ft.
Barber Shop	100/1000 Gr.sq.ft.
Beauty Parlor	280/1000 Gr.sq.ft.
Building Construction Field Office	150/office
Bowling Alley: Alley, Lanes & Lobby Area	80/1000 Gr.sq.ft.
Bowling Facility: Arcade/ Bar/ Restaurant/ Dancing	See Individual Categories
Cafeteria: Fixed Seat	30/seat
Car Wash: Automatic	Process Flow
Car Wash: Coin Operated Bays	Process Flow
Car Wash: Hand Wash	Process Flow
Car Wash: Counter & Sale Area	80/1000 Gr.sq.ft.
Chapel: Fixed Seat	4/seat
Chiropractic Office	150/1000 Gr.sq.ft.
Church: Fixed Seat	4/seat
Church School: Day Care/elem	8/occupant
Church School: One Day Use/week	200/1000 Gr.sq.ft.
Cocktail Lounge: Fixed Seat	18/seat
Coffee House: No Pastry Baking & No Food Prep.	120/1000 Gr.sq.ft.
Coffee House: Pastry Baking Only	280/1000 Gr.sq.ft.
Coffee House: Serves Prepared Food	30/seat
Cold Storage: No Sales	20/1000 Gr.sq.ft.
Cold Storage: Retail Sales	80/1000 Gr.sq.ft.
Comfort Station: Public	100/fixture
Commercial Use	80/1000 Gr.sq.ft.
Community Center	4/occupant
Conference Room of Office Bldg.	Same as other areas in an office bldg.
Counseling Center ¹	150/1000 Gr.sq.ft.
Credit Union	150/1000 Gr.sq.ft.
Dairy	Process Flow
Dairy: Barn	Process Flow
Dairy: Retail Area	80/1000 Gr.sq.ft.

¹ *Counseling center include marriage counseling centers, alcohol/drug rehabilitation/dependency centers, nutrition center, diet centers, etc.*

Exhibit M.2-12, continued
SEWAGE GENERATION FACTORS

<u>Type Description</u>	<u>Average Daily Flow (Gpd/unit)</u>
Dancing Area of Bar or Nightclub	600/1000 Gr.sq.ft.
Dance Studio	80/1000 Gr.sq.ft.
Dental Office/Clinic	250/1000 Gr.sq.ft.
Doughnut Shop	280/1000 Gr.sq.ft.
Drug Rehabilitation Center	150/1000 Gr.sq.ft.
Equipment Booth	20/1000 Gr.sq.ft.
Film Processing – 1-Hour Photo, etc.	100/1000 Gr.sq.ft.
Film Processing – Industrial	80/1000 Gr.sq.ft. + Process Flow
Food Processing Plant	80/1000 Gr.sq.ft. + Process Flow
Gas Station: Self Service	100/w.c.
Gas Station: Four Bays Maximum	430/station
Golf Course: 18-hole/ 9-hole Green Area	0
Golf Course: Driving Range	0
Golf Course Facility: Lobby/Office/Restaurant/Bar	See Individual Categories
Gymnasium – Basketball, Volleyball	250/1000 Gr.sq.ft.
Hanger (Aircraft)	80/1000 Gr.sq.ft.
Health Club/ Spa ²	800/1000 Gr.sq.ft.
Homeless Shelter	75/bed
Hospital	75/bed
Hospital: Convalescent	75/bed
Hospital: Animal	280/1000 Gr.sq.ft.
Hospital: Psychiatric	75/bed
Hospital: Surgical	450/bed
Hotel: Use Guest Rooms Only	130/room
Jail	85/inmate
Kennel: Dog Kennel/Open Run	100/1000 Gr.sq.ft.
Laboratory: Commercial	250/1000 Gr.sq.ft.
Laboratory: Industrial	Process Flow
Laundromat	170/machine
Library: Public Area	80/1000 Gr.sq.ft.
Library: Stacks, Storage	25/1000 Gr.sq.ft.
Lobby of Retail Area ³	80/1000 Gr.sq.ft.
Lodge Hall	4/seat
Lounge	See Lobby of Retail Area
Machine Shop	80/1000 Gr.sq.ft. + Process Flow
Manufact or Indust Facility	80/1000 Gr.sq.ft. + Process Flow
Massage Parlor	275/1000 Gr.sq.ft.
Medical Building	250/1000 Gr.sq.ft.
Medical Lab in Hospital	250/1000 Gr.sq.ft.

² Health club/spa includes lobby area, workout floors, aerobic rooms, swimming pools, Jacuzzi, sauna, locker rooms, showers, and restrooms. If a health club/spa has a gymnasium facility, use the gymnasium rate for that portion. Gymnasiums include basketball courts, volleyball courts, and any other large open space with low occupancy density.

³ Lobby of retail includes lounges, holding rooms, waiting areas, etc.

Exhibit M.2-12, continued
SEWAGE GENERATION FACTORS

<u>Type Description</u>	<u>Average Daily Flow (Gpd/unit)</u>
Medical Office/ Clinic	250/1000 Gr.sq.ft.
Mini-mall	80/1000 Gr.sq.ft.
Mortuary: Embalming	5/7 Gr.sq.ft.
Mortuary: Chapel	4/seat
Mortuary: Living Area	80/1000 Gr.sq.ft.
Motel: Use Guest Rooms Only	130/room
Museum: All Areas	20/1000 Gr.sq.ft.
Museum: Office over 15%	150/1000 Gr.sq.ft.
Museum: Sales Area	80/1000 Gr.sq.ft.
Office Building	150/1000 Gr.sq.ft.
Office Building with Cooling Tower	180/1000 Gr.sq.ft.
Plating Plant	80/1000 Gr.sq.ft. + Process Flow
Pool Hall (No Alcohol)	80/1000 Gr.sq.ft.
Post Office: Full Service ⁴	150/1000 Gr.sq.ft.
Prisons	175/inmate
Residential Dorm: College or Residential	75/student
Residential: Apt. -Bachelor/single	80/dwelling Unit
Residential: Apt. - 1 Bedroom	120/dwelling Unit
Residential: Apt. - 2 Bedroom	160/dwelling Unit
Residential: Apt. - 3 Bedroom	200/dwelling Unit
Residential: Apt. - >3 Bedroom	40/additional bedroom
Residential: Boarding House	75/bed
Residential: Condo - 1 Bedroom	120/dwelling Unit
Residential: Condo - 2 Bedroom	160/dwelling Unit
Residential: Condo - 3 Bedroom	200/dwelling Unit
Residential: Condo - >3 Bedroom	40/additional bedroom
Residential: Duplex/ Townhouse/ SFD - 1 Bd.	130/dwelling Unit
Residential: Duplex/ Townhouse/ SFD - 2 Bd.	180/dwelling Unit
Residential: Duplex/ Townhouse/ SFD - 3 Bd.	230/dwelling Unit
Residential: Duplex/ Townhouse/ SFD - >3 Bd	50/additional bedroom
Residential: Room Addition – Bedroom	50/additional bedroom
Residential: Room Addition Other Than Bedroom	0
Residential: Room Conversion into Bedroom	50/additional bedroom
Residential: Room Conversion into Other Than Bedroom	0
Residential: Mobile Home	160/dwelling Unit
Residential: Artist 2/3 of Area	250/dwelling Unit
Residential: Artist Residence	80/dwelling Unit
Residential: Guest Home With Kitchen	See Residential: Apartment
Residential: Guest Home without Kitchen	50/bedroom
Rest Home	75/bed
Restaurant: Drive-in	40/stall
Restaurant: Drive-in	20/seat

⁴ Full service post offices include U.S. Postal Service, UPS, Federal Express, and other private express mail services.

Exhibit M.2-12, continued
SEWAGE GENERATION FACTORS

<u>Type Description</u>	<u>Average Daily Flow (Gpd/unit)</u>
Restaurant: Fast Food - Indoor Seat	20/seat
Restaurant: Fast Food - Outdoor Seat	12/seat
Restaurant: Full Service - Indoor Seat	30/seat
Restaurant: Full Service - Outdoor Seat	18/seat
Restaurant: Take-out	300/1000 Gr.sq.ft.
Retail Area	80/1000 Gr.sq.ft.
Rifle Range: Shooting Stalls, Shooting Lanes, Lobby	80/1000 Gr.sq.ft.
Rifle Range Facility: Bar, Restaurant	See Individual Categories
School: Arts/Dancing/Music (Part Time)	80/1000 Gr.sq.ft.
School: Arts/Dancing/Music (Full Time)	See type of school below
School: Day Care Center	8/child
School: Elementary or Junior High ⁵	8/student
School: High School ⁵	12/student
School: Kindergarten	200/1000 Gr.sq.ft.
School: Martial Arts (Part Time)	80/1000 Gr.sq.ft.
School: Martial Arts (Full Time) ⁵	See type of school below
School: Nursery - Day Care	8/child
School: Special Class	8/student
School: Trade or Vocational ⁵	12/student
School: Training ⁵	12/student
School: University or College ⁵	18/student
School: Dormitory ⁶	75/student
School: Stadium, Pavilion	4/seat
Spa/ Jacuzzi: Commercial - with backwash	Process Flow
Spa/ Jacuzzi: Residential, replaceable filter crtrdg	0
Storage: Building/Warehouse	20/1000 Gr.sq.ft.
Storage: Self Storage Bldg.	20/1000 Gr.sq.ft.
Store: Ice Cream/Yogurt	80/1000 Gr.sq.ft.
Store: Retail	80/1000 Gr.sq.ft.
Studio: Film/ TV – Audience Viewing Room	4/seat
Studio: Film/ TV – Regular Use Indoor Filming Area	80/1000 Gr.sq.ft.
Studio: Film/ TV – Indust. Use Film Proc, Machine Shop	80/1000 Gr.sq.ft. + Process Flow
Studio: Recording	80/1000 Gr.sq.ft.
Swimming Pool: Commercial with backwash	Process Flow
Swimming Pool: Residential replaceable filter crtrdg	0
Tanning Salon: Independent, No Shower	80/1000 Gr.sq.ft.
Tanning Salon: Within a Health Spa/Club	800/1000 Gr.sq.ft.

⁵ *The sewage generation factor for schools based on student capacity covers the following facilities: classrooms and lecture halls, professors' offices, administration offices, laboratories for classes or research, libraries, bookstores, student/professor lounges, school cafeterias, warehouses and storage areas, auditoriums and gymnasiums. For any facility not listed under "schools" (e.g., stadium), see the generation factor listed for that land use type.*

⁶ *The sewage generation factor for a college dormitory based on student capacity also includes the sewage generation factor for the dormitory cafeterias.*

Exhibit M.2-12, continued
SEWAGE GENERATION FACTORS

<u>Type Description</u>	<u>Average Daily Flow (Gpd/unit)</u>
Theatre: Drive-in	10/vehicle
Theatre: Live/Music/Opera	4/seat
Theatre: Cinema	4/seat
Tract: Commercial/ residential	1/acre
Trailer: Construction/Field Office	150/office
Veterinary Clinic/Office	280/1000 Gr.sq.ft.
Warehouse	20/1000 Gr.sq.ft.
Warehouse with Office	Use Factor for Each Separate Category
Waste Dump: Recreational	430/station
Wine Tasting Room: Kitchen	215/1000 Gr.sq.ft.
Wine Tasting Room: All Areas	80/1000 Gr.sq.ft.

Notes:

Gpd/unit = Gallons per day (gpd) per unit as indicated.

Gr.sq.ft. = Gross Square Feet: area included within the exterior or the surrounding walls of a building excluding courts.

GPM Peak = Peak Flow in gallons per minute. There is an assumption that the peak to average flow ratio is 3.5. Therefore, 1.0 gpm x 1440 minutes/day divided by 3.5 = 412 gpd which is the unit flow factor in the table.

See next page for metric equivalents.

Source: Bureau of Sanitation. Sewerage Facilities Charge, Sewage Generation Factors for Residential and Commercial Categories. Effective June 6, 1996.



September 17, 2020

Ref. DOC 5890737

Mr. Kyle Prouty, Civil Project Engineer
John Labib & Associates
310 Main Street
El Segundo, CA 90245

Dear Mr. Prouty:

BCHD Healthy Living Campus

The Los Angeles County Sanitation Districts (Districts) received your will serve letter request for the subject project on August 17, 2020. The proposed project is located within the jurisdictional boundary of South Bay Cities Sanitation 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 Districts, for conveyance to the Districts' El Nido Relief Trunk Sewer, located in 183rd Street east of Inglewood Avenue. The Districts' 18-inch diameter trunk sewer has a capacity of 3.7 million gallons per day (mgd) and conveyed a peak flow of 2.3 mgd when last measured in 2017.
2. The wastewater generated by the proposed project will be treated at the Joint Water Pollution Control Plant located in the City of Carson, which has a capacity of 400 mgd and currently processes an average flow of 261.1 mgd.
3. The expected average wastewater flow from the project site, described in the application as a 482,180 square-foot healthy living campus, is 130,929 gallons per day. For a copy of the Districts' average wastewater generation factors, go to www.lacsd.org, under Services, then Wastewater Program and Permits, select Will Serve Program, and scroll down to click on the [Table 1, Loadings for Each Class of Land Use](#) link.
4. The Districts are empowered by the California Health and Safety Code to charge a fee to connect facilities (directly or indirectly) to the Districts' Sewerage System or to increase the strength or quantity of wastewater discharged from connected facilities. This connection fee is a capital facilities fee that is used by the Districts to upgrade or expand the Sewerage System. Payment of a connection fee will be required before this project is permitted to discharge to the Districts' Sewerage System. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, under Services, then Wastewater (Sewage) and select Rates & Fees. In determining the impact to the Sewerage System and applicable connection fees, the Districts will determine the user category (e.g. Condominium, Single Family home, etc.) that best represents the actual or anticipated use of the parcel(s) or facilities on the parcel(s) in the development. For more specific information regarding the connection fee application procedure and fees, the developer should contact the Districts' Wastewater Fee Public Counter at (562) 908-4288, extension 2727.
5. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Districts' 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 Districts' 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 the Districts' 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 the developer that the Districts intend to provide this service up to the levels that are legally permitted and to inform the developer of the currently existing capacity and any proposed expansion of the Districts' facilities.

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

Very truly yours,



Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:dc

cc: A. Schmidt
A. Howard