



WATER DEMAND REPORT

Snug Harbor

Newport Beach, CA

Prepared for:

Back Bay Barrels, LLC.

Prepared by:

Fuscoe Engineering 15535 Sand Canyon Ave Irvine, CA 92618 www.fuscoe.com

> Project Manager: Oriana Slasor, PE

Date Prepared: December 2024 1st Revision: February 2025 2nd Revision: April 7, 2025

Project Number: 4206-001-01

Table of Contents

1.0	INTRODUCTI	ON	ļ	
1.1	Purpose of St	rudy	1	
1.2	Site Description			
1.3	Existing Wate	er Facilities	2	
1.4	Proposed De	velopment	2	
2.0	METHODOLO	DGY AND WATER DEMAND ESTIMATES	3	
3.0	WELL WATER	FOR IRRIGATION OF EXISTING GOLF COURSE	6	
4.0	FIRE FLOW CALCULATIONS			
5.0	CONCLUSIO	N	8	
6.0	APPENDICES		8	
	Appendix 1	Project Information		
	Appendix 2	Water Atlas Map		
	Appendix 3	Fire Hydrant Test Results		
	Appendix 4	Design Criteria		
	Appendix 5	Existing Water Usage Information		
	Appendix 6	City of Newport Beach Fire Flow Guidelines		
	Appendix 7	Fire Flow Calculations		

BBB LLC Snug Harbor

1.0 INTRODUCTION

1.1 PURPOSE OF STUDY

The purpose of this study is to calculate and analyze the domestic water demand and fire suppression flow requirements for the proposed Snug Harbor project. The project is located at 3100 Irvine Avenue, near the corner of Irvine Avenue and Mesa Drive in the City of Newport Beach, California. The water demand calculations will provide the estimated domestic water supply that the project would require for its day-to-day operations, along water requirements associated with maintenance of the surf lagoons. The fire flow calculations will determine if the available infrastructure, including adequate pressures and fire hydrants, is sufficient to provide fire suppression flows to the proposed development.

1.2 SITE DESCRIPTION

The Snug Harbor project site encompasses a total area of approximately 15.4 acres. The project site is located at the Newport Beach Golf Course easterly of the intersection of Irvine Avenue and Mesa Drive. The Orange County Flood Control District (OCFCD) Santa Ana-Delhi Channel and Irvine Avenue border the westerly and northerly boundaries of the property. Mesa Drive borders the southerly border and commercial properties border the easterly boundary. A Vicinity Map is shown below as Figure 1.

The proposed project will include demolishing the existing clubhouse and pro shop buildings, parking lots, golf course, and onsite infrastructure. The project will construct a surf park which will include wave lagoons, a clubhouse building, pools, spas, athlete lodging, and parking with solar-powered canopies. A site plan is included in Appendix 1.

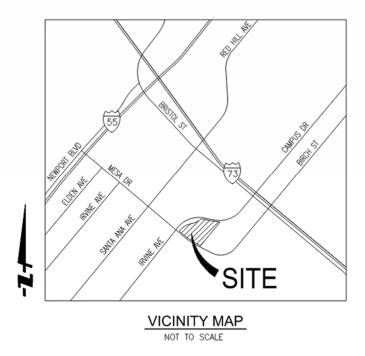


Figure 1

1.3 EXISTING WATER FACILITIES

Water for domestic service and fire protection is provided to the property by the City of Newport Beach. The City of Newport Beach GIS water/sewer map is included in the report as Appendix 2, and shows that there is an existing 24" City waterline fronting the project in Irvine Avenue.

Additionally, the golf course is currently irrigated via well water. Irrigation of the existing golf course therefore does not contribute to the domestic water usage.

A fire hydrant flow test was conducted on the hydrant directly fronting the site, test hydrant 716. Below are the results of the hydrant test. A copy of the test results are included in this report as Appendix 3.

FH test results:

o Static Pressure: 117 psi

o Residual Pressure: 110 psi @ 1,100 gpm o Calculated flow @ 20 psi: 5,969 gpm

1.4 PROPOSED DEVELOPMENT

As mentioned previously, the project will include demolishing the existing commercial buildings, and constructing the proposed new development. Additionally, the irrigation demand from the wells will be eliminated from this portion of the golf course (3 holes of the 18 hole golf course).

Proposed construction will consist of a clubhouse with retail amenities, 20 units of athlete accommodations, along with 9 outside showers and a 738 square-foot restroom facility. There will be 3 pools, 1 spa, and a surf lagoon. The proposed area square footages for the clubhouse and athlete accommodations are tabulated in Table 1.1 below. The project information plan sheets are included in Appendix 1.

	General Plan Area (SF)	Gross Area (SF)
Clubhouse Building	50,341	68,478
Athlete Accommodations	9,432	11,056
Totals	59,773	79, 534

Table 1.1 – Snug Harbor Proposed Building Areas

2.0 METHODOLOGY AND WATER DEMAND ESTIMATES

The proposed domestic water demand is directly associated with the proposed development (See Appendix 1), and applied water demand criteria. For water demand criteria of the proposed clubhouse, along with those of the athlete accommodations, factors provided by the Irvine Ranch Water District (IRWD) were used. For the water demand associated with the operations of the pools, spa, and surf lagoons, information from the wave pool designer was utilized. The existing land use (clubhouse and pro shop) that will be demolished will be included as a credit to the calculated water demand. (See Appendix 4 for Design Criteria).

Below are the criteria that were used for the proposed condition water demand calculations for the proposed clubhouse, bathroom facility, and athlete accommodations (See Appendix 4).

- Proposed building gross square footages (Table 1.1)
- Average Daily Flow (Clubhouse/Community Commercial/Restroom):
 175 gallons/ksf/day (IRWD)
- Average Daily flow (Athlete Accommodations/Hotel): 160 gallons/room/day (IRWD)
- 9 Outdoor Showers: estimated 9 gallons per usage x 6 uses per day for each shower, for a total of 54 gallons per outdoor shower per day.

The estimated water demand associated with the clubhouse and lodging will be 16,730 gallons per day (GPD), or 15.37 acre-feet per year (AFY). The calculations are tabulated in Table 2.1, below.

Proposed Clubhouse and Accommodations	Amount		nount Avg Unit Flow		Avg Flow (GPD)	Avg Flow (MGD)	Avg Flow (AFY)
Clubhouse Building (SF)	68,478	SF	0.175	(GPD/SF) ¹	11,984	0.012	13.42
Restroom Building (SF)	738	SF	0.175	(GPD/SF) ¹	129	0.00013	0.15
Athlete Accommodations (Rms)	20	Keys	160	(GPD/Key) ¹	3,200	0.0032	3.58
Showers for Pools/Lagoons	9	Showers	54	(GPD/Shower) ²	486	0.0005	0.54
Recreational	3	Pools	* Pr	oration of the			
Pools and Spas	1	Spa	_	ons water usage ed on surface areas	931	0.0009	1.04
Totals					16,730	0.0167	18.73

¹ Irvine Ranch Water District, 2019, Water Resources Master Plan, Table 3-1

² 54 GPD/Shower = Assumed 18 gal/shower usage (internet research) x 3 uses per day per shower facility. Alliance for Water Efficiency. "Showering to Savings." *Home Water Works*, 2016 Residential End Uses of Water Study, The Water Research Foundation, home-water-works.org/indoor-use/showers.

In addition to the proposed clubhouse building, restroom building, recreational pools, spas, and outdoor showers, there will be water demand associated with the surf lagoon. The water demand associated with the lagoon has been received from the client and consultant (see Appendix 4). The total water demand associated with operation and maintenance of the lagoon is anticipated to be 62,312 gallons per day (GPD), or 69.80 acre-feet per year (AFY). The breakdown is included in Table 2.2.

Table 2.2 – Snug Harbor Proposed Lagoon Water Demand

WATER REQUIREMENTS – ROUTINE SURF LAGOON MAINTENANCE					
	Gallons/ Year	Gallons/ Day	AFY		
Draining of the Lagoon – (Frequency: Annually)	5,100,000	13,973	15.65		
Filter Cleaning of the Lagoon – (Frequency: 17 times per year)	45,067	123	0.14		
Total Water Requirements – Routine Maintenance	5,145,067	14,096	15.79		
WATER REQUIREMENTS – ANNUAL SURF LAGOON OPERATION					
	Gallons/ Year	Gallons/ Day	AFY		
Temperature mean (°F)	ean (°F) 66 °F				
Open Water Evaporation Estimate (gal/year)	12,966,764	35,525	39.79		
Wave Operation Factor	1.45				
Backwash losses (gal/year)	192,867	528	0.59		
Average Evaporation Water Loss (gal/year)	51,512	141	0.16		
Operating Water Loss (gal/year)	18,994,674	52,040	58.29		
Annual Rainfall (11 inches)	1,396,018	3,825	4.28		
Total Water Requirement – Annual Operation	17,598,655	48,215	54.01		
Total Water Requirement – Routine Maintenance + Annual Operation	22,743,722	62,312	69.80		

Sources

The development parameters and total proposed estimated domestic water demand is presented as Table 2.3. The total proposed water demand is expected to be 79,042 GPD, or 88.53 AFY.

^{1.} Wavegarden Cove. 18 October 2024. Water Management Introduction – Newport Beach Cove 2. Coyne. 30 September 2024. Water Requirement "Email to Fuscoe Engineering."

Table 2.3 – Snug Harbor Proposed Total Water Demand

Proposed Land Uses	Amount	GPD	AFY
	Proposed Water Use		
Wave Pool/ Surf Lagoon		62,312	69.80
Clubhouse, Athlete Accommodations (Keys),	• 68,478 SF Clubhouse		
Outside Showers, Pools & Spa	• 20 Keys		
	• 738 SF Restroom Facility	16,730	18.73
	• 9 Showers		
	• 3 Pools and 1 Spa		
Total Prop	79,042	88.53	

As mentioned previously, the existing buildings that support the existing golf course will be demolished to allow for construction of the proposed development. Therefore, the existing domestic water usage will be applied as a credit, to determine the net potable water demand. The existing water meter reading from July 2022 – June 2024 were obtained and used to determine the existing daily and annual water demand from the existing buildings, that will be credited to the proposed demand to determine the net new domestic water demand. The data is included in Appendix 5. The existing domestic water usage information are presented in Table 2.4.

Table 2.4 – Snug Harbor Existing Domestic Water Demand (Credit)

Existing Commercial Demands (Potable Water) (Credit)				
July '22 – June '23	529,584	gallons		
July '23 – June '24	484,704	gallons		
Average Demand	1,389	GPD		
FY 22-23 & 23-24	1.6	AFY		

The net new domestic water demand is obtained by taking the proposed condition water demand, and subtracting the existing demand to the buildings that will be

demolished. The resulting net new domestic demand will be 80,431 GPD, or 86.93 AFY. The net new domestic demand is presented as Table 2.5.

Table 2.5 – Snug Harbor Net Domestic Water Demand

New Water Demand for Snug Harbor Project				
Existing Domestic Water Demand	1,389	GPD		
Proposed Domestic Water Demand	79,042	GPD		
Net Domestic Demand	80,431	GPD		
	86.93	AFY		

3.0 WELL WATER FOR IRRIGATION OF EXISTING GOLF COURSE

Well water, from groundwater, is currently being used for irrigation of the golf course. When the project is developed to construct the new site, the water demand for these 3-holes of the 9-hole golf course will no longer be required. Although this does not affect the domestic water usage, the water usage that will no longer be required is included to document this reduction in irrigation demand. The well water usage for irrigation of the existing golf course has been obtained from records, and these records are included in Appendix 5. The existing well water demand that will no longer be required is tabulated in Table 3.1.

Table 3.1 – Snug Harbor Existing Well Water Demand

Existing Irrigation Demands (Groundwater Well Production)			
2020	29,750,000	gallons	
2021	34,181,764	gallons	
2022	36,267,210	gallons	
2023	33,823,328	gallons	
Average Demand	91,796	GPD	
2020-2023 (18-Hole Course)	103	AFY	
Estimated Project Area Demand	15,300	GPD	
2020-2023 (3-Hole Course)	17.2	AFY	

4.0 FIRE FLOW CALCULATIONS

Fire flow calculations have been prepared to confirm that the availability of the City of Newport Beach's water infrastructure is sufficient to provide adequate fire flows, pressures and number of fire hydrants required for fire suppression of the proposed buildings within the proposed Snug Harbor development.

There is an existing City of Newport Beach 24-inch waterline in Irvine Avenue that currently provides domestic water and fire suppression services to the property. Connected to this waterline are three City of Newport Beach fire hydrants on Irvine Avenue, adjacent to the project site, that are available to service the site. The City of Newport Beach staff requested that existing hydrant #2608 on Irvine Avenue be tested for fire flows. The fire hydrant test results show that the existing waterline has an available calculated flow of 5,969 gpm at 20 psi, which would be available for fire suppression operations. The fire flow test results are included as Appendix 3.

Fire flow calculations are based on the square footage (SF) of each building, along with construction type. The architectural plans for the project show that two buildings are proposed, as follows:

- Clubhouse, 68,478 SF: 3-story, type VA, with one level below-grade, fully sprinklered
- Athlete accommodations, 11,056 SF: 2-story, Type VA, fully sprinklered

For fire flow evaluation of a project site, if building construction types are equal, only the larger building needs to be evaluated for fire flow adequacy. Since both buildings will be of construction type VA, the fire flow calculations were calculated for the larger building, Clubhouse, which will have a floor area of 68,478 SF.

As discussed above, fire flow calculations were prepared using the larger (Clubhouse) proposed building area & construction type (VA) in accordance with the City of Newport Beach Guideline B.O.1 – Determination of Fire Flow. Since the buildings will be fully sprinklered, a 50% reduction has been applied, and is reflected in the results below. Based on the calculations the minimum fire flow requirement for the proposed development will be 2,500 gpm @ 20 psi. Fire flow calculations are attached.

The results of the fire flow calculations are as follows:

- Required Fire Flow: 2,500 gpm @ 20 psi
- Required Spacing: 3 Hydrants @ 450 feet
- Minimum Distance from Street Frontage to Hydrant: 225 feet
- Hydrant Flow Test: 5,969 gpm @ 20 psi at Irvine Avenue (Since this is greater than 2,500 gpm, this confirms that the existing City of Newport Beach water system in Irvine Avenue is adequate to provide the required fire flows to the proposed buildings.)

The fire flow requirement for the proposed building is 2,500 gpm, with 3 hydrants at less than 450 feet minimum spacing, and less than 225 feet to the project street frontage. The required fire demand and hydrant spacing will be adequately provided by the existing water main infrastructure in Irvine Avenue. The existing water system in Irvine Avenue is also able to provide up to 5,969 gpm @ 20 psi, which is adequate to provide the required fire flow of 2,500 gpm @20 psi to the proposed buildings.

Based on our analysis, it is our opinion that the existing City of Newport Beach water main in Irvine Avenue fronting the project site will be adequate to provide fire suppression flows for the proposed buildings in the Snug Harbor project.

The City of Newport Beach Fire Flow Guidelines are included in Appendix 6 of this report. The fire flow calculations are included in the Appendix 7.

5.0 CONCLUSION

The proposed domestic water demand for the total project is 88.53 acre-feet/year. Using the existing land use credit (1.6 acre-feet/year), the net domestic water demand for this site will be 86.93 acre-feet/year.

Additionally, existing well water in the amount of 17.2 AFY will be eliminated from the existing water demand. Since this does not affect the domestic water demand, this demand was not deducted as a credit from the proposed project domestic demand.

The fire flow requirement for the larger of the two proposed buildings is 2,500 gpm, with 3 hydrants at 450 feet minimum spacing, and 225 feet to the project street frontage. The required fire demand and hydrant spacing will be adequately provided by the existing water main infrastructure in Irvine Avenue.

Based on our analysis, it is our opinion that the existing City of Newport Beach water main in Irvine Avenue fronting the project site will be adequate to provide domestic and fire suppression flows for the proposed Snug Harbor project.

The backup calculations, exhibits, and reference materials are included in the appendices of this report.

6.0 APPENDICES

Appendix 1	Project Information
Appendix 2	Water Atlas Map
Appendix 3	Fire Hydrant Test Results
Appendix 4	Design Criteria
Appendix 5	Existing Usage Water Information
Appendix 6	City of Newport Beach Fire Flow Guidelines
Appendix 7	Fire Flow Calculations

Appendix 1 Project Information

SNUG HARBOR

NEWPORT BEACH

SITE DEVELOPMENT REVIEW

A0.0 COVER

SITE DEVELOPMENT REVIEW

SITE ADDRESS

3100 IRVINE AVE, NEWPORT BEACH, CA 92660

CONTACT

APPLICANT BACK BAY BARRELS, LLC 3857 BIRCH STREET, SUITE 521 NEWPORT BEACH, CA 92660 CONTACT: STEVE COYNE

PHONE: 949.300.9632

ARCHITECT MVE +PARTNERS 1900 MAIN STREET, SUITE 800 IRVINE, CA 92614

CONTACT: PIETER BERGER

PHONE: 949.809.3388

CIVIL LANDSCAPE

CONCEPTUAL DESIGN + PLANNING COMPANY FUSCOE ENGINEERING, INC. 15535 SAND CANYON AVE 1675 SCENIC AVENUE, SUITE 200 COSTA MESA, CA 92626 IRVINE, CA 92618 CONTACT: GREG ATTARD CONTACT: JENNIFER FREDERICK PHONE: 949.474.1960 PHONE: 949.399.0870

PROJECT DESCRIPTION

Proposed outdoor commercial recreation project consists of two main buildings. The site consist of 15.384 acres.

Clubhouse: 3-story, type VA, with one level below grade, fully sprinklered.
Athlete accommodations: 2-story, type VA, fully sprinklered.

ZONE

ADDRESS: 3100 IRVINE AVE, NEWPORT BEACH, CA 92660

119 200 41

ZONE:

Land Use Designations. The following land use designations are established for the Santa Ana Heights specific plan area: Open Space and Recreation District: SP-7 (OSR). **DESIGNATION:**

Land use and development standards for Santa Ana Heights shall be in accordance with Exhibit 21.90-1, Land Use Map—Specific Plan District No. 7, and the provisions of this section.

Principal Uses Allowed. The following principal uses are permitted: Outdoor commercial recreation.

LOT INFORMATION

REQUIRED: Building Site Area. One acre minimum

LOT AREA: 15.384 ACRES

<u>HEIGHT</u>

HEIGHT ALLOWABLE: Building Height. Eighteen (18) feet maximum unless otherwise provided by permit.

50' - 0" (CLUBHOUSE - MEASURED FROM ESTABLISHMENT OF GRADE) **HEIGHT PROPOSED:**

SETBACKS REQUIRED: Building Setbacks. Twenty (20) feet minimum from all property lines.

Building setbacks are larger than 20 feet all around the property. See setback and dimensions on Site Plan. Setback measured to the face of finish PROPOSED:

40' - 0" (ATHLETE ACCOMMODATIONS - MEASURED FROM ESTABLISHMENT OF GRADE)

1. THE APPLICANT PREVIEWED THE PROJECT WITH THE ORANGE COUNTY HEALTH DEPARTMENT ON JULY 23, 2024 AT AN IN PERSON MEETING. PRELIMINARY FEEDBACK WAS MINIMUM AND PROJECT WAS WELL RECEIVED. FINAL APPROVAL WILL BE OBTAINED DURING

PERMIT PROCESS.

2. ALL SIGNS COMPLY WITH CHAPTER 20.42 OF THE ZONING CODE OR AN APPROVED SIGN PROGRAM AND REQUIRE SEPARATE REVIEWS AND PERMITS.

BUILDING AREA

LEVEL	PROGRAM	AREA
LEVEL B1	CORRIDOR	2,916 SF
LEVEL B1	MEP	479 SF
LEVEL B1	STAFF	1,210 SF
		4,605 SF
LEVEL 1	CORRIDOR	200 SF
LEVEL 1	DRYING ROOM	268 SF
LEVEL 1	KITCHEN	1,721 SF
LEVEL 1	MAIN ELECTRICAL	365 SF
LEVEL 1	MEMBERS LOBBY	688 SF
LEVEL 1	MEP	557 SF
LEVEL 1	PREP ROOM	183 SF
LEVEL 1	REST.	1,470 SF
LEVEL 1	RESTAURANT / BAR	6,349 SF
LEVEL 1	RESTROOMS / CHANGING ROOMS	1,287 SF
LEVEL 1	STORAGE	245 SF
LEVEL 1	SURF ACADEMY	2,750 SF
LEVEL 1	SURF SHOP	2,759 SF
LEVEL 1	WASH ROOM	285 SF
		19,127 SF
LEVEL 2	CORRIDOR	90 SF
LEVEL 2	FITNESS	3,240 SF
LEVEL 2	MEMBER LOCKERS / SPA	2,480 SF
LEVEL 2	MEP	583 SF
LEVEL 2	REST.	1,162 SF
LEVEL 2	STORAGE	295 SF
LEVEL 2	STORAGE / BOH	436 SF
LEVEL 2	THE POINT LOUNGE	6,846 SF
LEVEL 2	YOGA	1,790 SF
		16,922 SF
LEVEL 3	CORRIDOR	80 SF
LEVEL 3	MEP	404 SF
LEVEL 3	RECORDING STUDIO	2,188 SF
LEVEL 3	REST.	261 SF
LEVEL 3	SERVICE	427 SF
LEVEL 3	STORAGE	184 SF
LEVEL 3	VIP	6,143 SF
		9,687 SF
		50,341 SF

			50,341 SF
GENERAL	PLAN SQUARE F	OOTAGE -	A. A.
LEVEL	PROGRA	PROGRAM	
ATHLETE ACCOMMODATIONS LEVEL 1	10 UNITS		4,716 SF
			4,716 SF
ATHLETE ACCOMMODATIONS LEVEL 2	10 UNITS		4,716 SF
	,		4,716 SF
			9,432 SF

TOTAL GENERAL PLAN SQUARE FOOTAGE:

EXCLUDED AREA FROM GENERAL PLAN S.F CLUBHOUSE					
LEVEL PROGRAM		AREA			
LEVEL B1	STORAGE 1, GOLF CART STORAGE	3,571 SF			
LEVEL B1 STORAGE 2, FACILITY STORAGE		5,472 SF			
LEVEL B1 STORAGE 3, SURF BOARD STORAGE		6,928 SF			
		15,971 SF			
LEVEL 1	BOARD STORAGE	548 SF			
LEVEL 1 REST.		1,618 SF			
		2,166 SF			
		18,137 SF			

EXCLUDED AREA FROM GENERAL PLAN S.F.			
LEVEL	PROGRAM		AREA
ATHLETE ACCOMMODATIONS LEVEL 1	REST.		738 SF
ATHLETE STORAGE ACCOMMODATIONS LEVEL 1			886 SF
			1,624 SF 1,624 SF

TOTAL EXCLUDED AREA FROM **GENERAL PLAN SQUARE FOOTAGE:** 19,761 SF TOTAL GROSS SQUARE FOOTAGE:

PER CITY OF NEWPORT BEACH MUNICIPAL CODE, TITLE 20 PLANNING AND ZONING, CHAPTER 20.70 DEFINITIONS, 20.70.020 DEFINITIONS OF SPECIALIZED TERMS AND PHRASES, FLOOR AREA,

2. MULTI-UNIT RESIDENTIAL (THREE-PLUS DWELLINGS), MIXED-USE, AND NONRESIDENTIAL STRUCTURES.

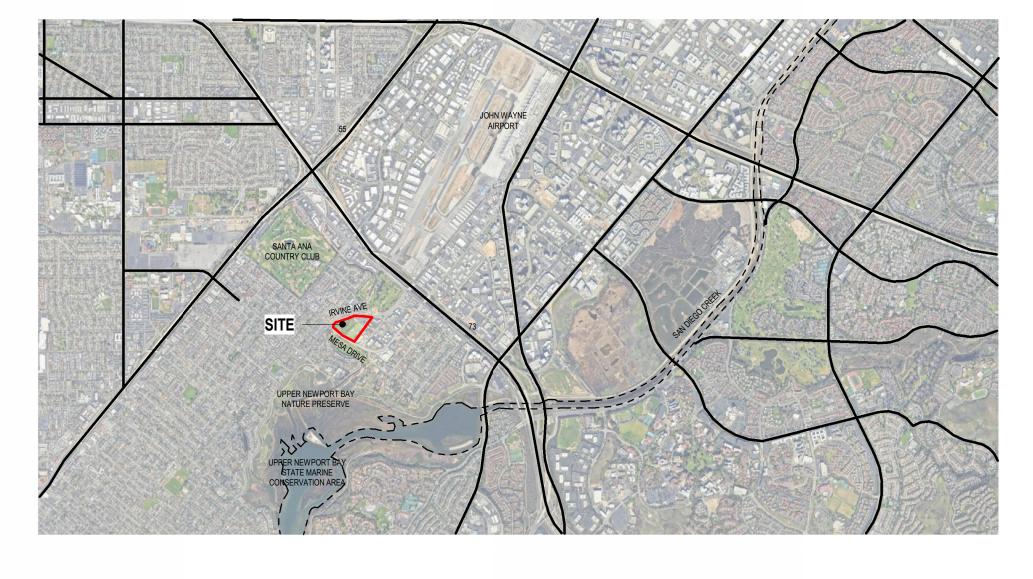
A. FOR MULTI-UNIT RESIDENTIAL, MIXED-USE, AND NONRESIDENTIAL STRUCTURES, THE FOLLOWING AREAS SHALL BE INCLUDED IN CALCULATIONS OF GROSS FLOOR AREA: I. THE AREA WITHIN AND INCLUDING THE SURROUNDING EXTERIOR WALLS; AND II. ANY INTERIOR PORTION OF A STRUCTURE THAT IS ACCESSIBLE AND THAT MEASURES MORE THAN FOUR FEET FROM FLOOR TO CEILING.

B. THE FOLLOWING AREAS SHALL BE EXCLUDED:

I. STAIRWELLS AND ELEVATOR SHAFTS ABOVE THE FIRST LEVEL; II. OUTDOOR DINING AREAS ASSOCIATED WITH AN EATING AND DRINKING ESTABLISHMENT, AND III. PARKING STRUCTURES ASSOCIATED WITH AN ALLOWED USE WITHIN THE SAME

DEVELOPMENT.

VICINITY MAP



PARKING SUMMARY

REQUIRED: As required by city approved parking demand study 377 Parking Stalls PROPOSED:

PARKING SCHEDULE					
LOCATION	TYPE	LENGTH	COUNT		
NORTH	ADA	9' - 0"	18' - 0"	5	
NORTH	ADA AMBULATORY EV	12' - 0"	18' - 0"	1	
NORTH	ADA EV	9' - 0"	18' - 0"	1	
NORTH	ADA VAN	12' - 0"	18' - 0"	1	
NORTH	ADA VAN EV	12' - 0"	18' - 0"	1	
NORTH	EV	8' - 6"	17' - 0"	32	
NORTH	EVSE	8' - 6"	17' - 0"	9	
NORTH	STANDARD	8' - 6"	17' - 0"	121	
171					
SOUTH	ADA	9' - 0"	18' - 0"	5	
SOUTH	ADA AMBULATORY EV	12' - 0"	18' - 0"	1	
SOUTH	ADA EV	9' - 0"	18' - 0"	1	
SOUTH	ADA VAN	12' - 0"	18' - 0"	1	
SOUTH	ADA VAN EV	12' - 0"	18' - 0"	1	
SOUTH	EV	8' - 6"	17' - 0"	32	
SOUTH	EVSE	8' - 6"	17' - 0"	9	
SOUTH	STANDARD	8' - 6"	17' - 0"	130	
				180	
				351	

NOTE:

1. EV CAPABLE, EVSE AND EV ACCESSIBLE PARKING WILL COMPLY WITH TABLE 5.106.5.3.1 OF CAL GREEN AND TABLE 11B-228.3.2.1 OF CBC.

2. THE LOCATION OF DIFFERENT PARKING STALLS WILL BE DESIGNATED DURING PLAN CHECK.

SHEET INDEX

ARCHITECTURE					
A0.0	COVER				
A0.1	PROJECT SUMMARY				
A0.2	SITE PLAN				
A0.3	GRADE ESTABLISHMENT				
A0.4	SITE CONTEXT IMAGERY				
A0.5	SHADOW ANALYSIS				
A1.0	FLOOR PLAN - SHORELINE				
A1.1	FLOOR PLAN - LEVEL B1 + LEVEL 1				
A1.2	FLOOR PLAN - LEVEL 2 + 3				
A1.3	FLOOR PLAN - ATHLETE ACCOMMODATIONS LEVEL 1 + 2				
A2.0	BUILDING ELEVATIONS				
A2.1	BUILDING ELEVATIONS				
A2.2	CONCEPTUAL SIGNAGE				
A3.0	BUILDING SECTIONS				
A4.0	BUILDING PERSPECTIVE				
<u>CIVIL</u>					
C-01	TITLE SHEET				
C-02	EXISTING CONDITIONS				
C-03	CONCEPTUAL GRADING				

CONCEPTUAL UTILITY

ALTA NSPS LAND TITLE SURVEY ALTA NSPS LAND TITLE SURVEY ALTA NSPS LAND TITLE SURVEY

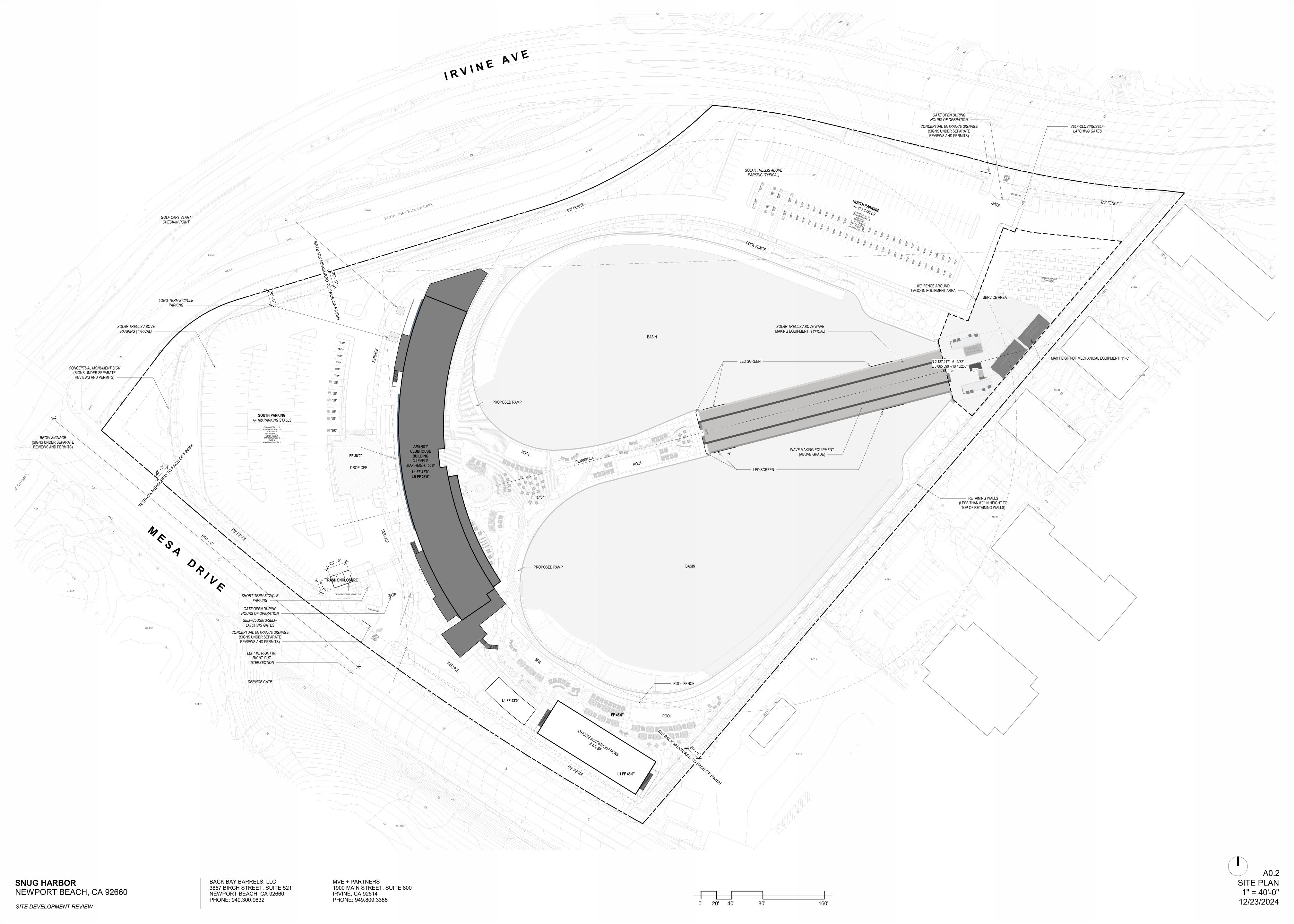
SECTIONS

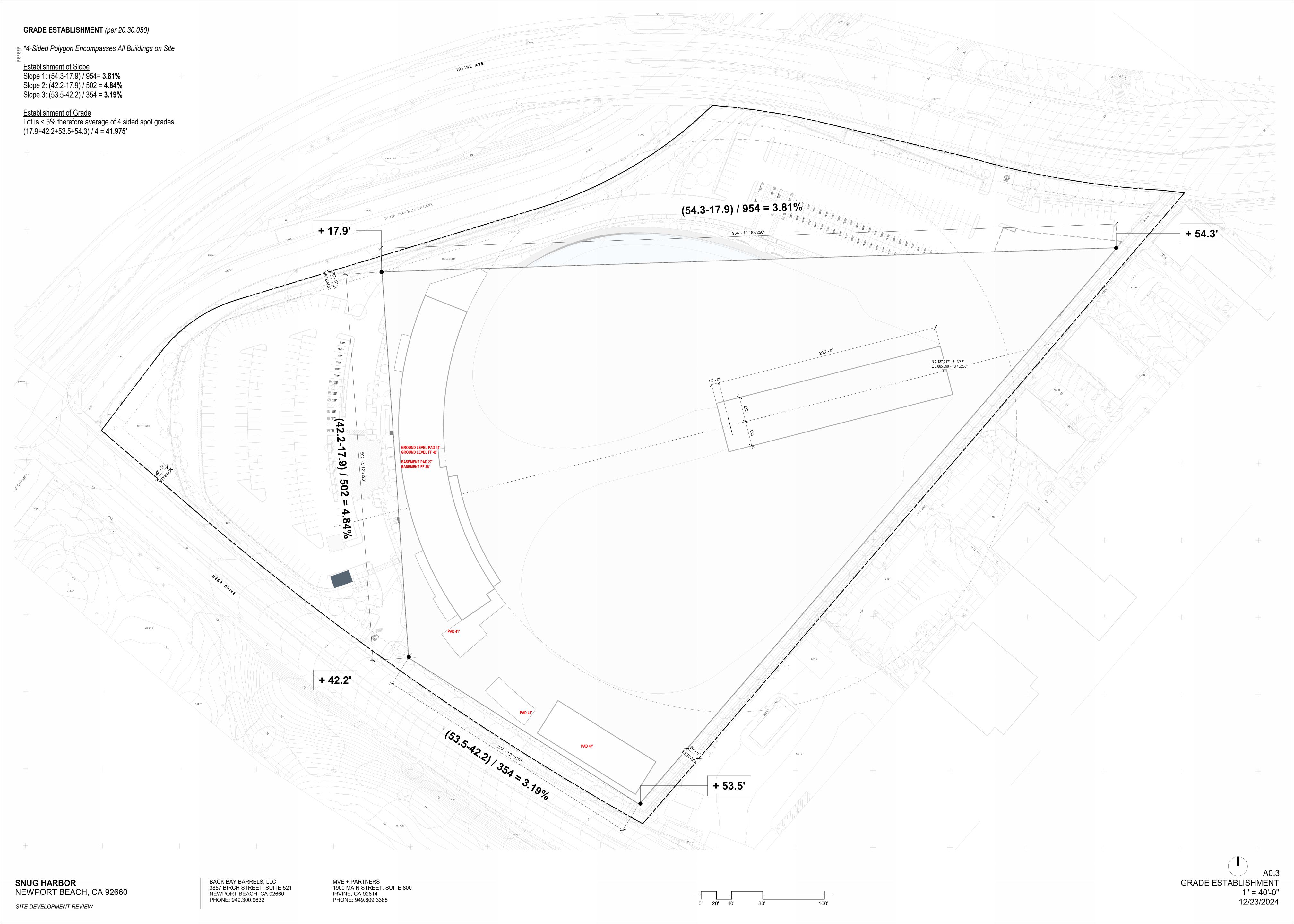
C-04

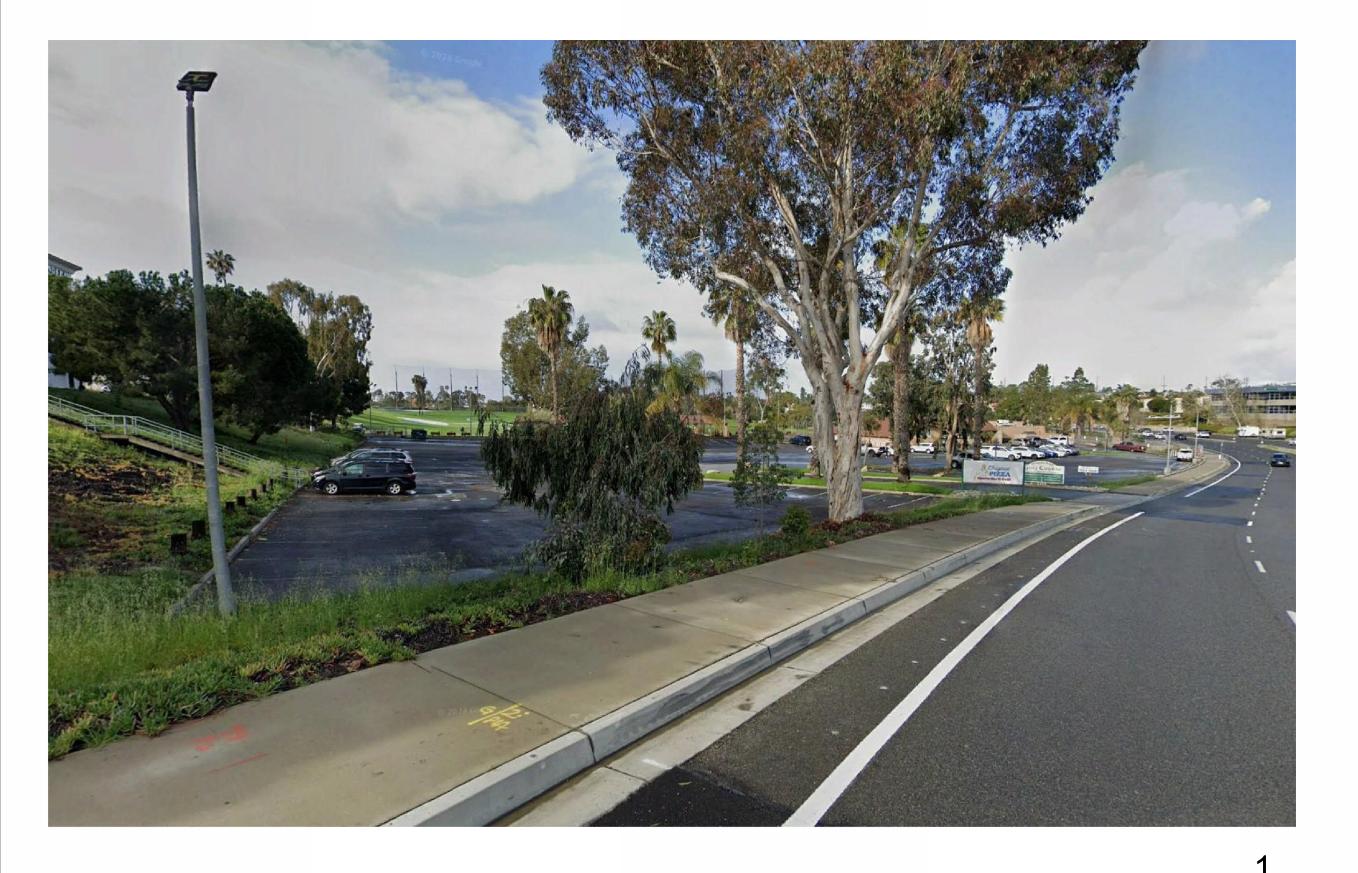
C-05

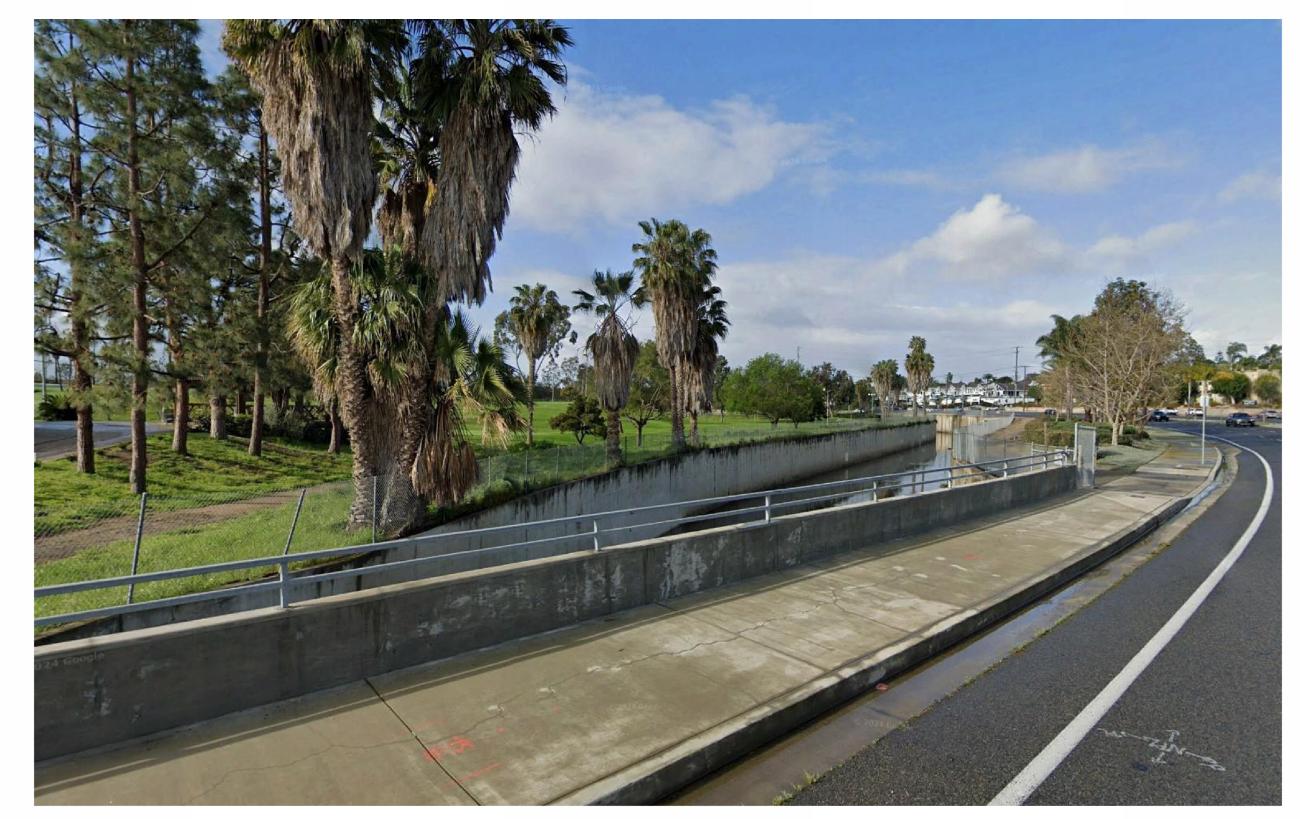
LANDSCAPE	
L-1 L-2 L-3	SCHEMATIC PLAN LANDSCAPE PLAN ENLARGEMENT – AMENITY DECKS LANDSCAPE PLAN ENLARGEMENT – MAIN ENTRY & WEST PARKING LOT
L-4	LANDSCAPE PLAN ENLARGEMENT – SURF SCHOOL TRAINING LAWN & SHORELINE PERIMETER
L-5	LANDSCAPE PLAN ENLARGEMENT- IRVINE AVENUE ENTRY
L-6	PLANT PALETTE & IMAGES

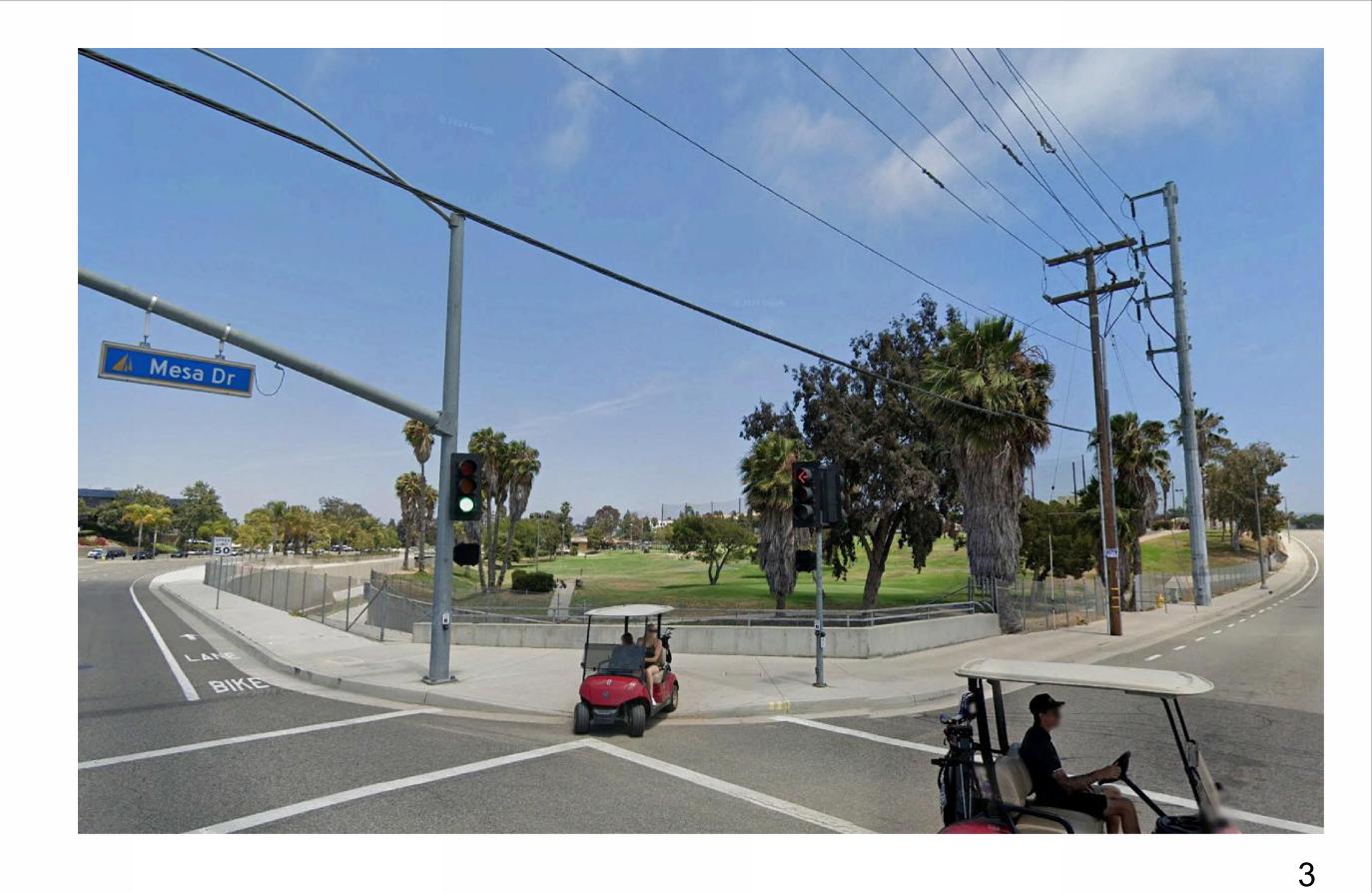
SITE DEVELOPMENT REVIEW

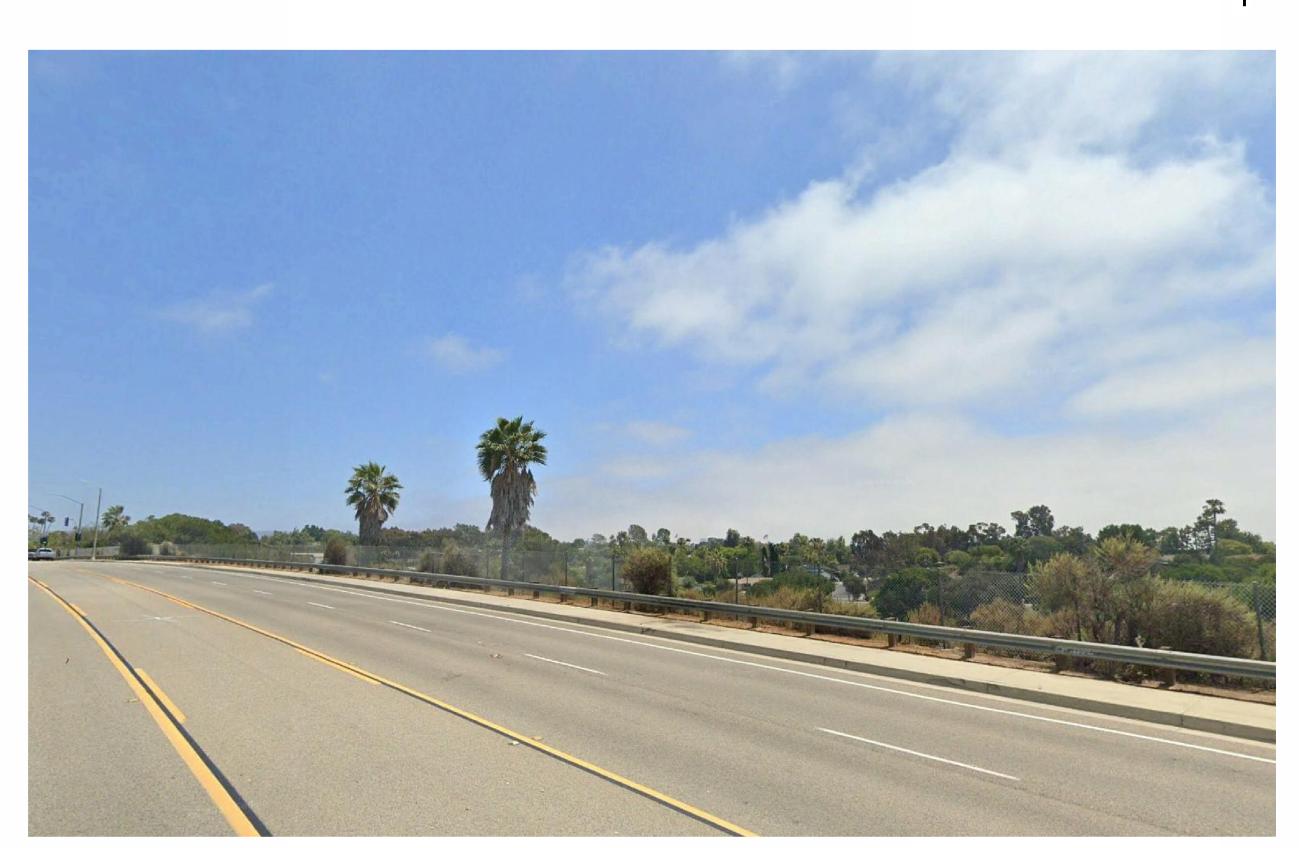






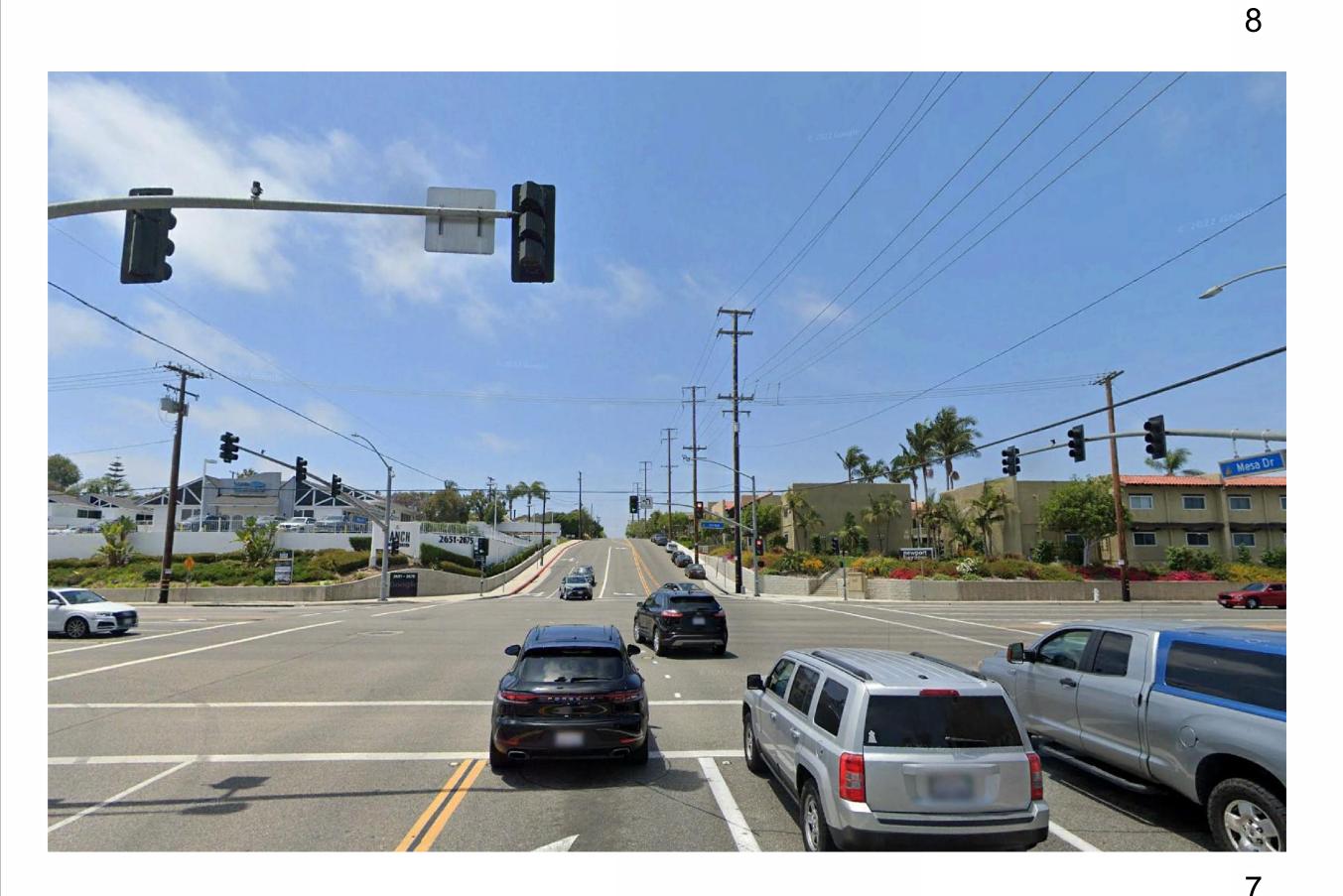


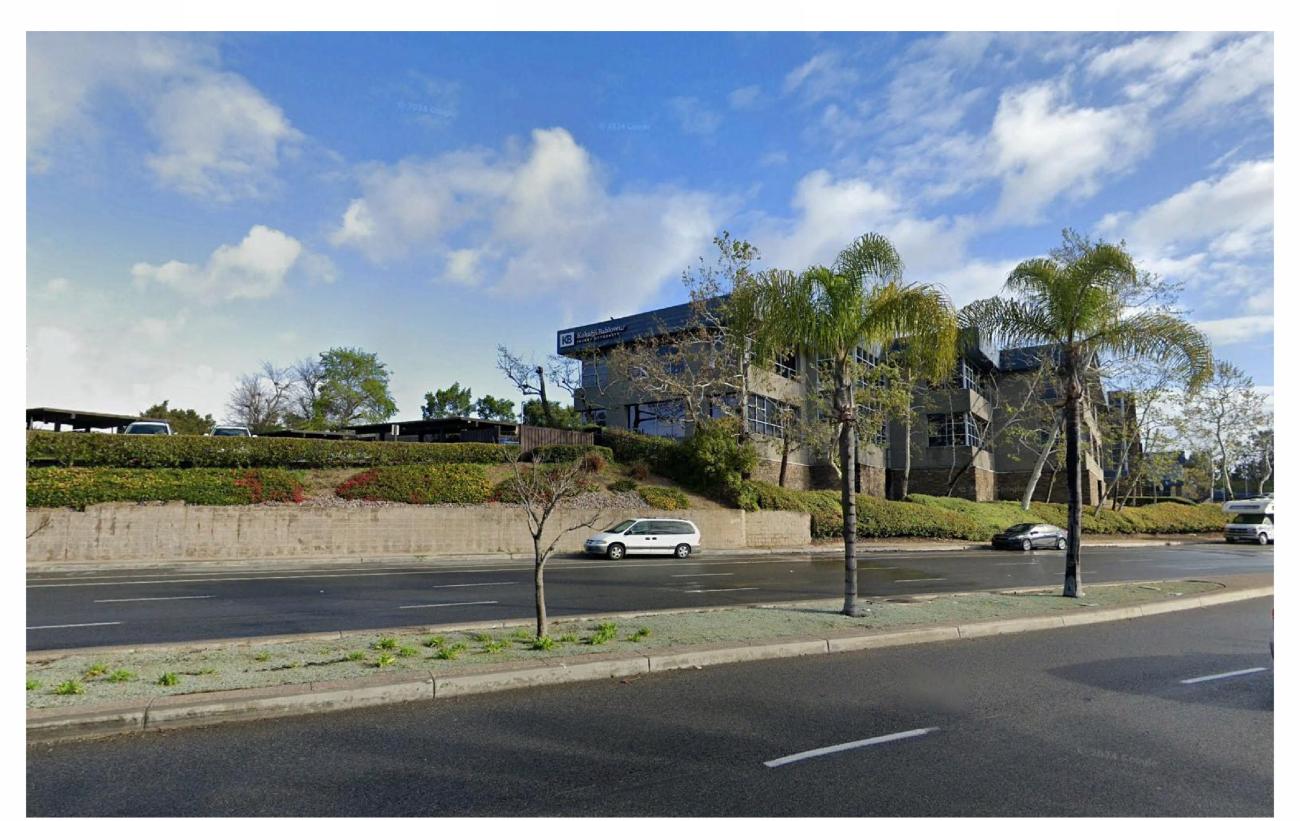


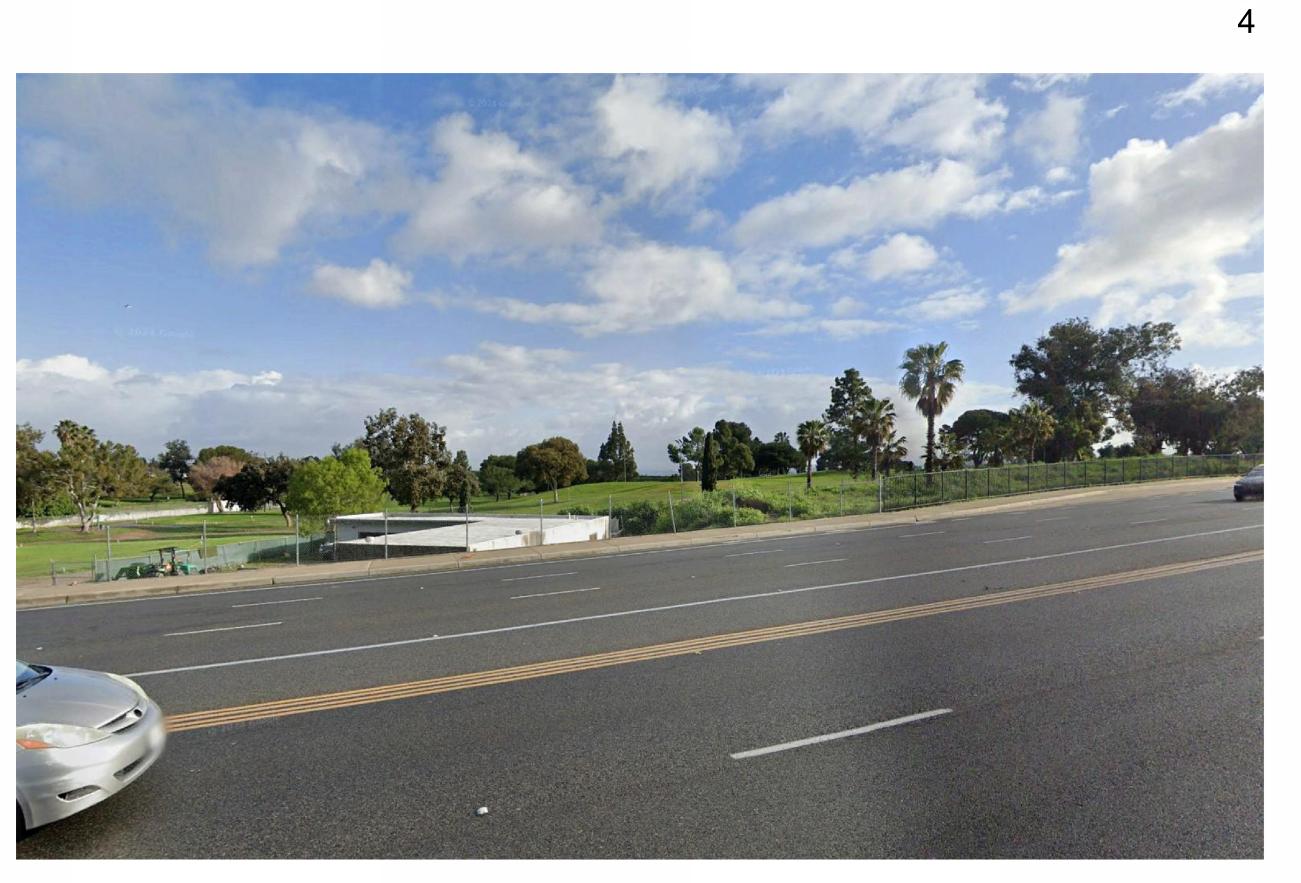










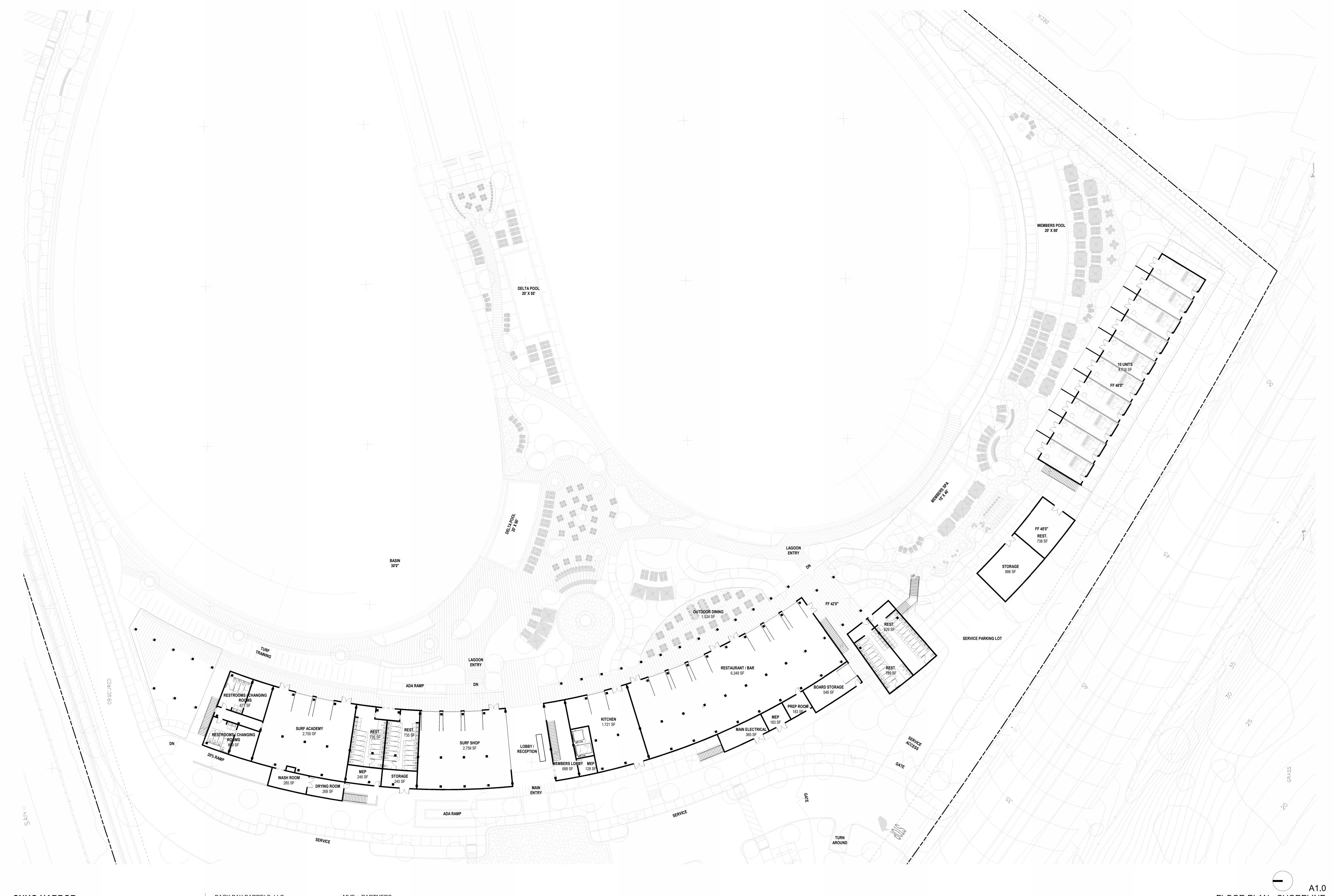


SNUG HARBOR NEWPORT BEACH, CA 92660

BACK BAY BARRELS, LLC 3857 BIRCH STREET, SUITE 521 NEWPORT BEACH, CA 92660 PHONE: 949.300.9632

MVE + PARTNERS 1900 MAIN STREET, SUITE 800 IRVINE, CA 92614 PHONE: 949.809.3388

SITE CONTEXT IMAGERY



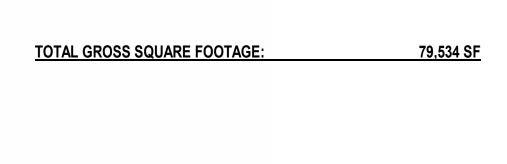
SITE DEVELOPMENT REVIEW

LEVEL	PROGRAM	AREA
LEVEL B1	CORRIDOR	2,916 SF
LEVEL B1	MEP	479 SF
EVEL B1	STAFF	1,210 SF
	1 - 11 - 11	4,605 SF
EVEL 1	CORRIDOR	200 SF
_EVEL 1	DRYING ROOM	268 SF
EVEL 1	KITCHEN	1,721 SF
EVEL 1	MAIN ELECTRICAL	365 SF
EVEL 1	MEMBERS LOBBY	688 SF
EVEL 1	MEP	557 SF
EVEL 1	PREP ROOM	183 SF
EVEL 1	REST.	1,470 SF
EVEL 1	RESTAURANT / BAR	6,349 SF
EVEL 1	RESTROOMS / CHANGING ROOMS	1,287 SF
EVEL 1	STORAGE	245 SF
EVEL 1	SURF ACADEMY	2,750 SF
EVEL 1	SURF SHOP	2,759 SF
EVEL 1	WASH ROOM	285 SF
		19,127 SF
EVEL 2	CORRIDOR	90 SF
EVEL 2	FITNESS	3,240 SF
EVEL 2	MEMBER LOCKERS / SPA	2,480 SF
EVEL 2	MEP	583 SF
EVEL 2	REST.	1,162 SF
LEVEL 2 STORAGE		295 SF
EVEL 2	2 STORAGE / BOH	
EVEL 2	THE POINT LOUNGE	6,846 SF
EVEL 2	YOGA	1,790 SF
		16,922 SF
EVEL 3	CORRIDOR	80 SF
EVEL 3	MEP	404 SF
EVEL 3	RECORDING STUDIO	2,188 SF
EVEL 3	REST.	261 SF
EVEL 3	SERVICE	427 SF
EVEL 3	STORAGE	184 SF
LEVEL 3 VIP		6,143 SF
		9,687 SF 50,341 SF
	DENEDAL DIAM COLLADE FORT CO.	
	GENERAL PLAN SQUARE FOOTAGE -	
LEV	EL PROGRAM	AREA
THLETE	10 UNITS	4,716 SF

GENERAL PLAN SQUARE FOOTAGE - A. A.			
LEVEL	AREA		
ATHLETE ACCOMMODATIONS LEVEL 1	10 UNITS	4,716 SF	
	4,716 SF		
ATHLETE ACCOMMODATIONS LEVEL 2	10 UNITS	4,716 SF	
	4,716 SF		
	9,432 SF		
TOTAL GENERAL PLAN SQUARE FOOTAGE: 59,773 SF			

EXCLUDED AREA FROM GENERAL PLAN S.F CLUBHOUSE					
LEVEL	PROGRAM	AREA			
LEVEL B1	STORAGE 1, GOLF CART STORAGE	3,571 SF			
LEVEL B1	STORAGE 2, FACILITY STORAGE	5,472 SF			
LEVEL B1	STORAGE 3, SURF BOARD 6,928 SF STORAGE				
		15,971 SF			
LEVEL 1	BOARD STORAGE	548 SF			
LEVEL 1	REST.	1,618 SF			
	•	2,166 SF			
		18,137 SF			

LEVEL	PROGRAM	AREA
ATHLETE ACCOMMODATIONS LEVEL 1	REST.	738 SF
ATHLETE ACCOMMODATIONS LEVEL 1	STORAGE	886 SF
		1,624 SF
		1,624 SF
TOTAL EXCLUDED AREA GENERAL PLAN SQUARE		19,761 SF



* General Plan Table LU-1 Parks and Recreation - Private uses in this category may include incidental buildings, such as maintenance equipment sheds, supply storage, and restrooms, not included in determining intensity limits.

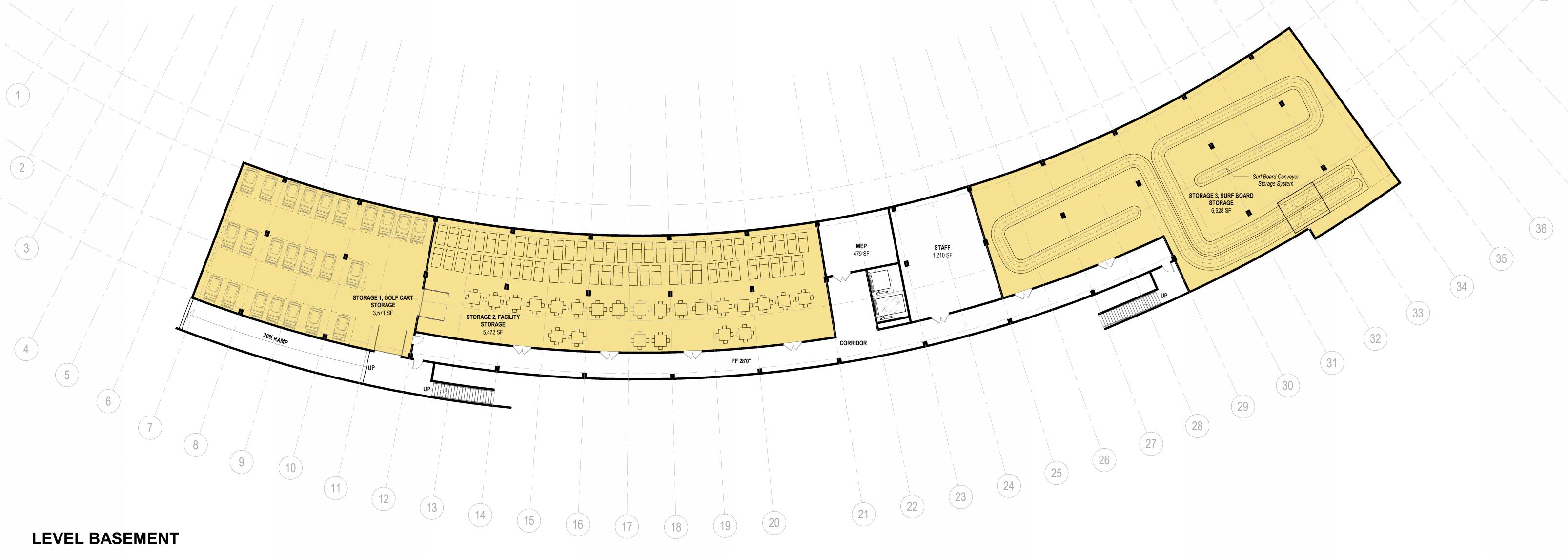
SNUG HARBOR NEWPORT BEACH, CA 92660

BACK BAY BARRELS, LLC 3857 BIRCH STREET, SUITE 521 NEWPORT BEACH, CA 92660 PHONE: 949.300.9632

MVE + PARTNERS 1900 MAIN STREET, SUITE 800 IRVINE, CA 92614 PHONE: 949.809.3388



LEVEL 1



FLOOR PLAN - LEVEL B1 + LEVEL 1 1/16" = 1'-0" 12/23/2024

LEVEL		PROGRAM	AREA
	CODDIDOD		2.040.05
_EVEL B1	CORRIDOR		2,916 SF
EVEL B1	MEP		479 SF
EVEL B1	STAFF		1,210 SF
			4,605 SF
_EVEL 1	CORRIDOR		200 SF
EVEL 1	DRYING ROO	OM .	268 SF
_EVEL 1	KITCHEN		1,721 SF
EVEL 1	MAIN ELECT		365 SF
EVEL 1	MEMBERS L	OBBY	688 SF
EVEL 1	MEP		557 SF
EVEL 1	PREP ROOM		183 SF
EVEL 1	REST.		1,470 SF
EVEL 1	RESTAURAN	IT / BAR	6,349 SF
EVEL 1	RESTROOMS	S / CHANGING ROOMS	1,287 SF
EVEL 1	STORAGE		245 SF
EVEL 1	SURF ACADI	EMY	2,750 SF
EVEL 1	SURF SHOP		2,759 SF
EVEL 1 WASH ROOM			285 SF
	1		19,127 SF
EVEL 2	CORRIDOR		90 SF
EVEL 2	FITNESS		
EVEL 2			3,240 SF 2,480 SF
EVEL 2	MEP		583 SF
EVEL 2	REST.		1,162 SF
EVEL 2	STORAGE	295 SF	
EVEL 2	STORAGE / BOH		436 SF
EVEL 2		THE POINT LOUNGE	
EVEL 2	YOGA		6,846 SF 1,790 SF
			16,922 SF
EVEL 3	CORRIDOR		80 SF
EVEL 3	MEP		
EVEL 3		RECORDING STUDIO	
EVEL 3	REST.		2,188 SF 261 SF
EVEL 3	SERVICE		427 SF
EVEL 3	STORAGE		184 SF
EVEL 3			
LEVEL 3 VIP		6,143 SF	
			9,687 SF
50,341 SF			
C	SENERAL PLAI	N SQUARE FOOTAGE -	A. A.
LEV	EL	PROGRAM	AREA
	46.	INUTO	47400=
THI FTF	110 1	INITS	4 716 SF

EXCLUDED AREA FROM GENERAL PLAN S.F CLUBHOUSE					
LEVEL	PROGRAM	AREA			
LEVEL B1	STORAGE 1, GOLF CART STORAGE	3,571 SF			
LEVEL B1	STORAGE 2, FACILITY STORAGE	5,472 SF			
LEVEL B1	STORAGE 3, SURF BOARD STORAGE	6,928 SF			
		15,971 SF			
LEVEL 1	BOARD STORAGE	548 SF			
LEVEL 1	REST.	1,618 SF			
•		2,166 SF			
		18,137 SF			

ATHLETE ACCOMMODATIONS LEVEL 2

TOTAL GENERAL PLAN SQUARE FOOTAGE:

4,716 SF 4,716 SF

4,716 SF 9,432 SF

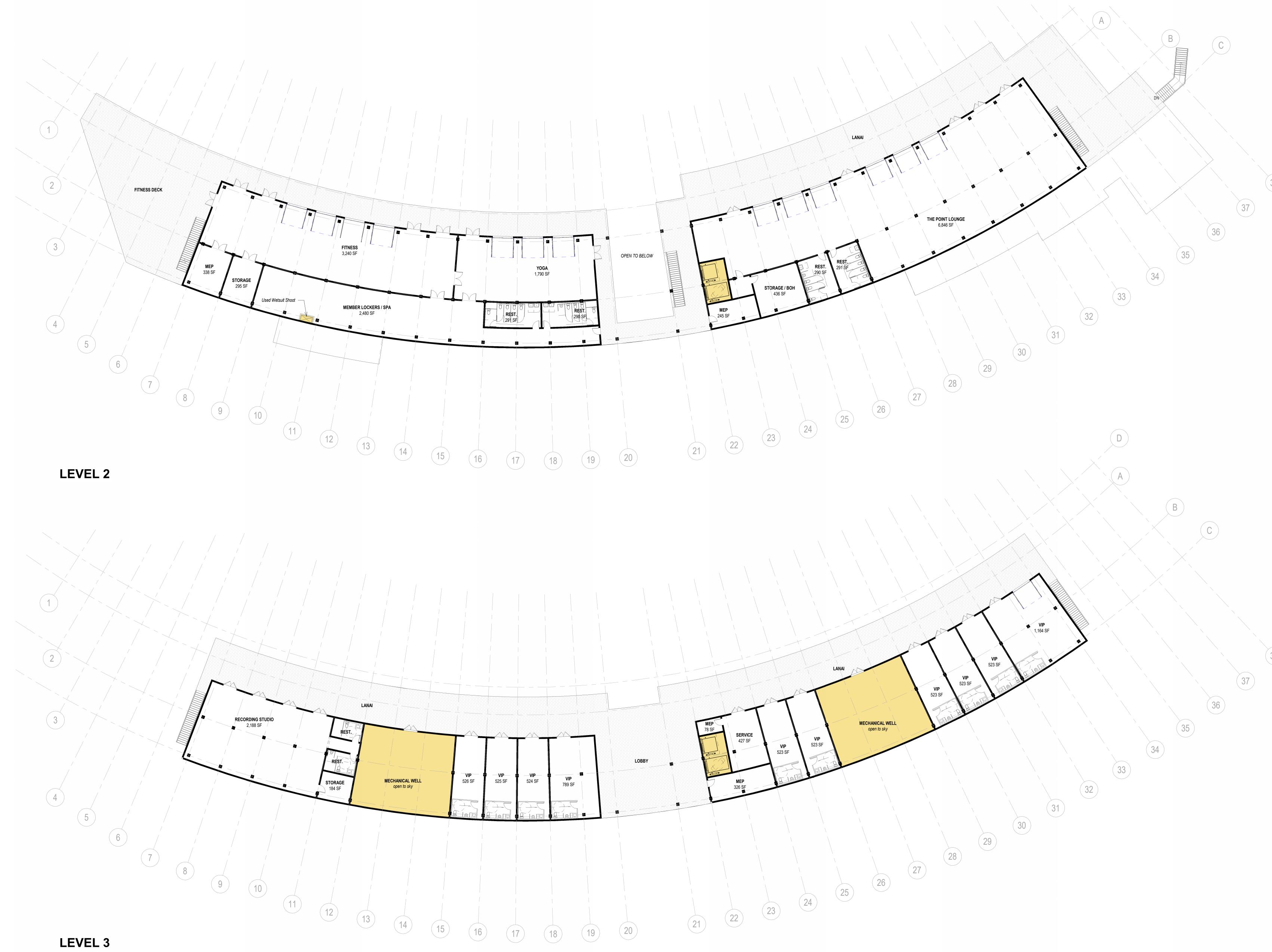
		18,137 SF
EXCLUDED	AREA FROM GENERAL	PLAN S.F.
LEVEL	PROGRAM	AREA
ATHLETE ACCOMMODATIONS LEVEL 1	REST.	738 SF
ATHLETE ACCOMMODATIONS LEVEL 1	STORAGE	886 SF
		1,624 SF
		1,624 SF
TOTAL EXCLUDED AREA		
GENERAL PLAN SQUARE	<u> FOOTAGE:</u>	19,761 SF

TOTAL GROSS SQUARE FOOTAGE:

* General Plan Table LU-1 Parks and Recreation - Private uses in this category may include incidental buildings, such as maintenance equipment sheds, supply storage, and restrooms, not included in determining intensity limits.

SNUG HARBOR NEWPORT BEACH, CA 92660 BACK BAY BARRELS, LLC 3857 BIRCH STREET, SUITE 521 NEWPORT BEACH, CA 92660 PHONE: 949.300.9632

MVE + PARTNERS 1900 MAIN STREET, SUITE 800 IRVINE, CA 92614 PHONE: 949.809.3388



	ERAL PLAN SQUARE FOOTAGE - CLU	
LEVEL	PROGRAM	AREA
EVEL B1	CORRIDOR	2,916 SF
EVEL B1	MEP	479 SF
EVEL B1	STAFF	1,210 SF
	01711	4,605 SF
EVEL 1	CORRIDOR	200 SF
EVEL 1	DRYING ROOM	268 SF
EVEL 1	KITCHEN	1,721 SF
EVEL 1	MAIN ELECTRICAL	365 SF
EVEL 1	MEMBERS LOBBY	688 SF
EVEL 1	MEP	557 SF
EVEL 1	PREP ROOM	183 SF
EVEL 1	REST.	1,470 SF
EVEL 1	RESTAURANT / BAR	6,349 SF
EVEL 1		<u> </u>
	RESTROOMS / CHANGING ROOMS	1,287 SF
EVEL 1	STORAGE	245 SF
EVEL 1	SURF ACADEMY	2,750 SF
EVEL 1	SURF SHOP	2,759 SF
EVEL 1	WASH ROOM	285 SF
		19,127 SF
EVEL 2	CORRIDOR	90 SF
EVEL 2	FITNESS	3,240 SF
EVEL 2	MEMBER LOCKERS / SPA	2,480 SF
EVEL 2	MEP	583 SF
EVEL 2	REST.	1,162 SF
EVEL 2	STORAGE	295 SF
EVEL 2	STORAGE / BOH	436 SF
EVEL 2	THE POINT LOUNGE	6,846 SF
EVEL 2	YOGA	1,790 SF
		16,922 SF
EVEL 3	CORRIDOR	80 SF
EVEL 3	MEP	404 SF
EVEL 3	RECORDING STUDIO	2,188 SF
EVEL 3	REST.	261 SF
EVEL 3	SERVICE	427 SF
EVEL 3	STORAGE	184 SF
EVEL 3	VIP	6,143 SF
		9,687 SF
		50,341 SF
		55,571 OI
(SENERAL PLAN SQUARE FOOTAGE -	A. A.
(LEV		A. A. AREA
LEV	EL PROGRAM	AREA
LEV	EL PROGRAM 10 UNITS	
LEV ATHLETE ACCOMMC	EL PROGRAM 10 UNITS	AREA
LEV	EL PROGRAM 10 UNITS	4,716 SF
LEV ATHLETE ACCOMMC LEVEL 1	EL PROGRAM 10 UNITS DATIONS	4,716 SF 4,716 SF
LEV ATHLETE ACCOMMC	EL PROGRAM 10 UNITS 10 UNITS	4,716 SF

LEVEL	PROGRAM		AREA	
LEVEL B1	STORAG STORAG	GE 1, GOLF CART GE	3,571 SF	
LEVEL B1	STORAG	SE 2, FACILITY STORAGE	5,472 SF	
LEVEL B1	STORAG STORAG	GE 3, SURF BOARD GE	6,928 SF	
			15,971 SF	
LEVEL 1	BOARD :	STORAGE	548 SF	
LEVEL 1	REST.		1,618 SF	
			2,166 SF	
LEVI	EXCLUDED AREA FROM GENEI		LAN S.F. AREA	
LEVI	EL	PROGRAM	AREA	
ATHLETE ACCOMMO LEVEL 1	DATIONS	REST.	738 SF	
ATHLETE ACCOMMODATIONS LEVEL 1		STORAGE	886 SF	
			1,624 SF	
			1,624 SF	
TOTAL FYCU	IIDED AREA	FROM		
TOTAL EXCLUDED AREA FROM GENERAL PLAN SQUARE FOOTAGE: 19,761			19,761 SF	
			,	

EXCLUDED AREA FROM GENERAL PLAN S.F. - CLUBHOUSE

TOTAL GENERAL PLAN SQUARE FOOTAGE:

4,716 SF 9,432 SF



10 UNITS 4,716 SF



LEVEL 1

* General Plan Table LU-1 Parks and Recreation - Private uses in this category may include incidental buildings, such as maintenance equipment sheds, supply storage, and restrooms, not included in determining intensity limits.

SNUG HARBOR NEWPORT BEACH, CA 92660

TOTAL GROSS SQUARE FOOTAGE:

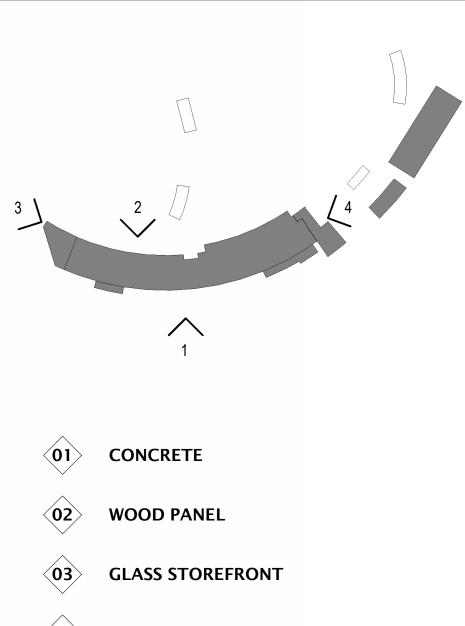
SITE DEVELOPMENT REVIEW

79,534 SF

BACK BAY BARRELS, LLC 3857 BIRCH STREET, SUITE 521 NEWPORT BEACH, CA 92660 PHONE: 949.300.9632

MVE + PARTNERS 1900 MAIN STREET, SUITE 800 IRVINE, CA 92614 PHONE: 949.809.3388

FLOOR PLAN - ATHLETE ACCOMMODATIONS LEVEL 1 + 2 1/16" = 1'-0"



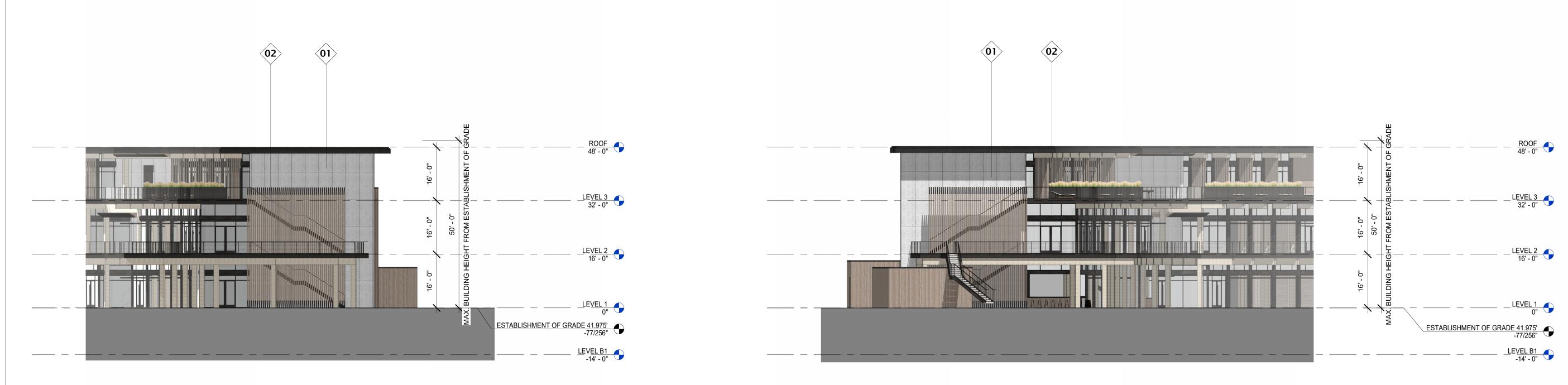
06 HEAVY TIMBER COLUMN & BEAM



CLUBHOUSE BUILDING ELEVATION - 1



CLUBHOUSE BUILDING ELEVATION - 2



CLUBHOUSE BUILDING ELEVATION - 3

CLUBHOUSE BUILDING ELEVATION - 4

SITE DEVELOPMENT REVIEW

ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 1

HEAVY TIMBER COLUMN & BEAM

90

GLASS ROLL-UP DOOR

60

METAL RAILING

050

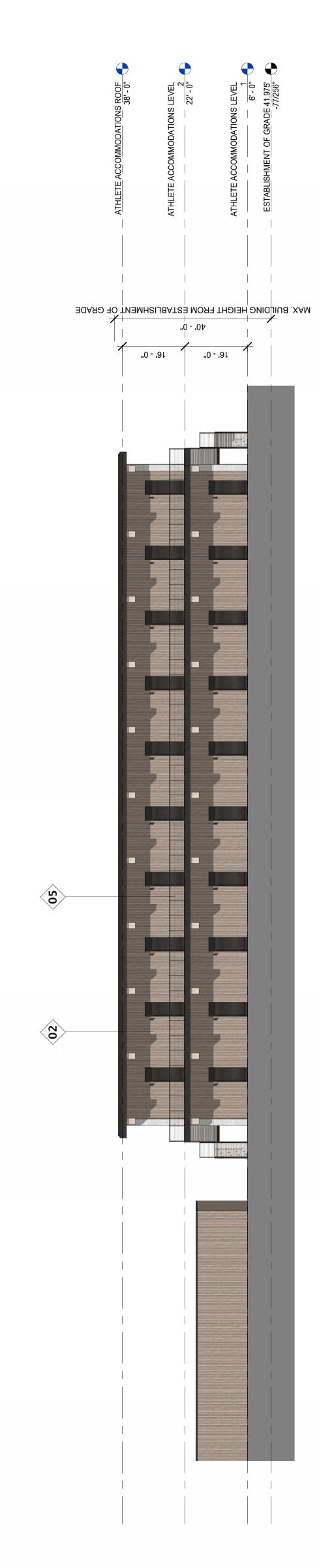
GLASS STOREFRONT

03

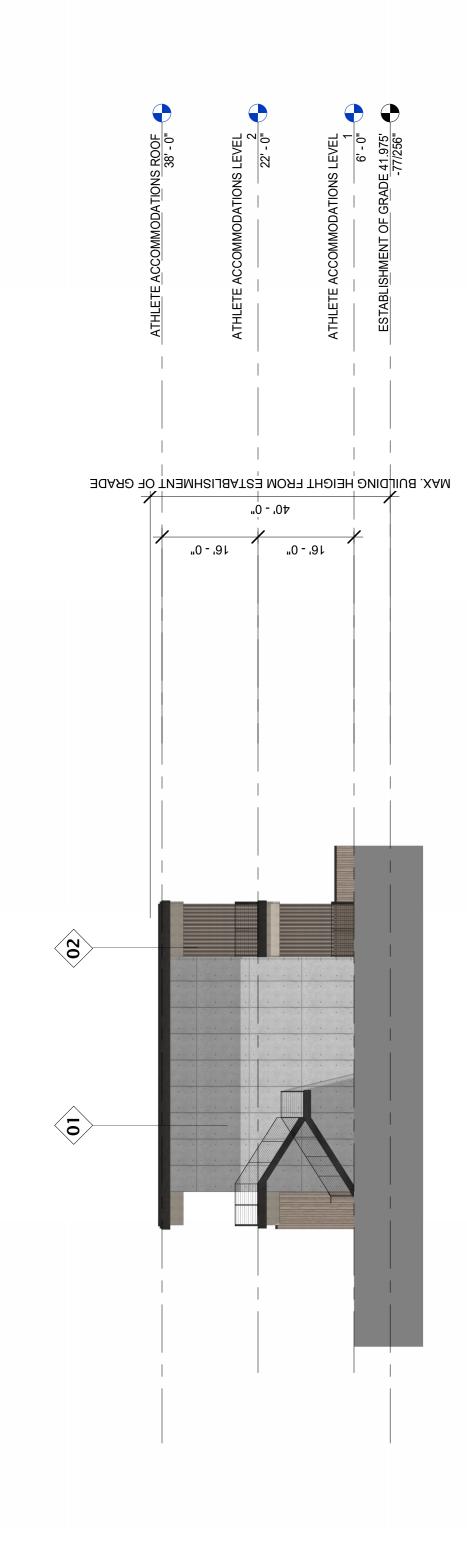
WOOD PANEL

05

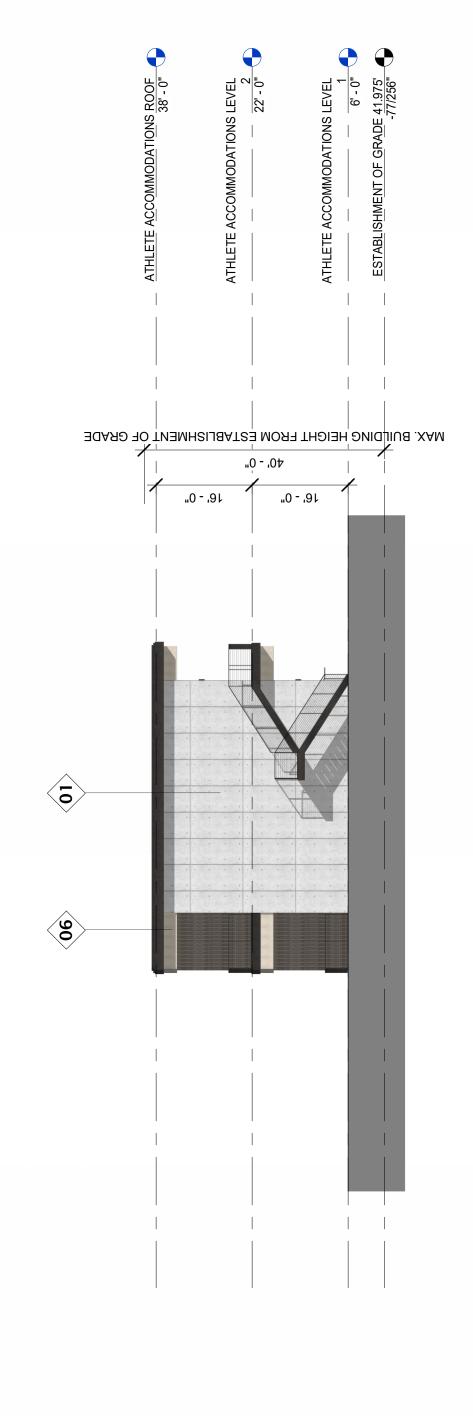
CONCRETE



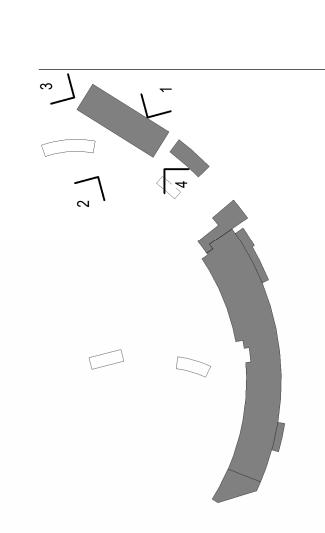
ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 2

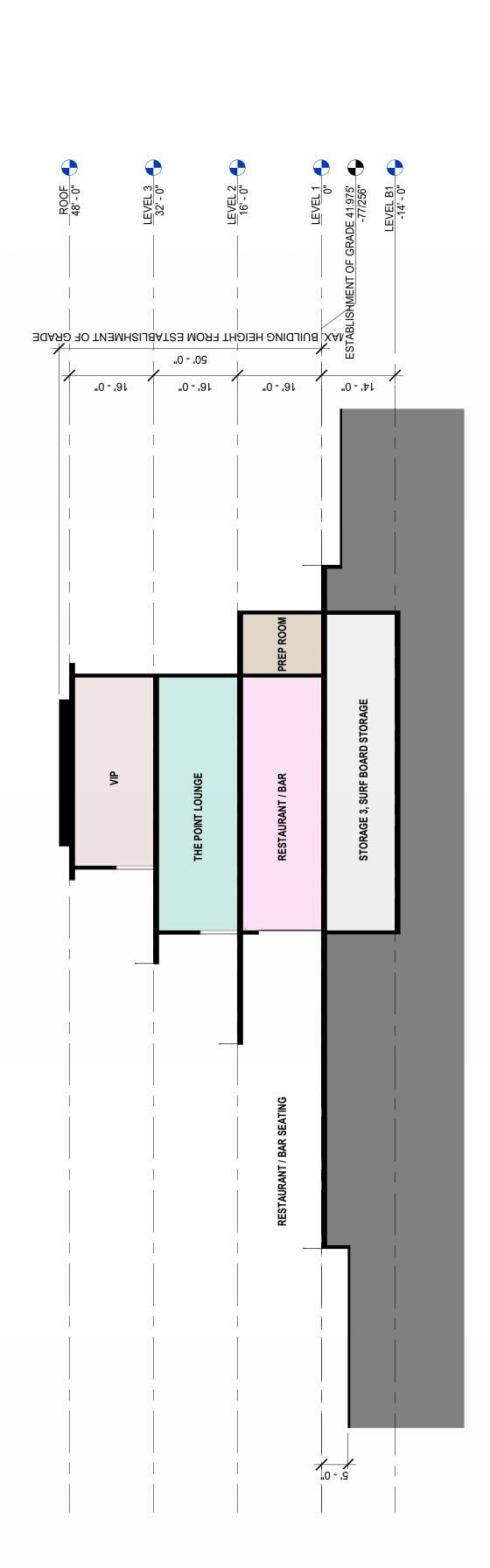


ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 3



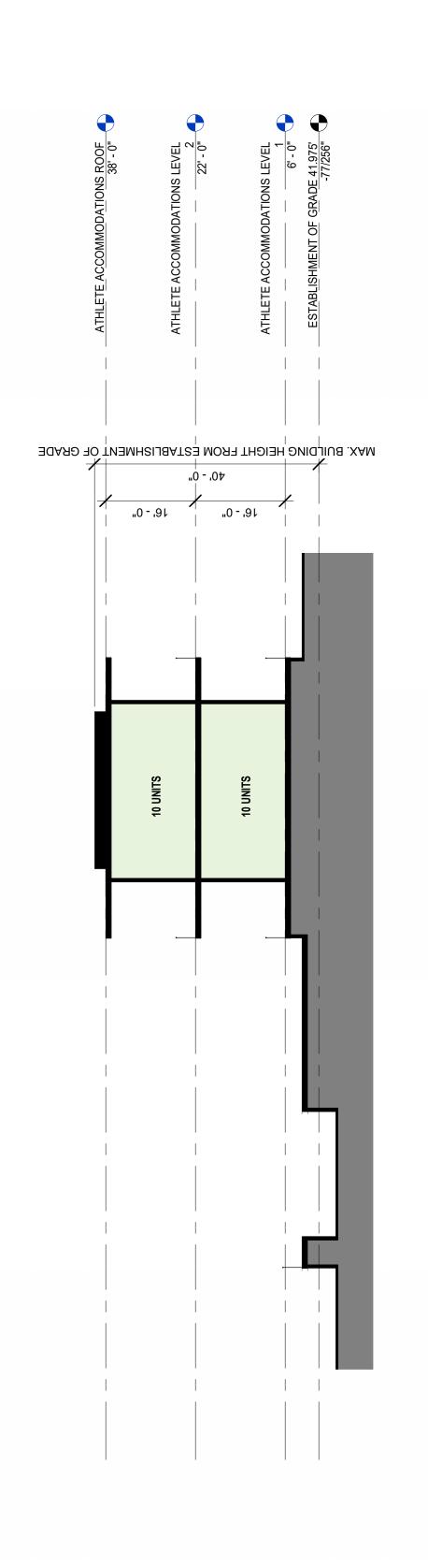
ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 4



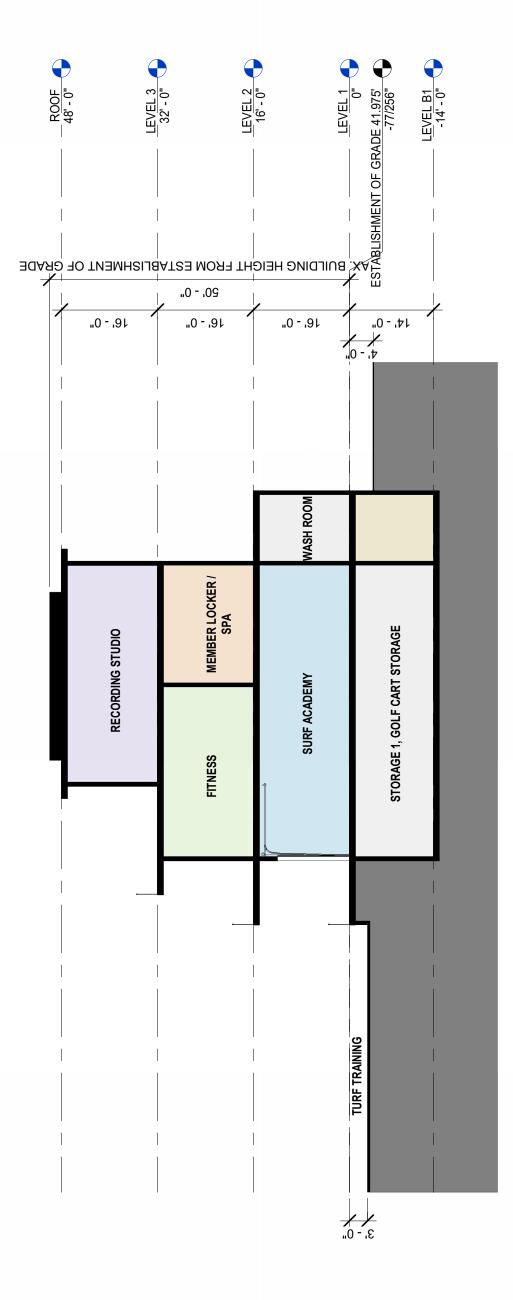


CLUBHOUSE BUILDING SECTION - 2

7



3 ATHLETE ACCOMMODATIONS - 1



CLUBHOUSE BUILDING SECTION - 1

_



SITE DEVELOPMENT REVIEW

BACK BAY BARRELS, LLC 3857 BIRCH STREET, SUITE 521 NEWPORT BEACH, CA 92660 PHONE: 949.300.9632

Sue Williams

Subject: FW: NPB2- New system Model lan Adam; Oriana Slasor; Greg Attard :oT Monday, October 14, 2024 11:21 AM :tn92 Steve Coyne <steve@coynedev.com> From:

Fuscoe Prjs, Filed in TonicDM, 04206-001 Snug Harbor Surf Park

Just wanted to confirm that you all are working with the new figures of 10.170 million gallons for the capacity of the new

two lagoon layout.

Thanks,

Categories:

Coyne Development Corporation Steve Coyne

2596-300-646

From: Diego Setien <diegos@wavegarden.com>

To: Steve Coyne <steve@coynedev.com> Date: Thursday, October 10, 2024 at 11:52 PM

Cc: adam cleary <adam@surffarm.com>, Pieter Berger <pberger@mve-architects.com>, Aritz Alberdi

<ariitz@wavegarden.com>, Imanol Sorazu <imanol@wavegarden.com>, Lucia Bilbao

<lucia@wavegarden.com>, Engineering Wavegarden <engineering@wavegarden.com>, Sean Young

<sean@wavegarden.com>

Subject: Re: NPB2- New system Model

Hi Steve,

Yes, we have increased water depth the deepest parts of the lagoon for circa +0,5m and as such

overall quantities increase in 8.000m3 (2 Mill gal).

Cheers,

Diego Setién

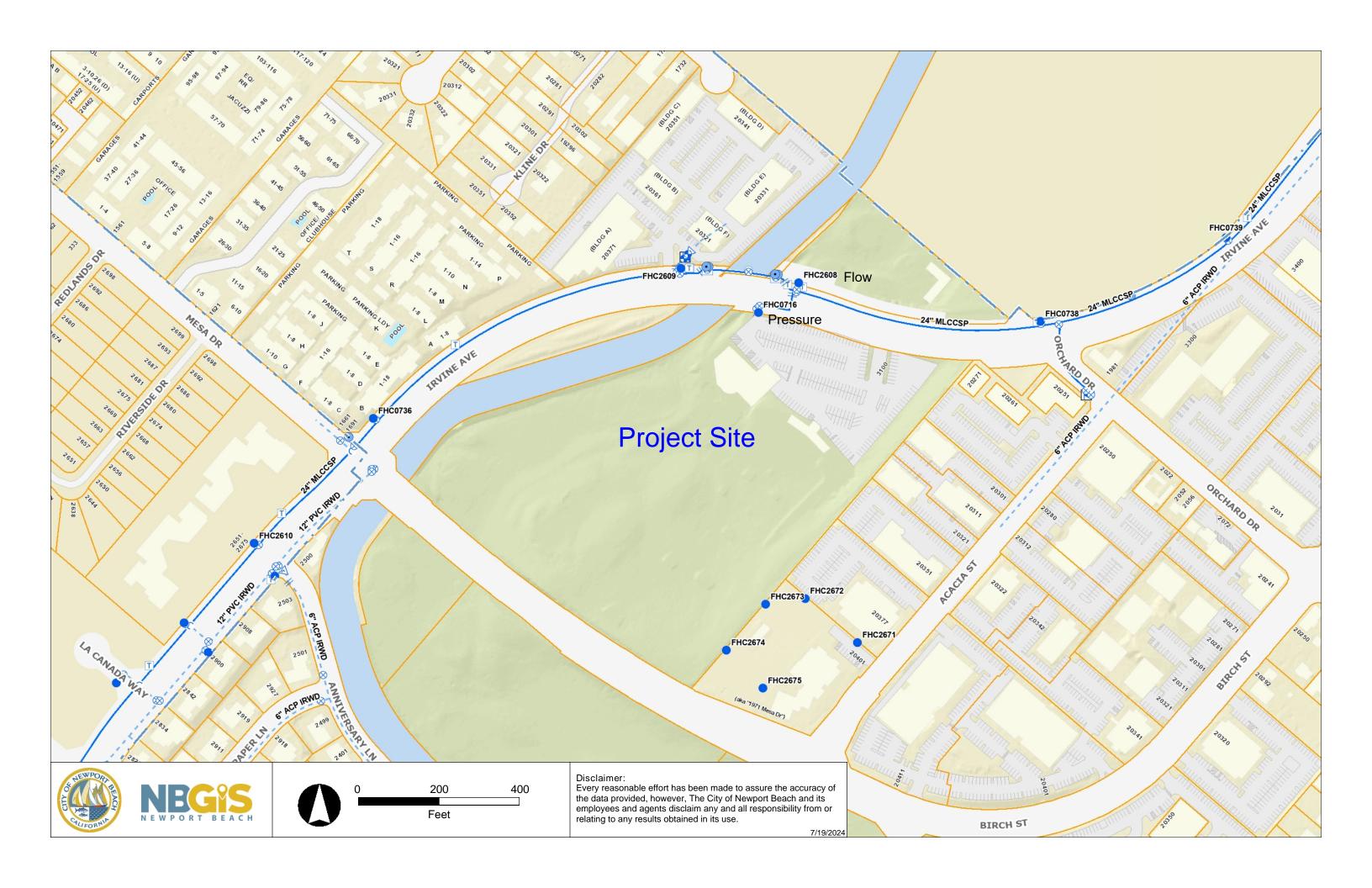
WAVEGARDEN

Office: +34 943 041 018 Business Development

www.wavegarden.com

×

Appendix 2 Water Atlas Map

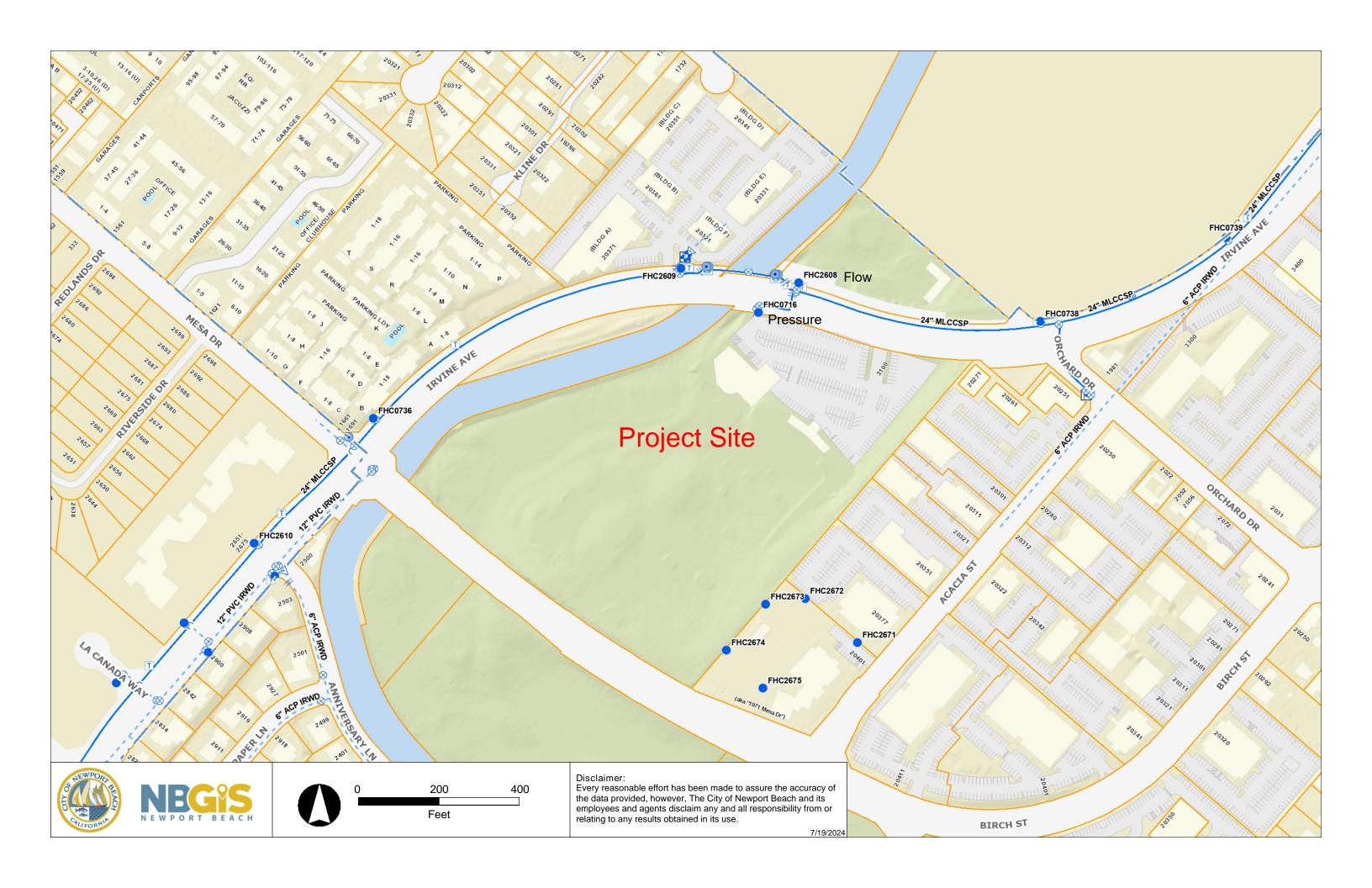


Appendix 3 Fire Hydrant Test Results

CITY OF NEWPORT BEACH UTILITIES DEPARTMENT

FIRE HYDRANT FLOW TEST

AMOUNT PAID:	\$475.00	DATE: <u>07/031/2024</u>	
CHECK NO:		TIME: 6:00AM	
TEST NO:		WEATHER: CLEAR	
PROJECT: PROJECT LOCATION: TEST CONDUCTED FOR: TEST PERFORMED BY: TEST WITNESSED BY:	3100 IRVINE AVE SUE WILLIAMS O'CAMPO/ AUGER		
	FIELD OBSERVATION	S AND FLOW DATA	
STATIC HYDRANT #: F/H MANUFACTURER: STATIC PRESSURE, (Ps , psi), F RESIDUAL PRESSURE, (Pr , psi) FLOW HYDRANT #: F/H MANUFACTURER: STATIC PRESSURE, PRE-FLOW F/H OUTLET SIZE (2.5 or 4.0): FLOW LOSS COEFFICIENT - T PITOT GAUGE READING (p, ps OBSERVED FLOW: THE OBSERVER FOLLOWING EQUATION:	FLOWING: 2608 CLOW (INFO ONLY, NOT FOR TEST 2.5 UBE C=1.0 / BUTT C=0.9 1): 74	(d, inches)	
-		AMETER IN INCHES; p IS THE PITOT GA .0 FOR FLOW TUBES AND C = 0.9 FOR BU	
OBSERVED FLOW (Qs, gpm	n): 1443	GPM	
EQUATION USING THE INITIAL (WATER PRESSURE:		T CAN BE DETERMINED FROM THE FOI THE RESIDUAL (DYNAMIC)	LOWING
WHERE; Q (STATIC OR RESIDUAL PRESSURE IN PSI. NOTE: A 10 PSI.	L) IS THE FLOW IN GPM; AND P	,	
CALCULATED FLOW AT 2	0 psi (Qr, gpm):	5969 GPM	



Appendix 4 Design Criteria

		Land Use		Residential/Non-Residential (1)		Irrigation Demands (2)		
DESCRIPTION OF THE		f t						
Land Use			Average				% Area	Irrigation
Code	Land Use Category	Agency	Density	Interior	Exterior	Total	Irrigated	Factor
1100	Residential	3			Gal/DU/Da	у	3.	Gal/AC/Day
1111	Rural Density	Orange	0.3	250	170	420	0	1,000
1112	Rural Density	Irvine	0.3	250	750	1,000	5	2,800
1115	Rural Density	County of Orange	0.3	300	350	650	5	2,800
1121	Estate Density	Orange	1.2	300	350	650	5	2,800
1122	Estate Density	Irvine	0.5	300	225	525	5	2,800
1126 1131	Estate Density	Lake Forest	0.5	300 300	350 350	650	7 8	3,000
1131	Low Density	Orange	4.0 3.0	215	190	650 405	16	2,500
1133	Low Density Low Density	Irvine Newport Beach	1.0	250	260	510	17	2,200 2,800
1134	Low Density PC	Tustin	4.5	450	1,550	2,000	17	2,800
1135	Suburban Density	County of Orange	9.3	215	45	260	15	2,500
1136	Low Density	Lake Forest	3.0	210	210	420	20	2,800
1141	Low-Medium Density	Orange	10.5	235	145	380	15	2,500
1146	Low-Medium Density	Lake Forest	11.0	200	155	355	10	3,000
1153	Medium-Low Density	Newport Beach	2.8	400	350	750	10	2,800
1161	Medium Density	Orange	19.5	200	150	350	15	2,800
1162	Medium Density	Irvine	7.5	155	145	300	15	2,800
1163	Medium Density	Newport Beach	5.0	200	230	430	20	2,800
1164	Medium Density PC	Tustin	11.8	160	90	250	15	2,800
1166	Medium Density	Lake Forest	7.5	150	50	200	15	2,800
1172	Medium-High Density	Irvine	17.5	125	35	160	22	2,400
1175	Urban Density	County of Orange	29.0	130	55	185	20	2,800
1176	Medium-High Density	Lake Forest	17.5	110	105	215	17	2,500
1182	High Density	Irvine	32.5	120	23	143	20	2,800
1183	High Density	Newport Beach	12.3	110	15	125	20	3,200
1184	High Density PC	Tustin	17.4	100	25	125	15	2,800
1186	High Density	Lake Forest	32.5	100	25	125	20	2,800
1191 1192	High Rise Density - Orange	Orange	35.0 40.0	115 120	10	125 125	20 20	2,800
	High Rise Density - Irvine	Irvine	40.0	120	The second second	1300000	20	2,800
1200 1210	Commercial General Office		20.0	62	Gal/KSF/Da	72	20	Gal/AC/Day 2,500
1221	Community Commercial		9.0	142	33	175	20	3,500
1222	Regional Commercial		10.0	130	10	140	20	3,500
1230	Commercial Recreation		8.0	41	20	60	30	3,000
1235	Hotel (Gal/Room/Day)		45.0	110	50	160	30	2,800
1240	Institutional	6.1	8.0	30	15	45	30	2,750
1244	Hospital		9.0	165	65	230	30	2,850
1260	School		10.0	20	8	28	50	2,500
1261	UCI		10.0	215	15	230	40	3,800
1290	Hotel (Gal/Room/Day)		45.0	110	50	160	30	2,800
1300	Industrial			Gal/KSF/Day			Gal/AC/Day	
1300	Industrial		9.1	600	25	625	20	2,800
1310	Industrial - Light		18.0	67	3	70	20	2,800
1320	Industrial - Heavy		25.0	2,000	18	2,018	20	2,800
1400	Open Space and Other				Gal/KSF/Da	y	44-7	Gal/AC/Day
1820	Community Park		1.0	0	0	0	86	2,200
1830	Regional Park		1.0	0	0	0	75	2,200
1840	Fuel Modification Zone		1.0	0	0	0	100	1,000
2000	Agriculture				Gal/KSF/Da	у	77	Gal/AC/Day
2100	Low-Irrigated AG Potable		1.0	0	0	0	80	1,800
2110	Low-Irrigated AG Untreated		1.0	0	0	0	80	1,800
2120	Low-Irrigated AG Recycled		1.0	0	0	0	80	1,800
2200	High-Irrigated AG Potable		1.0	0	0	0	80	3,100
2210	High-Irrigated AG Untreated	1.1	1.0	0	0	0	80	3,100
2220	High-Irrigation AG Recycled		1.0	0	0	0	80	3,100
(1) The Reside	ntial/Non-Residential demands area assumed	to be supplied by the Potable	water System, e	except for those	users as describ	ea in Section 3.4.1	and Section 3.4.2.	

In the following graph it can be seen how rainfall compensates water evaporation and final fresh water requirements are much lower than evaporation losses.



In addition, it may is prudent to also consider a possible drain/fill of the whole Cove lagoon for exceptional maintenance issues; this represents some 10.2 Mgal of additional water requirements (although this is unlikely to be required every year).

In addition, we have made a rough estimation considering that the water temperature doesn't go below 19°C. This artificial increase of water temperature generates an "extra" evaporation. It is like having summer water temperature the whole year.

Table 2.General water requirements estimation for Newport Beach Cove considering that water temperature is over 19°C

Surf lagoon water loss calculation	Totals	Gallons
Temperature mean (ºC)	19	
Open water Evaporation Estimate (m3/year) (gal/year)	49.079	12.966.764
Wave operation Factor WG	1,45	
Backwash losses (m3/year) (gal/year)	730	192.867
Average Evaporation Water Loss (m3/day) (gal/year)	195	51.512
Operating Water Loss (m3/year)(gal/year)	71.895	18.994.674
Annual rainfall (mm)(inch)	267	11
Annual rainfall (m3) (gal)	5.284	1.396.018
Total Year Water Requirements (m3/year) (gal/year)	66.611	17.598.655
Mean total water requirements (m3/day) (gal/day)	182	48.215
Average total water requirements not considering Annual fill and no rain (m3/day)(gal/day)	197	52.040
Maximum daily August (max average temp) (m3/day)(gal/day)	272	71.811

Appendix 5 Existing Water Usage Information

Snug Harbor - Existing domestic water usage for clubhouse and pro-shop. Does not include irrigation, that is per well water.

Water Usage July 23 to June 24

	2023	2024
July	46376	43884
August	42636	47124
September	49368	42636
October	41140	41140
November	43384	41140
December	39644	35156
January	42636	43384
February	43384	35156
March	44132	32912
April	47124	37400
May	43384	41888
June	46376	43384
Average	44132	40434

42283 gal/month
1,409 gal/day
1.0 GPM
Existing Water Usage
(Credit)

Snug Harbor - Existing domestic water usage for clubhouse and pro-shop. Does not include irrigation, that is per well water.

















XX.

Connect With Utility

User Guide

Notification

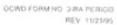


Compare Water Use

View Gallon









P.O. BOX 8300 FOUNTAIN VALLEY, CALIFORNIA 92728-8300 TELEPHONE: 714-378-3200

WATER PRODUCTION STATEMENT

For Period 01/01/2020 To 06/30/2020

To be completed and filed by each operator of a water producing facility within the Orange County Water District, as required by Section 29 and 29.1 of the Orange County Water District Act as amended.

Water Producing Facility No.	119-20-3-A		A. File sta	Dennent with C	Trange County	Water District. Keep	the duplicate copy.
Water Meter:	20070357-06		B. File this	s Water Prod	uction Statem	ent on or before	
VERY IMPORTANT PLEA	SE READ		08/31/2	020 If not 56	ed on or befor	re this date a 10% per	nalty charge will be assessed.
20493			C. Pay rec	fenishment a	ssessment on	or before	
NEWPORT BEACH GOLF C	OURSE IIIM	0.2000					n thereof after that date.
ATTN: SEAN XUA	JUN	2 2 2020		postmarked a			
3100 IRVINE AVE.			07/31/2	non must un	der the law by	e considered definque	nt. Please pay and file on time
NEWPORT BEACH, CA 926	60 BY		0.000				curs 30 days after due date.
Owner Well Name: NBGC-N	B				enclosed che WATER DISTI	ck or maney order pay	yable to:
Code: 06S/10W	/-12L01	Meter ID 1	Meter ID	WATER THE PARTY OF	Meter ID 3		
		20070357-06					
(1) Water meter reading end of	period	520244					
(2) Water meter reading beginni	ing of period	493989				IN	MPORTANT!!!
(3) Total units: Subtract item (2) from (1)	26255				You must compute to	he assessments due as
ACF	0.001	AND DESCRIPTION OF THE PARTY OF	and the same of th			shown in Items (6) &	(8) below. Be sure to pay
(Unit of Measurement)	(7	Multiplier)	MANAGER PROPERTY.			the total due as show	wn in Bem (9) no later than
(4) Total production in item (3) a	shave expressed in Acre-Fe	et		26.3			07/31/2020
			Ac, Ft, to no	rainest 1/10th		***************************************	
(5) Additional water produced di	uring period NOT INCLUDE	D IN			+		
WATER METER READINGS (E	xplain fully on reverse side)		Ac. Ft. to ne	arest 1/10th		PUMP TO WASTE	AN THE RESERVE OF THE PARTY OF
(6) Total water produced: Add it	terns (4) and (5)		26.3 ×	\$243.50	* S		6,404.05
		Ac. Ft. to nearest	1/10th				
CLASSI	IFICATION OF USE OF	WATER					
(7) Amount of water in item (6) u	ised for imigation purposes:		AT ALCOHOL STATE OF THE STATE O				
			Ac. Ft. to nea	irest 1/10th			
IRRIGATION, as used herein, ma floricultural crops and for pasture			ds by any me	eans for the	commercial	production of agric	ultural, horticultural or
(8) Amount of water in item (6) u	used for all purposes		26.3 ×	\$243.50	= \$		6,404.05
other than irrigation: Subtract	t item (7) from (6)	Ac. Ft. to nearest	1 1/10th				
(9) TOTAL REPLENISHMENT A	SSESSMENTS: Add \$ amo	ounts in Items (6) and	đ (8)		\$		12,808.10
	(Please be	e sure to sign the	certification	on statem	ent below)	1	
	COLUMN TO SERVICE AND ASSESSMENT OF THE PARTY OF THE PART	CERTI	FICATION	and the second of the second State	-		
I DECLARE, under the penalties		oduction statement, i	ncluding the	statement n	nade and the	e figures shown, ha	s been examined by me, and
to the best of my knowledge and		A STATE OF THE STA					
Producers (defined as Cities, Wapplicable to the meter type as qualified personnel to perform including the date of calibratio or a certified calibration technican's certification identiother similar contractor approvor the well system check shall (Date)	recommended by the res the calibration. The Prodi n and percent error, accor ician performing the calibr ification, whatever is appli wed by the District can be be provided prior to the e	pective meter manuager shall provide to mpanied by a certification and affixed wo icable. Alternatively submitted to verify	ufacturer or o the Distric ication of te- rith the enging y, results fro that accura- r.	American I it the calibr st results s neer's curre om a well sy te pumping	Water Work ation test re igned by a ent register stem check	s Association if ne esults and mainter California register ed engineer stams performed by So being reported.	one exist, and utilize nance information, ed professional engineer p or the calibration outhern California Edison of
- Antito Association Line Only	y) Payment Date:			Paum	ent Amaunt	-	
(For OCWD Accounting Use Only	Check No.			reserv	naining Due	***************************************	
Figures Verified By:	without MU.			- nen	nearing crite	·	



P.O. BOX 8300 FOUNTAIN VALLEY, CALIFORNIA 92728-8300 TELEPHONE: 714-378-3200

WATER PRODUCTION STATEMENT

For Period 07/01/2020 To 12/31/2020

To be completed and filed by each operator of a water producing facility within the Orange County Water District, as required by Section 29 and 29.1 of the Orange County Water District Act as amended.

Water Producing Facility No.	119-20-3-A		A. File state	ment with Orang	e County Wat	er District. Keep the duplicate copy.
Water Meter:	20070357-06			Water Production		
VERY IMPORTANT - PLEAS			02/28/20	21 If not filed on	or before this	date a 10% penalty charge will be assessed.
20493 NEWPORT BEACH GOLF CO ATTN: SEAN XUA 3100 IRVINE AVE. NEWPORT BEACH, CA 9266 Owner Well Name: NBGC-N	RECEI DEC 22 ACCOUNTIN	2020	01/31/20 D. Return p 01/31/20 E. If this for	ostmarked after 21 must under to avoid per m is mailed, encie E COUNTY WAT	ues at 1% per the law be con halties, 10% pi osed check or	month or fraction thereof after that date. sidered delinquent. Please pay and file on time enalty charge occurs 30 days after due date.
		20070357-06				
(1) Water meter reading end of p	period	585260				
(2) Water meter reading beginni	ng of period	520244				IMPORTANT!!!
(3) Total units: Subtract item (2)) from (1)	65016	trockwood or a constant	***************************************	Yo	u must compute the assessments due as
ACF	0.001	No. of the Control of	243,000		sh	own in Items (6) & (8) below. Be sure to pay
(Unit of Measurement)	(Mult	tickier)			the	total due as shown in Item (9) no later than
(4) Total production in item (3) a	bove expressed in Acre-Feet			65.0		01/31/2021
(6) Total water produced: Add in CLASS (7) Amount of water in item (6)	IFICATION OF USE OF W	Ac. Ft. to nearest	65.0 x	\$243.50	= \$	15,827.50
IRRIGATION, as used herein, m floricultural crops and for pastur					mmercial pro	duction of agricultural, horticultural or
(8) Amount of water in item (6)	used for all purposes		65.0 x	\$243.50	= \$	15,827.50
other than irrigation: Subtra-	ct item (7) from (6)	Ac. Ft. to nearest	1/10th	Proc Communication.	-	
(9) TOTAL REPLENISHMENT	ASSESSMENTS: Add \$ amou	nts in Items (6) and	d (8)		\$	31,655.00
	(Please be	sure to sign the	certificati	on statement	t below)	
		CERTI	FICATION	THE STATE OF THE S		
to the best of my knowledge and	d belief is a true, correct and or	omplete statement				gures shown, has been examined by me, and
applicable to the meter type a qualified personnel to perform including the date of calibration or a certified calibration technician's certification iden other similar contractor approor the well system check shall (Date)	is recommended by the respin the calibration. The Production and percent error, accommission performing the calibratification, whatever is applicated by the District can be still be provided prior to the ending of the prior to t	ective meter man er shall provide t panied by a certif tion and affixed v able. Alternativel; ubmitted to verify	ufacturer or to the Distric fication of te with the engi y, results fro that accura	American Wa t the calibration st results sign neer's current or a well syste te pumping re	ter Works A on test resu ned by a Cal t registered em check p esults are be tignature)	or follow the calibration procedure association if none exist, and utilize alts and maintenance information, lifornia registered professional engineer engineer stamp or the calibration erformed by Southern California Edison or bing reported. Calibration testing results
(For OCWD Accounting Use On			***************************************	Maria .	it Amount:	
Figures Verified By:	Check No.			Rema	ining Due:	



or the well system check shall be provided prior to the end of the fiscal year.

(Date) 7/16/24 (Phone) 94

Payment Date:

Check No.

(For OCWD Accounting Use Only)

Figures Verified By:

P.O. BOX 8300 FOUNTAIN VALLEY, CALIFORNIA 92728-8300 TELEPHONE: 714-378-3200

WATER PRODUCTION STATEMENT

For Period 01/01/2021 To 06/30/2021

Water Producing Facility No. 1	A. File statement with Orange County Water District. Keep the duplicate copy.								
	119-20-3-A 20070357-06		B. File this Water Production Statement on or before						
VERY IMPORTANT PLEASE R							e this date a 10% penalty ch	arge will be as	sessed.
	CEAD				ishment asse				
20493	ee ee	1	07/3	11/202	4 Interest ac	crues at 1%	per month or fraction there	of after that da	to.
NEWPORT BEACH GOLF COURS	3E				stmarked after				
ATTN: SEAN XUA						a considered delinquent. Ple	ase pay and f	le on time	
3100 IRVINE AVE.			07/31/2021 must under the law be considered delinquent. Please pay and file on time to avoid penalties. 10% penalty charge occurs 30 days after due date.						
NEWPORT BEACH, CA 92660				de form			ck or money order payable t		
Owner Well Name: NBGC-NB			OR	ANGE	COUNTY WA	TER DIST	RICT		
Code: 06S/10W-12L01		Meter ID 1	Mete	r ID 2		Meter ID 3	3		
	_	20070357-06					-		
(1) Water meter reading end of period		626132					4		
(2) Water meter reading beginning of	period	585260					-	RTANT!!!	
(3) Total units: Subtract item (2) from	(1)	40872			9400		You must compute the as		
ACF	0.001				-		shown in Items (6) & (8) b		
(Unit of Measurement)	(Mc	itiplier)					the total due as shown in	Item (9) no late	er than
4) Total an distance in large (2) about	numeroused in Assa Cost				40.9		07/3	1/2021	
 Total production in item (3) above 	expressed at Acre-reet		Ac. Ft.	to near	est 1/10th				
5) Additional water produced during (neriod NOT INCLUDED	IN				+			
WATER METER READINGS: (Explain			Ac. Ft.	to near	est 1/10th		PUMP TO WASTE		
			100000	D065 3		- 4			9,959.1
Total water produced: Add items ((4) and (5) —	4. 6	40.9	× _	\$243.50	= 5			5,550.
		Ac. Ft. to neares	it 1/10th						
CLASSIFICA	TION OF USE OF W	ATER							
) Amount of water in item (6) used for	or irrigation purposes:								
			Ac. Ft. to						
RRIGATION, as used herein, means to pricultural crops and for pasture grown	he act of first using wat in for commercial purpor	er to place it on lar ses.	nds by an	y mea	ns for the co	mmercial	I production of agricultur	al, horticultur	al or
) Amount of water in item (6) used for	or all purposes		40.9	×	\$243.50	R 5	\$		9,959.1
other than irrigation: Subtract item		Ac. Ft. to neares	t 1/10th						
9) TOTAL REPLENISHMENT ASSES		ints in Items (6) an	d (8)			5	s		19,918.3
		sure to sign the			statemen	t below))		-
			IFICATI						
I DECLARE, under the penalties of pe to the best of my knowledge and belie	erjury that this water pro-	duction statement, omplete statement	including	the st	atement mad	ie and the	e figures shown, has bee	n examined t	y me, and
Broducers Idelined as Cities Water	Districts and Golden	State Water Co.)	shall ann	ually o	calibrate the	well me	ter or follow the calibra	tion procedu	ire
applicable to the meter type as rec	commended by the respondence of the production. The Production of	ective meter man	ufacture to the Dis	r or Ai	merican Wa he calibrati	ter Work: on test re	s Association if none ex sults and maintenance	information	ze
		cer snen provide			rea warmer meter		California registered pro		200000000000000000000000000000000000000

(Phone) 949-812-868/ (Signature)

Payment Amount:

Remaining Due:

P.O. BOX 8300 FOUNTAIN VALLEY, CALIFORNIA 92728-8300 TELEPHONE: 714-378-3200

WATER PRODUCTION STATEMENT

For Period 07/01/2021 To 12/31/2021

County Water District Act as am	ch operator of a wended.	ater produ	cing facility within th	e Orange County	Water District, as	s required by Section 29 and 29,1 of the Orange
Vater Producing Facility No.	119-20-3-A			A. File statemen	t with Orange Count	y Water District. Keep the duplicate copy.
Vater Meter:	20070357-06		-	B. File this Water	er Production Statem	nent on or before
/ERY IMPORTANT PLEA	SE READ	XI PAGE		02/28/2022	If not filed on or befo	ore this date a 10% penalty charge will be assessed.
20493			1	C. Pay replenish	ment assessment or	n or before
NEWPORT BEACH GOLF C	OURSE			01/31/2022	Interest accrues at 1	% per month or fraction thereof after that date.
ATTN: SEAN XUA				D. Return postm	arked after	
3100 IRVINE AVE.				01/31/2022	must under the law b	be considered delinquent. Please pay and file on time
NEWPORT BEACH, CA 926	60				to avoid penalties. 1	0% penalty charge occurs 30 days after due date.
Owner Well Name: NBGC-N	IB		A HOLE	E. If this form is a ORANGE CO	mailed, enclosed che UNTY WATER DIST	eck or money order payable to: TRICT
Code: 06S/10V	V-12L01		Meter ID 1	Meter ID 2	Meter ID	3
		u.	20070357-06			
1) Water meter reading end of	period		690180			
2) Water meter reading beginn	ing of period		626132			IMPORTANT!!!
3) Total units: Subtract item (2) from (1)		64048	THE		You must compute the assessments due as
ACF		0.001		THE PERSON NAMED IN	Charles Allen	shown in Items (6) & (8) below. Be sure to pay

ACF	0.001		Shown in Reins (o) a (o) below. Do sale to p
(Unit of Measurement)	(Multiplier)		the total due as shown in Item (9) no later that
4) Total production in item (3) above ex	xpressed in Acre-Feet	64.0	01/31/2022
		Ac Et to nearest 1/10th	

5) Additional water produced during period NOT INCLUDED IN PUMP TO WASTE Ac. Ft. to nearest 1/10th WATER METER READINGS: (Explain fully on reverse side) \$253 50 6) Total water produced: Add items (4) and (5) 64.0

16.224.00

Ac. Ft. to nearest 1/10th CLASSIFICATION OF USE OF WATER

7) Amount of water in item (6) used for irrigation purposes:

Ac. Ft. to nearest 1/10th

RECATION as used herein, means the act of first using water to place it on lands by any means for the commercial production of agricultural, horticultural or

oricultural crops and for pasture grown for commercial purposes.			
3) Amount of water in item (6) used for all purposes	64.0 x \$253.50	= \$	16,224.00

other than irrigation: Subtract item (7) from (6) 3) TOTAL REPLENISHMENT ASSESSMENTS: Add \$ amounts in Items (6) and (8)

32,448.00

(Please be sure to sign the certification statement below)

CERTIFICATION

Ac. Ft. to nearest 1/10th

DECLARE, under the penalties of perjury that this water production statement, including the statement made and the figures shown, has been examined by me, and the best of my knowledge and belief is a true, correct and complete statement. roducers(defined as Cities, Water Districts and Golden State Water Co.) shall annually calibrate the well meter or follow the calibration procedure

pplicable to the meter type as recommended by the respective meter manufacturer or American Water Works Association if none exist, and utilize ualified personnel to perform the calibration. The Producer shall provide to the District the calibration test results and maintenance information. icluding the date of calibration and percent error, accompanied by a certification of test results signed by a California registered professional engineer r a certified calibration technician performing the calibration and affixed with the engineer's current registered engineer stamp or the calibration ichnician's certification identification, whatever is applicable. Alternatively, results from a well system check performed by Southern California Edison or ther similar contractor approved by the District can be submitted to verify that accurate pumping results are being reported. Calibration testing results r the well system check shall be provided prior to the end of the fiscal year.

(Date) 12/22	121	(Phone) 949-526-756	(Signature)	fire	×
or OCWD Accounting Use Only)	Payment Date:	Pa	yment Amount:	AND SALVING THE	
igures Verified By:	Check No.	F	Remaining Due:		
					7



OCWD FORM NO. 3-RA PERIOD REV. 11/21/95

P.O. BOX 8300 FOUNTAIN VALLEY, CALIFORNIA 92728-8300 TELEPHONE: 714-378-3200

WATER PRODUCTION STATEMENT

For Period 01/01/2022 To 06/30/2022

To be completed and filed by each County Water District Act as amen	h operator of a water produc	For Period 01/	01/2022 To 06/30/2022		
Water District Act as amer	nded.	cing facility within	the Orange County Water Dis	strict, as required by Sec	ction 29 and 29.1 of the Orange
roddellig Facility No.	119-20-3-A				
Water Meter:	20070357-06	T. F.	A. File statement with Orang	ge County Water District. K	eep the duplicate copy.
VERY IMPORTANT - PLEAS	E READ	No.	B. File this Water Production		
20493					penalty charge will be assessed.
NEWPORT BEACH GOLF CO	URSE		C. Pay replenishment assess	sment on or before	
ATTN: SEAN XUA			07/31/2022 Interest accru	ues at 1% per month or fra	ction thereof after that date.
3100 IRVINE AVE.			D. Return postmarked after		
NEWPORT BEACH, CA 92660			07/31/2022 must under the	he law be considered deline	quent. Please pay and file on time
Owner Well Name: NBGC-NB			to avoid pend	alties. 10% penalty charge	occurs 30 days after due date.
Code: 06S/10W-1	40104		 E. If this form is mailed, encloor ORANGE COUNTY WATE 	sed check or money order ER DISTRICT	payable to:
3046, 063/1044-1	12L01	Meter ID 1	11-1-10-0	ter ID 3	A STATE OF THE PARTY.
/4\ W-1		20070357-06			
(1) Water meter reading end of pe		734255			
(2) Water meter reading beginning	g of period	690180			
(3) Total units: Subtract item (2) fr	rom (1)				IMPORTANT!!!
ACF	0.001	44075		You must comput	e the assessments due as
(Unit of Measurement)		tiplier)) & (8) below. Be sure to pay
(4) Total production in item (3) abo		apater)		the total due as si	nown in Item (9) no later than
(0) 400	ove expressed in Acre-Feet		44.1		07/31/2022
(5) Additional water produced during	no period NOT INIQUIPER		Ac. Ft. to nearest 1/10th	AND LOCAL	
WATER METER READINGS: (Expl	Ing period NOT INCLUDED I	N .		•	
			Ac. Ft. to nearest 1/10th	PUMP TO WAS	TE TE
(6) Total water produced: Add item	ns (4) and (5)		44.1 x \$253.50	= \$	11,179.35
		Ac. Ft. to nearest	1/10th		
CLASSIFI	CATION OF USE OF WA	ATER			
(7) Amount of water in item (6) use	ed for irrigation purposes:				
			Ac. Ft. to nearest 1/10th		
IRRIGATION, as used herein, mear floricultural crops and for pasture gro	ns the act of first using water rown for commercial purpose	to place it on landes.	ds by any means for the comm	nercial production of agr	cultural, horticultural or
(8) Amount of water in item (6) used	d for all purposes		44.1 x \$253.50	=\$	11,179.35
other than irrigation: Subtract ite	em (7) from (6)	Ac. Ft. to nearest			11,179.35
(9) TOTAL REPLENISHMENT ASSI	ESSMENTS: Add \$ amoun	ts in Items (6) and	(8)	s	22,358.70
			certification statement be		22,356.70
	(1 10030 00 3			elowj	
DECLARE, under the penalties of	nerium that this water produ		FICATION	ad the farmer of the h	
to the best of my knowledge and bel	lief is a true, correct and con	nplete statement.	clouing the statement made a	illo tre ligures snown, n	as been examined by me, and
Producers(defined as Cities, Wate applicable to the meter type as requalified personnel to perform the including the date of calibration at or a certified calibration technician technician's certification identification in the result of the similar contractor approved or the well system check shall be (Date)	commended by the respect calibration. The Produce not precent error, accompan performing the calibratic ation, whatever is applicate by the District can be sub-	ctive meter manu r shall provide to anled by a certific on and affixed wi ble. Alternatively, emitted to verify t	facturer or American Water the District the calibration to the calibration to test results signed the engineer's current regresults from a well system that accurate pumping results.	Works Association if r test results and mainte by a California registe gistered engineer stan check performed by S	none exist, and utilize mance information, ored professional engineer up or the calibration outhern California Edison or
(Daie) 0/22/2		and the same of th		The second second second second	A STATE OF THE PARTY OF THE PAR
For OCWD Accounting Use Only) Figures Verified By:	Payment Date:Check No.		Payment An Remaining		



(For OCWD Accounting Use Only)

Figures Verified By:

Payment Date:

Check No.

ORANGE COUNTY WATER DISTRICT

P.O. BOX 8300 FOUNTAIN VALLEY, CALIFORNIA 92728-8300 TELEPHONE: 714-378-3200

WATER PRODUCTION STATEMENT

For Period 07/01/2022 To 12/31/2022 To be completed and filed by each operator of a water producing facility within the Orange County Water District, as required by Section 29 and 29.1 of the Orange County Water District Act as amended. Water Producing Facility No. 119-20-3-A A. File statement with Orange County Water District. Keep the duplicate copy. Water Meter: 20070357-06 B. File this Water Production Statement on or before VERY IMPORTANT -- PLEASE READ 02/28/2023 If not filed on or before this date a 10% penalty charge will be assessed. 20493 C. Pay replenishment assessment on or before NEWPORT BEACH GOLF COURSE 01/31/2023 Interest accrues at 1% per month or fraction thereof after that date. ATTN: SEAN XUA D. Return postmarked after 3100 IRVINE AVE 01/31/2023 must under the law be considered delinquent. Please pay and file on time NEWPORT BEACH, CA 92660 to avoid penalties. 10% penalty charge occurs 30 days after due date. Owner Well Name: NBGC-NB E. If this form is mailed, enclosed check or money order payable to: ORANGE COUNTY WATER DISTRICT Code: 06S/10W-12L01 Meter ID 1 Meter ID 2 Meter ID 3 20070357-06 (1) Water meter reading end of period 801416 (2) Water meter reading beginning of period 734255 IMPORTANT!!! (3) Total units: Subtract item (2) from (1) 67161 You must compute the assessments due as ACF 0.001 shown in Items (6) & (8) below. Be sure to pay (Unit of Measurement) (Multiplier) the total due as shown in Item (9) no later than (4) Total production in item (3) above expressed in Acre-Feet 67.2 01/31/2023 Ac. Ft. to nearest 1/10th (5) Additional water produced during period NOT INCLUDED IN WATER METER READINGS: (Explain fully on reverse side) Ac. Ft. to nearest 1/10th PUMP TO WASTE (6) Total water produced: Add items (4) and (5) 672 \$279 00 18,748,80 Ac. Ft. to nearest 1/10th CLASSIFICATION OF USE OF WATER (7) Amount of water in item (6) used for irrigation purposes: Ac. Ft. to nearest 1/10th IRRIGATION, as used herein, means the act of first using water to place it on lands by any means for the commercial production of agricultural, horticultural or floricultural crops and for pasture grown for commercial purposes. (8) Amount of water in item (6) used for all purposes 67.2 \$279.00 18,748.80 other than irrigation: Subtract item (7) from (6) (9) TOTAL REPLENISHMENT ASSESSMENTS: Add \$ amounts in Items (6) and (8) 37,497,60 (Please be sure to sign the certification statement below) CERTIFICATION I DECLARE, under the penalties of perjury that this water production statement, including the statement made and the figures shown, has been examined by me, and to the best of my knowledge and belief is a true, correct and complete statement. Producers(defined as Cities, Water Districts and Golden State Water Co.) shall annually calibrate the well meter or follow the calibration procedure applicable to the meter type as recommended by the respective meter manufacturer or American Water Works Association if none exist, and utilize qualified personnel to perform the calibration. The Producer shall provide to the District the calibration test results and maintenance information, including the date of calibration and percent error, accompanied by a certification of test results signed by a California registered professional engineer or a certified calibration technician performing the calibration and affixed with the engineer's current registered engineer stamp or the calibration technician's certification identification, whatever is applicable. Alternatively, results from a well system check performed by Southern California Edison or other similar contractor approved by the District can be submitted to verify that accurate pumping results are being reported. Calibration testing results or the well system check shall be provided prior to the end of the fiscal year. (Phone) 949-526-956) (Date) 1/24/2023 (Signature)

Payment Amount:

Remaining Due:



P.O. BOX 8300 FOUNTAIN VALLEY, CALIFORNIA 92728-8300 TELEPHONE: 714-378-3200

WATER PRODUCTION STATEMENT

For Period 01/01/2023 To 06/30/2023

To be completed and filed by each operator of a water producing facility within the Orange County Water District, as required by Section 29 and 29.1 of the Orange County Water District Act as amended.

Water Producing Facility No.	119-20-3-A		A. File sta	tement with Orar	nge County	Water District. Keep the duplicate copy.
Water Meter:	20070357-06		B. File th	s Water Producti	ion Stateme	ent on or before
VERY IMPORTANT PLEA	SE READ		08/31/2	023 If not filed	on or before	e this date a 10% penalty charge will be assessed.
20493			C. Pay rep	olenishment asse	essment on o	or before
NEWPORT BEACH GOLF C	OURSE		07/31/2	023 Interest ac	crues at 1%	per month or fraction thereof after that date.
ATTN: SEAN XUA			D. Return	postmarked after	r	
3100 IRVINE AVE.			07/31/2	023 must unde	r the law be	considered delinquent. Please pay and file on time
NEWPORT BEACH, CA 9266	30			to avoid p	enalties. 10°	% penalty charge occurs 30 days after due date.
Owner Well Name: NBGC-N	В			orm is mailed, en GE COUNTY WA		ck or money order payable to:
Code: 06S/10W	/-12L01	Meter ID 1	Meter ID		Meter ID 3	
		20070357-06				
(1) Water meter reading end of	period	836502				
(2) Water meter reading beginni	ng of period	801416				IMPORTANT!!!
(3) Total units: Subtract item (2)	_	35086		_		You must compute the assessments due as
ACF	0.001					shown in Items (6) & (8) below. Be sure to pay
(Unit of Measurement)	_	ultiplier)		-		the total due as shown in Item (9) no later than
(4) Total production in item (3) a	hove expressed in Acre-Fee	•		35.1		07/31/2023
(1) Total production writem (c) a	boro expressed in rision con	7	Ac Ft to n	earest 1/10th		07/31/2023
(5) Additional water produced du	uring period NOT INCLUDED	IN				
WATER METER READINGS: (E.			Ac Et to n	earest 1/10th	•	PUMP TO WASTE
(6) Total water produced: Add it	ems (4) and (5)	Ac. Ft. to neares	35.1 x	\$279.00	= \$	9,792.90
			17 1001			RECEIVED
CLASSI	FICATION OF USE OF W	VATER				JUL 1 0 2023
(7) Amount of water in item (6) u	ised for irrigation purposes:					JUL 10 2023
IRRIGATION, as used herein, me floricultural crops and for pasture			Ac. Ft. to ne		ommercial	CCOUNTING DEPT production of agricultural, horticultural or
(8) Amount of water in item (6) u	used for all purposes		35.1 x	\$279.00	= \$	9,792.90
other than irrigation: Subtrac	t item (7) from (6)	Ac. Ft. to neares	st 1/10th			
(9) TOTAL REPLENISHMENT A	SSESSMENTS: Add \$ amou	unts in Items (6) an	d (8)		\$	19,585.80
	(Please be	sure to sign the	ecertificati	on statemen	nt below)	
		CERT	IFICATION			
I DECLARE, under the penalties to the best of my knowledge and				statement ma	de and the	e figures shown, has been examined by me, and
applicable to the meter type as qualified personnel to perform including the date of calibratio or a certified calibration technician's certification ident	s recommended by the resp the calibration. The Produ- on and percent error, accom- ician performing the calibra ification, whatever is applicated by the District can be s	pective meter man cer shall provide to apanied by a certif ation and affixed v cable. Alternativel submitted to verify	ufacturer or to the Distri fication of to vith the eng y, results fro that accura	American Wa ct the calibrati est results sig ineer's curren om a well syst ate pumping re	ater Works ion test re ned by a (it registere tem check	ter or follow the calibration procedure is Association if none exist, and utilize esults and maintenance information, California registered professional engineer ed engineer stamp or the calibration or performed by Southern California Edison or being reported. Calibration testing results
(For OCWD Accounting Use Onl	y) Payment Date:			Paymer	nt Amount:	
Figures Verified By:	Check No.			_	ining Due:	



Figures Verified By:

Check No.

ORANGE COUNTY WATER DISTRICT

P.O. BOX 8300 FOUNTAIN VALLEY, CALIFORNIA 92728-8300 TELEPHONE: 714-378-3200

RECEIVED

REV. 11/21/95

WATER PRODUCTION STATEMENT

JAN 9 2024

For Period 07/01/2023 To 12/3.1/2023

ACCOUNTING DEPT

To be completed and filed by ear County Water District Act as amo		icing facility within t	he Orang	ge Cou	inty Water	District, as	required by Section 29 ar	nd 29.1 of the Orange
Water Producing Facility No.	119-20-3-A		A. File	e state	men, with O	range Count	y Water District. Keep the du	plicate copy.
Water Meter:	20070357-06		B. Fi	le this	Water Produ	ction Statem	nent on or before	
VERY IMPORTANT PLEA	SE READ		02/29/2024 If no ' filed on or before this date a 10% penalty charge will be assessed.					
20493			C. Pa	y reple	enishment as	sessment or	n or before	
NEWPORT BEACH GOLF C	OURSE		01/3	31/202	24 Intere st	accrues at 1	% per month or fraction thereo	of after that date.
ATTN: SEAN XUA			D. Re	turn po	ostmarked at	ter		
3100 IRVINE AVE.			01/3	31/20	24 must u n	der the law b	be considered delinquent. Ple	ase pay and file on time
NEWPORT BEACH, CA 926	60				to avoi	penalties, 1	10% penalty charge occurs 30	days after due date.
Owner Well Name: NBGC-N	IB				m is maile d, E COUNT Y V		eck or money order payable to TRICT	Σ
Code: 06S/10V	V-12L01	Meter ID 1	Mete	er ID 2		Meter ID	3	
		20070357-06						
(1) Water meter reading end of	period	905168						
(2) Water meter reading beginn	ing of period	836502					IMPOF	RTANT!!!
(3) Total units: Subtract item (2) from (1)	68666					You must compute the ass	essments due as
ACF	0.001						shown in Items (6) & (8) be	elow. Be sure to pay
(Unit of Measurement)	(1	Multiplier)					the total due as shown in I	tem (9) no later than
(4) Total production in item (3) a	above expressed in Acre-Fe	et			68.7		01/31	1/2024
			Ac. Ft.	to nea	arest 1/10th			
(5) Additional water produced d	uring period NOT INCLUDE	D IN				+		
WATER METER READINGS: (E	Explain fully on reverse side)		Ac. Ft.	to nea	est 1/10th		PUMP TO WASTE	
(6) Total water produced: Add	items (4) and (5)		68.7	x	\$312.00	=	\$	21,434.40
		Ac. Ft. to neares	s! 1/10th					
CLASS	IFICATION OF USE OF	WATER						
(7) Amount of water in item (6)	used for irrigation nurnoses:							
(1)	adda for infiguration purpodes.		Ac. Ft. 1	to near	rest 1/1 Oth			
IRRIGATION, as used herein, m			nds by ar	ny me	ans for the	commercia	al production of agricultura	l, horticultural or
(8) Amount of water in item (6)	used for all purposes		68.7	x	\$31 2.00	=	\$	21,434.40
other than irrigation: Subtract	ct item (7) from (6)	Ac. Ft. to neares	st 1/10th					
(9) TOTAL REPLENISHMENT A	ASSESSMENTS: Add \$ am	ounts in Items (6) ar	nd (8)				\$	42,868.80
	(Please b	e sure to sign the	e certifi	catio	n st.atem	ent below	v)	()
I DECLARE, under the penalties		oduction statement,		20000	statement n	nade and th	he figures shown, has bee	n examined by me, and
Producers(defined as Cities, Vapplicable to the meter type as qualified personnel to perform including the date of calibration a certified calibration technician's certification iden other similar contractor approor the well system check shall (Date)	Water Districts and Golden is recommended by the rest in the calibration. The Product ion and percent error, accondician performing the calib tification, whatever is apply ioved by the District can be	state Water Co.) spective meter manucer shall provide impanied by a certification and affixed licable. Alternative submitted to verification	shall and oufacture to the Di fication with the ly, result of that ac	er or A istrict of tes engin	Am'erican \ the' calibr tres ults s leer's curr n a we'll sy e pumping	Vater Wor ation test igned by a ent registe stem chec results ar	ks Association if none e results and maintenance a California registered pr ered engineer stamp or the ck performed by Souther	xist, and utilize e information, ofessional engineer he calibration rn California Edison or ration testing results
(For OCWD Accounting Use On	ly) Payment Date:				Paym	ent Amour	nt:	

Remaining Due:

Appendix 6

City of Newport Beach Fire Flow Guidelines



CITY OF NEWPORT BEACH

COMMUNITY DEVELOPMENT DEPARTMENT

LIFE SAFETY SERVICES

GUIDELINES AND STANDARDS

GUIDELINE B.01 - Determination of Required Fire Flow

B.01.1 PURPOSE

The purpose of this guideline is to provide assistance to architects, builders and engineers in determining the adequate fire flow requirements for buildings and complexes. This guideline is in accordance with the California Fire Code, Appendix B and Appendix C.

B.01.2 SCOPE

All buildings built within the City of Newport Beach are required to comply with the California Fire Code Appendix B, Fire Flow Requirements for Buildings and Appendix C, Fire Hydrant Locations and Distribution.

B.01.3 PROCEDURE

Determine the total square footage Line 1	
Determine the type of Construction Line 2	
Using Table B105.1, determine the (If the building has full sprinkler system 3	stem, deduct 50%)
Using Table C105.1, use the dete number of fire hydrants required a Line 4f	•

Existing fire hydrants on public streets within 500 of the building are allowed to be considered as available. The aggregate flow from existing hydrants, at no less than 20 pounds residual pressure, may be credited toward the total flow required. Existing hydrants on adjacent property may not be considered unless the hydrant and main are owned by a public water company or public utility and the road serving those hydrants is of appropriate construction and width. An easement for the roadway must be recorded.

New hydrants shall provide a minimum flow of 1250 gpm at 20 pounds residual pressure.

- 1. The fire sprinkler demand is permitted to be included within this value as long as the sprinkler demand does not exceed the minimum required fire flow.
- 2. Thee minimum fire flow shall not be less than 1500 gpm.

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

	FIRE-FLOW	FIRE-FLOW (gallons per minute) ^b	FLOW DURATION (hours)			
Type IA and IB ^a	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					(hours)
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	
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	2
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	2
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	
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	2
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	3
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
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	4
_	_	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	

TABLE C105.1 NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS ^{a, b, c} (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT®
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more ^e	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.

b. Where streets are provided with median dividers which cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.

c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.

d. Reduce by 50 feet for dead-end streets or roads.

e. One hydrant for each 1,000 gallons per minute or fraction thereof.

Appendix B: Fire-Flow Requirements for Buildings

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

General Comments

The availability of water is essential for fire-fighting operations. The amount of water required to fight a fire depends on many things, including the type of construction, the location of the fire, the contents of the building, response time and the capabilities of the fire department. Fires will increase in size very quickly from the time of ignition to the arrival of the fire department. Couple these unknowns with the fact that the actual water available varies significantly from one jurisdiction to another and, in many cases, from one location to another in the same jurisdiction, and it is easy to see that determining the necessary water supply is not an exact science. The fire-flow rates given in this appendix are a simplified version of the method previously published by the Insurance Services Office (ISO), Guide for Determination of Required Fire Flow (ISO 1972). This particular method took several factors into account that included construction type, size and location of the building. The actual equation used with the ISO guide was as follows:

 $F = 18 C(A)^{0.5}$

where:

F =Required fire flow (gpm).

C = Coefficient related to the type of construction.

A = Total floor area (including all stories but excluding the basement).

Type of Construction	Coefficient
Wood-frame construction	1.5
For ordinary construction	1.0
Noncombustible construction	0.8
Fire-resistive construction	0.6

This equation came with various increases and decreases that will be discussed throughout this commentary. The simplified version of this method is included here for two reasons. First, the guidelines were difficult to obtain; and second, the methodology was considered overly complex for the degree of accuracy it

Fire-flow determination is not an exact science. Several methods beyond the one presented by ISO have been available over the years and none is able to provide a correct answer for all situations. Fires grow quickly during their initial stages and the amount of water necessary increases as the fire grows. The larger the fire, the larger the water supply necessary. This is why sprinklers require, comparably, much less water as they can attack the fire at a very early stage. For these reasons, this appendix does not provide a single answer to solve the problem of determining the amount of fire flow required. It is a decision that must involve many factors.

This appendix was developed independent of the sprinkler standards NFPA 13, 13R and 13D. These standards sometimes have requirements for inside and outside hose streams that are independent of the fireflow requirements.

Purpose

This appendix provides a tool for jurisdictions to establish a policy for fire-flow requirements. The determination of required fire flow is not an exact science, but having some level of information provides a consistent way of choosing the appropriate fire flow for buildings throughout a jurisdiction.

The primary tool used in this appendix is Table B105.1, which presents fire flows based on construction type and building area. This table is based on the correlation of the ISO method and the construction types used in the International Building Code® (IBC®). Because of the wide variations in water availability and the application of fire flow in different communities, these provisions are presented in this appendix.

The important message sent by this appendix is that some sort of policy should be in place to provide requirements that are consistent within a jurisdiction. Fire-flow requirements have the tendency to be somewhat controversial for the simple reasons that the facilities needed to provide them can be very costly to construct and install and appear to the building owners, in many cases, to yield little benefit.

2015 INTERNATIONAL FIRE CODE® COMMENTARY

B104.2 Area separation. Portions of buildings which are separated by *fire walls* without openings, constructed in accordance with the *International Building Code*, are allowed to be considered as separate fire-flow calculation areas.

❖ To reduce the amount of fire flow required, fire walls without openings can be constructed to create separate fire-flow calculation areas. Fire barriers or fire partitions cannot be used to create separate fire-flow calculation areas. It should be noted that IBC Section 706 regulates the construction of fire walls and would generally allow properly protected openings in them (see IBC Section 706.8). However, consistent with Section 102.10 of the code, this section would supercede the IBC fire wall opening provisions since this section is a specific prohibition on any openings in fire walls that are used to reduce the fire-flow calculation area.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

❖ Type IA and IB construction are essentially noncombustible and have the tendency to limit fire spread within the buildings more so than other construction types. Therefore, the fire-flow calculation area needs to include only the three largest successive floors. Successive floors are specified because of the logical progression of a fire. The concept of three largest successive floors appears to come from the ISO guide. These guidelines allowed the fire-flow calculation area for fire-resistive construction to only include six successive floors if vertical openings were not protected, and three successive floors if the vertical openings were protected. Taking the three largest floors when they are separated from one another may be overly conservative.

The exception to this section allows open parking garages to count only the largest floor for the fire-flow calculation area. This is probably related to the facts that fires in such facilities tend to be limited to one or two cars and that such facilities have large openings through which the hot gases and smoke from a fire can dissipate quickly, limiting the intensity of the fire.

SECTION B105 FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings, Group R-3 and R-4 buildings and townhouses. The minimum fire-flow and flow duration requirements for one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses shall be as specified in Tables B105.1(1) and B105.1(2).

❖ This section establishes fire-flow requirements for one- and two-family dwellings, in two distinct categories. The first category is one- and two-family dwellings, Group R3 and R4 buildings and townhouses through reference to Tables B105.1(1) and B105.1(2). Table B105.1(1) essentially addresses two different area ranges and whether automatic sprinkler systems are installed. Where the area is 3,600 square feet or greater, reference is made to Table B105.1(2). It should be noted that automatic sprinkler systems shall comply with either NFPA 13D or IRC Section 2904. Buildings addressed by Section B105.2 allow a larger decrease in fire flow but require an NFPA 13 or NFPA 13R system.

TABLE B105.1(1). See below.

❖ This table sets out the requirements for one- and two-family dwellings, Group R3 and R4 buildings and townhouses. The criteria for fire flow is based on two major factors. The first is the area of the building. The table addresses buildings up to 3,600 square feet and greater than 3,600 square feet. The second is whether a sprinkler system is provided. The type of sprinkler system is either that required by NFPA 13D or IRC P2904. The assumption would be that more restrictive systems, such as those required by NFPA13R or 13, would also be permitted.

Essentially, for less than 3,600 square feet, the fire flow is reduced by 50 percent. This is consistent with exceptions present in past editions of the code. Once 3,600 square feet has been reached, compliance with Table B105.1(2) is required. Note that a 50-percent reduction is allowed by Table B105.1(2) for these buildings.

The original ISO guide provided a simplified approach for one- and two-family dwellings. That approach stated that fire flows should be based on a limitation of two stories and a relationship to proximity of exposures. The fire-flow requirements based on

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)			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 International Fire Code or Section P2904 of the International Residential Code	500	1/2
3,601 and greater	Section 903.3.1.3 of the International Fire Code or Section P2904 of the International Residential Code	¹ / ₂ value in Table B105.1(2)	1

For SI: 1 square foot = 0.0929 m^2 , 1 gallon per minute = 3.785 L/m.

proximity to exposures in the ISO guide were as follows:

EXPOSURE DISTANCE (ft)	FIRE-FLOW REQUIREMENT (gpm)	
Over 100	500	
31-100	750-1000	
11-30	1000-1500	
10 or less	1500-2000	

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

This appendix uses 1,000 gpm (3785 L/min), which would be equivalent to a 30-foot (9144 mm) distance from exposures. This was taken as an average to provide a reasonable number for a majority of one-and two-family dwellings. Also, as discussed in the beginning of this appendix, based on the amount of variability involved with fighting fires, taking an average and applying it to all one- and two-family dwellings may be the most reasonable approach.

This appendix also does not use the two-story limitation but, rather, uses an area limitation of 3,600 square feet (345 m²) for the 1,000-gpm (3785 L/min) requirement. This is a more realistic approach because the ISO guide probably did not anticipate the larger floor area of today's houses and the large number of townhouses.

The table recognizes the efficacy of automatic sprinkler systems in reducing the amount of water needed to suppress fires and allows a reduction in fire flow of 50 percent where sprinklers are installed. This allowance for sprinklers does not amount to a requirement that a sprinkler system be installed. Rather, it allows a design alternative to be utilized in the event that there is insufficient water available to meet the required fire flow for a building established by this appendix. Table B105.2 allows a similar reduction for all other types of buildings.

A review of the original ISO guide reveals that there was no reduction for sprinklers in one- and two-family dwellings. However, in 1972 sprinklers were extremely uncommon within homes, and since that time sprinkler technology has changed dramatically. Section B105.2 contains more discussion on the application of this concept of reductions for sprinklers. Generally, the reduction is intended to encourage installation of an automatic sprinkler system because it is easier to control a fire that is attacked during the incipient stages.

TABLE B105.1(2). See page B-6.

❖ Table B105.1(2) establishes the fire-flow and duration requirements based on the fire-flow calculation area, as defined by the definition in this appendix and Section B103, and the construction types defined in the IBC. As the construction type becomes more combustible, the fire-flow requirements increase. Likewise, as the area of the building increases, the fireflow requirements increase. The last column also specifies a minimum duration of fire flow. The duration of fire flow varies from a minimum of 2 hours to 4 hours. Flow duration may be an issue that each jurisdiction may need to consider when assessing the capabilities of the department, the hazards presented and the availability of water supply (see commentary, Section B105.1).

Applying this table, for example, a 50,000-square-foot (4546 m²) Type IV construction building would require a fire flow of 4,000 gpm (15 140 L/min) with a duration of 4 hours. If the building was sprinklered in accordance with NFPA 13, the required fire flow would only be 25 percent or 1,000 gpm (5678 L/min).

This table does not address use and occupancy classifications. A Type IA construction building housing a Group A occupancy would be treated the same as a Type IA construction building housing a Group H or F occupancy. Again, this table was formed based on the approaches presented by the ISO guide, which focus on construction types.

A common question when applying this table is how to deal with a building that incorporates multiple construction types. Such scenarios would be better addressed through a percentage approach. For example, in a building that has two construction types, Types IA and VA, having areas of 25,000 square feet (2323 m²) and 10,000 square feet (929 m²), respectively, the fire flow would be calculated as follows:

Total building area

25,000 square feet (Type IA) + 10,000 square feet

 $(Type VA) = 35,000 \text{ square feet } (3252 \text{ m}^2)$

Fire flow per construction type

Type IA at 35,000 square feet = 2,000 gpm (7370 L/min)

Type VA at 35,000 square feet = 3,250 gpm
(12 112 L/min)

Percentage of building

 $IA = 25,000/35,000 \times 100 = 71.4$ percent

VA = 10,000/35,000 × 100 = 28.6 percent

Therefore

0.714 (2,000 gpm) + 0.286 (3,250 gpm) = 2,357.5 = Approximately 2,350 gpm (8894 L/min)

B105.2 Buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses. The minimum fire-flow and flow duration for buildings other than one- and two-family *dwellings*, Group R-3 and R-4 buildings and townhouses shall be as specified in Tables B105.2 and B105.1(2).

❖ This section refers all buildings that are not one- and two-family dwellings to Tables B105.1(2) and B105.2 for the minimum fire-flow and duration requirements. Table B105.1(2) provides the fire flow and Table B105.2 provides the reductions allowed for having either an NFPA 13 or NFPA 13R automatic sprinkler system. In such buildings, the reduction is 75 percent versus the 50-percent reduction allowed for one- and two-family dwellings in Table B105.1(1).

The tabular fire flows, based on the 1972 ISO

guide, are extremely high and it is doubtful that many water supply systems and fire departments can develop them. Also, it should be noted that the current ISO guide on this topic for sprinklered buildings requires providing only the calculated sprinkler demand plus hose stream allowances, calling the continued validity of this appendix into question. The updated ISO publication, Guide for the Determination of Needed Fire Flows, as with its predecessor, is a tool for the development of fire insurance ratings and is not intended to be used for legislating an individual sprinklered building's fire flow. That document states, "ISO does not determine a needed fire flow for buildings rated and coded by ISO as protected by an automatic sprinkler system meeting applicable National Fire Protection Association standards."

The allowance for buildings equipped with an automatic sprinkler system is intended to encourage the

use of sprinklers. It does not link to any other portions of the code or the IBC in terms of height and area requirements and limitations. Therefore, it can be used in addition to any trade-offs for sprinklers. Keep in mind that as the area of the building increases so do the fire-flow requirements. Therefore, even though a reduction may be given to a building that has already increased its area based on sprinklers, the overall fire flow will be larger because of this area increase.

The original ISO guide allowed only a 25-percent reduction for sprinklers. As mentioned in Section B105.1, sprinkler technology has changed dramatically since the guidelines were developed in the early 1970s. Also, the ISO guide allowed reduction in fire flow for buildings with light fire loads that this appendix does not.

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

FIRE-FLOW CALCULATION AREA (square feet)				FIRE-FLOW	FLOW DURATION	
Type IA and IB ^a	Type IIA and IIIA	Type IV and V-A ^a	Type IIB and IIIB*	Type V-B ^a	(gallons per minute)b	(hours)
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	
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	2
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	
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	3
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	3
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
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	4
	_	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.

TABLE 105.2. See below.

❖ This table provides allowances for reduced fire flow based on the installation of an automatic sprinkler system. More specifically, the fire flow obtained from Table B105.1(2) can be reduced to 25 percent where an NFPA 13 or NFPA 13R system is installed. The only major difference in the allowance given for both sprinkler systems is the minimum flow permitted. NFPA 13 systems can have a fire flow as low as 1,000 gpm, whereas an NFPA 13R system will allow a reduction to a minimum of 1,500 gpm. This is related to the relative performance of the type of sprinkler system. More credit was deemed necessary for NFPA 13 systems. Note with the reductions in this table and also Table B105.1(1) for one- and two-family dwellings, Group R3 and R4 Buildings and townhouses that there is no specific approval required by the fire official to apply these reductions. In the past, this approach has led to confusion as to how to differentiate situations where such an allowance was appropriate and where a lesser reduction was necessary.

B105.3 Water supply for buildings equipped with an automatic sprinkler system. For buildings equipped with an approved automatic sprinkler system, the water supply shall be capable of providing the greater of:

- 1. The *automatic sprinkler system* demand, including hose stream allowance.
- 2. The required fire-flow.
- ❖ This section clarifies that the fire-flow requirements are not in addition to the sprinkler demand. What is required is determining which needs a larger water supply. The greater of the sprinkler demand or the demand developed in accordance with Appendix B will be the required fire flow.

SECTION B106 REFERENCED STANDARDS

ICC	IBC15	International Building Code	B104.2
ICC	IBC15	International Building Code	B104.2

ICC IFC—15 International Fire Code Tables
B105.1(1) and
B105.2

ICC IWUIC—15 International Wildland-Urban Interface Code B103.3 ICC IRC—15 International Residential Table Code B105.1(1)

NFPA 1142—12 Standard on Water Supplies for Suburban and Rural Fire B103.3 Fighting

Bibliography

The following resource materials were used in the preparation of the commentary for this appendix of the code

Davis, L. "Rural Fire Fighting Operations." *Fire Service Information*. Iowa State University, February 1984.

Fire Service Hydraulics and Water Supply, 1st ed. Stillwater, OK: International Fire Service Training Association Fire Protection Publications, 2005.

Guide for Determination of Needed Fire Flow. Jersey City, NJ: Insurance Services Office, 2005.

Guide for Determination of Required Fire Flow. New York: Insurance Services Office, 1972.

IFCI, *UFC Code Applications Manual*. Whittier, CA: International Fire Code Institute, 1998.

NFPA 291-10, Fire Flow Testing and Marking of Hydrants. Quincy, MA: National Fire Protection Association, 2010.

NFPA 1141-08, Fire Protection Infrastructure for Land Development in Suburban and Rural Areas. Quincy, MA: National Fire Protection Association, 2008.

NFPA 1142-12, Water Supplies for Suburban and Rural Fire Fighting. Quincy, MA: National Fire Protection Association, 2011.

Smith, P.D. "What Are the Real Fire Flow Requirements?" Fire Journal, 1975.

Wenzel, L.J. "Water Supply Requirements for Public Supply Systems," Section 10, Chapter 4. NFPA Fire Protection Handbook, 19th ed. Quincy, MA: National Fire Protection Association, 2003.

TABLE B105.2 REQUIRED FIRE-FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES

1110 1111111111			
AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)	
No outometic enrinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)	
Section 002 3 1 1 of the International Fire Code	25% of the value in Table B105.1(2) ^a	Duration in Table B105.1(2) at the reduced flow rate	
Section 903.3.1.2 of the International Fire Code	25% of the value in Table B105.1(2) ^b	Duration in Table B105.1(2) at the reduced flow rate	

For SI: 1 gallon per minute = 3.785 L/m.

2015 INTERNATIONAL FIRE CODE® COMMENTARY

a. Types of construction are based on the International Building Code.

b. Measured at 20 psi residual pressure.

a. The reduced fire-flow shall be not less than 1,000 gallons per minute.

b. The reduced fire-flow shall be not less than 1,500 gallons per minute.

Appendix 7

Fire Flow Calculations



CITY OF NEWPORT BEACH

COMMUNITY DEVELOPMENT DEPARTMENT

LIFE SAFETY SERVICES

GUIDELINES AND STANDARDS

GUIDELINE B.01 - Determination of Required Fire Flow

Snug Harbor

Note: Two (2) buildings are proposed, both Type VA, and both will be fully-sprinklered. Since both buildings are same Construction Type, only the larger building was evaluated.

B.01.1 PURPOSE

The purpose of this guideline is to provide assistance to architects, builders and engineers in determining the adequate fire flow requirements for buildings and complexes. This guideline is in accordance with the California Fire Code, Appendix B and Appendix C.

B.01.2 SCOPE

All buildings built within the City of Newport Beach are required to comply with the California Fire Code Appendix B, Fire Flow Requirements for Buildings and Appendix C, Fire Hydrant Locations and Distribution.

B.01.3 PROCEDURE

Determine the total square footage of <u>all</u> floor levels: Line 168,478sq. ft. Clubhouse Building
Line 1sq. ft. Clubhouse Building
Determine the type of Construction: Line 2VA
Using Table B105.1, determine the fire flow. (If the building has full sprinkler system, deduct 50%) Line 3 gpm. 1, 2
Using Table C105.1, use the determined fire flow from line 3 to determine the required number of fire hydrants required and their spacing: Line 43Hydrants450ft. apart.

Existing fire hydrants on public streets within 500 of the building are allowed to be considered as available. The aggregate flow from existing hydrants, at no less than 20 pounds residual pressure, may be credited toward the total flow required. Existing hydrants on adjacent property may not be considered unless the hydrant and main are owned by a public water company or public utility and the road serving those hydrants is of appropriate construction and width. An easement for the roadway must be recorded.

B.01- Determination of Required Fire Flow Pages 1 of 3 Revised: 03-04-08, 04-27-16, 07-13-16



New hydrants shall provide a minimum flow of 1250 gpm at 20 pounds residual pressure.

- The fire sprinkler demand is permitted to be included within this value as long as 1. the sprinkler demand does not exceed the minimum required fire flow.
- 2. Thee minimum fire flow shall not be less than 1500 gpm.

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BU FIRE-FLOW CALCULATION AREA (square feet)				FLOW DURATION		
Type IA and IB ^a	Type IIA and IIIA ^a	Type IV and V-Aª	Type IIB and IIIB ^a	Type V-B ^a	FIRE-FLOW (gallons per minute) ^b	FLOW DURATION (hours)
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	
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	2
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	2
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	2,375
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	gpm
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	7 3
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	
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	4
_	_	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	



TABLE C105.1 NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS ^{a, b, c} (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT [®]
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more ^e	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

- a. Reduce by 100 feet for dead-end streets or roads.
- b. Where streets are provided with median dividers which cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.
- c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
- d. Reduce by 50 feet for dead-end streets or roads.
- e. One hydrant for each 1,000 gallons per minute or fraction thereof.