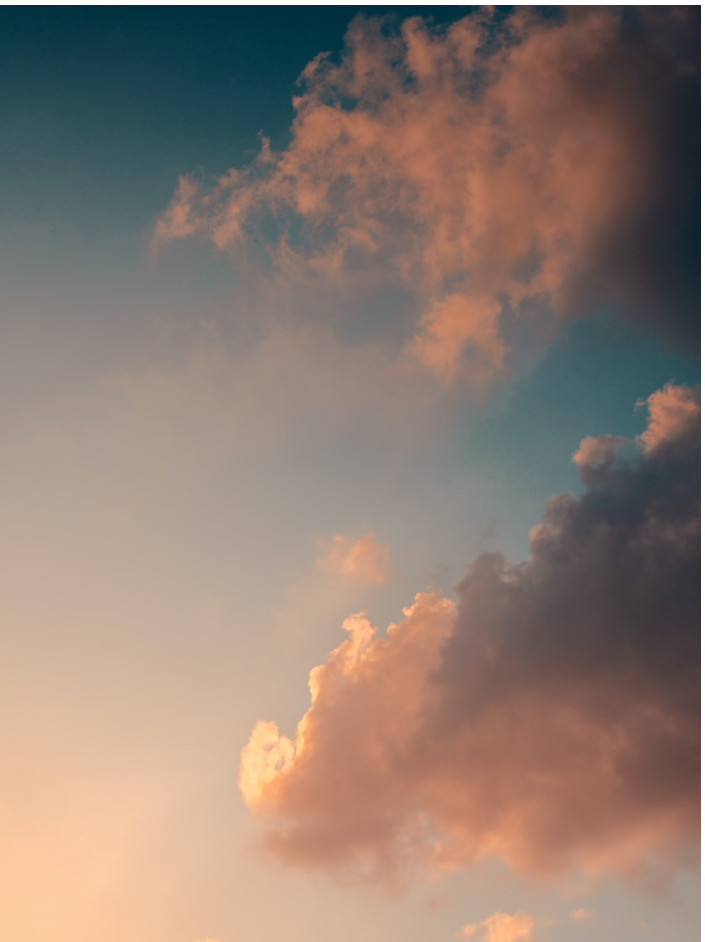


FUSCOE ENGINEERING

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 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.

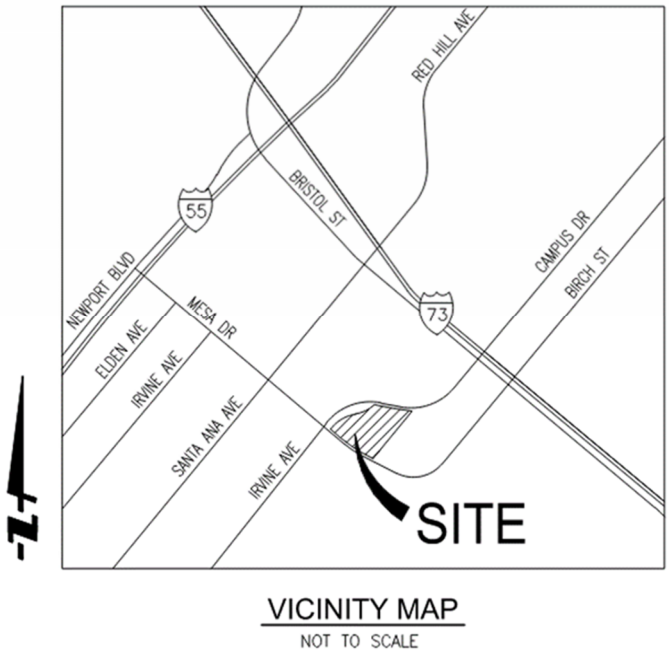


Figure 1

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:
  - Static Pressure: 117 psi
  - Residual Pressure: 110 psi @ 1,100 gpm
  - 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.

Table 1.1 – Snug Harbor Proposed Building Areas

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

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.

Table 2.1 – Snug Harbor Proposed Clubhouse & Accommodations Water Demand

Proposed Clubhouse and Accommodations	Amount		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 Pools and Spas *(SF)*	3	Pools	* Proration of the lagoons water usage based on surface areas		931	0.0009	1.04
	1	Spa					
				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)*	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

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

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.

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), Outside Showers, Pools & Spa	• 68,478 SF Clubhouse • 20 Keys • 738 SF Restroom Facility • 9 Showers • 3 Pools and 1 Spa	16,730	18.73
Total Proposed Domestic Water Demand		**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.0.1 – 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

SNUG HARBOR
NEWPORT BEACH, CA 92660

SITE DEVELOPMENT REVIEW

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

A0.0
COVER

12/23/2024

PROJECT SUMMARY

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

FUSCOE ENGINEERING, INC.
15535 SAND CANYON AVE
IRVINE, CA 92618
CONTACT: GREG ATTARD
PHONE: 949.474.1960

LANDSCAPE

CONCEPTUAL DESIGN + PLANNING COMPANY
1675 SCENIC AVENUE, SUITE 200
COSTA MESA, CA 92626
CONTACT: JENNIFER FREDERICK
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
APN: 119 200 41
ZONE: SP-7 (OSR)
DESIGNATION: 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).

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

HEIGHT

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

HEIGHT PROPOSED: 50' - 0" (CLUBHOUSE - MEASURED FROM ESTABLISHMENT OF GRADE)
40' - 0" (ATHLETE ACCOMMODATIONS - MEASURED FROM ESTABLISHMENT OF GRADE)

SETBACKS

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

PROPOSED: 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

NOTE:

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

GENERAL PLAN SQUARE FOOTAGE - CLUBHOUSE		
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

GENERAL PLAN SQUARE FOOTAGE - A. A.		
LEVEL	PROGRAM	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 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 ACCOMMODATIONS LEVEL 1	STORAGE	886 SF
		1,624 SF
		1,624 SF

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

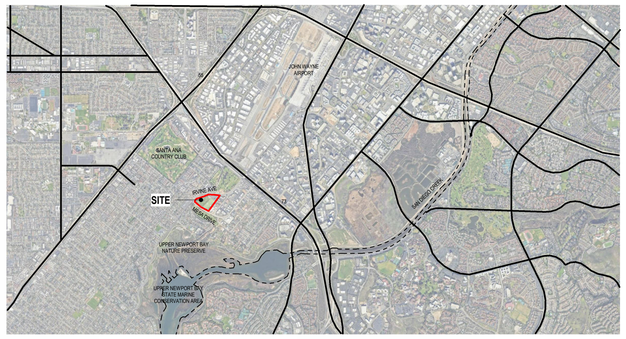
TOTAL GROSS SQUARE FOOTAGE: 79,534 SF

NOTE:

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, GROSS.

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

PROPOSED: 377 Parking Stalls

PARKING SCHEDULE				
LOCATION	TYPE	WIDTH	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

IRVINE AVE
MESA DRIVE
GATE OPEN DURING HOURS OF OPERATION
CONCEPTUAL ENTRANCE SIGNAGE (SIGNS UNDER SEPARATE REVIEWS AND PERMITS)
SELF-CLOSING/SELF-LATCHING GATES
SOLAR TRELLIS ABOVE PARKING (TYPICAL)
NORTH PARKING
+/- 177 STALLS
GATE
6'0" FENCE
POOL FENCE
8'0" FENCE AROUND LAGOON EQUIPMENT AREA
SERVICE AREA
GOLF CART START CHECK-IN POINT
SETBACK MEASURED TO FACE OF FINISH
LONG-TERM BICYCLE PARKING
SOLAR TRELLIS ABOVE PARKING (TYPICAL)
CONCEPTUAL MONUMENT SIGN (SIGNS UNDER SEPARATE REVIEWS AND PERMITS)
BROW SIGNAGE (SIGNS UNDER SEPARATE REVIEWS AND PERMITS)
SOUTH PARKING
+/- 180 PARKING STALLS
SERVICE
DROP OFF
FF 38'0"
AMENITY CLUBHOUSE BUILDING
3-LEVELS
MAX HEIGHT 50'0"
L1 FF 42'0"
LB FF 28'0"
BASIN
SOLAR TRELLIS ABOVE WAVE MAKING EQUIPMENT (TYPICAL)
LED SCREEN
MAX HEIGHT OF MECHANICAL EQUIPMENT: 11'-6"
PROPOSED RAMP
POOL
PENINSULA
FF 37'0"
WAVE MAKING EQUIPMENT (ABOVE GRADE)
RETAINING WALLS (LESS THAN 8'0" IN HEIGHT TO TOP OF RETAINING WALLS)
TRASH ENCLOSURE
25' - 6"
16' - 0"
SHORT-TERM BICYCLE PARKING
GATE OPEN DURING HOURS OF OPERATION
SELF-CLOSING/SELF-LATCHING GATES
CONCEPTUAL ENTRANCE SIGNAGE (SIGNS UNDER SEPARATE REVIEWS AND PERMITS)
LEFT IN, RIGHT IN, RIGHT OUT INTERSECTION
SERVICE GATE
SPA
L1 FF 42'0"
FF 45'0"
ATHLETE ACCOMMODATIONS
L1 FF 48'0"
POOL FENCE
20' - 0"
510' - 0"

SNUG HARBOR
NEWPORT BEACH, CA 92660

SITE DEVELOPMENT REVIEW

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

0' 20' 40' 80' 160'

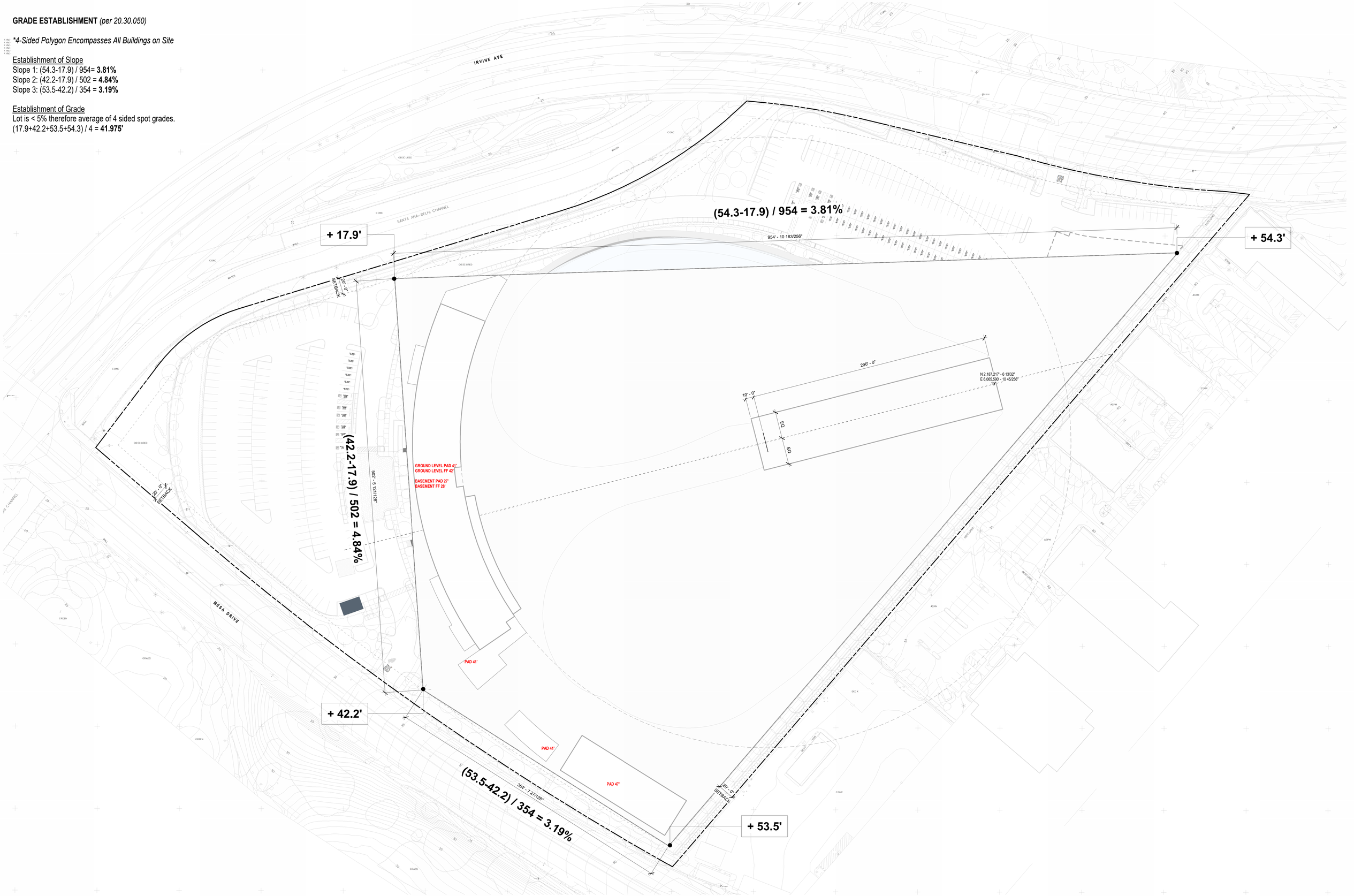
A0.2
SITE PLAN
1" = 40'-0"
12/23/2024

GRADE ESTABLISHMENT *(per 20.30.050)*

**4-Sided Polygon Encompasses All Buildings on Site*

Establishment of Slope
Slope 1: (54.3-17.9) / 954= **3.81%**
Slope 2: (42.2-17.9) / 502 = **4.84%**
Slope 3: (53.5-42.2) / 354 = **3.19%**

Establishment of Grade
Lot is < 5% therefore average of 4 sided spot grades.
(17.9+42.2+53.5+54.3) / 4 = **41.975'**



SNUG HARBOR
NEWPORT BEACH, CA 92660

SITE DEVELOPMENT REVIEW

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PHONE: 949.300.9632

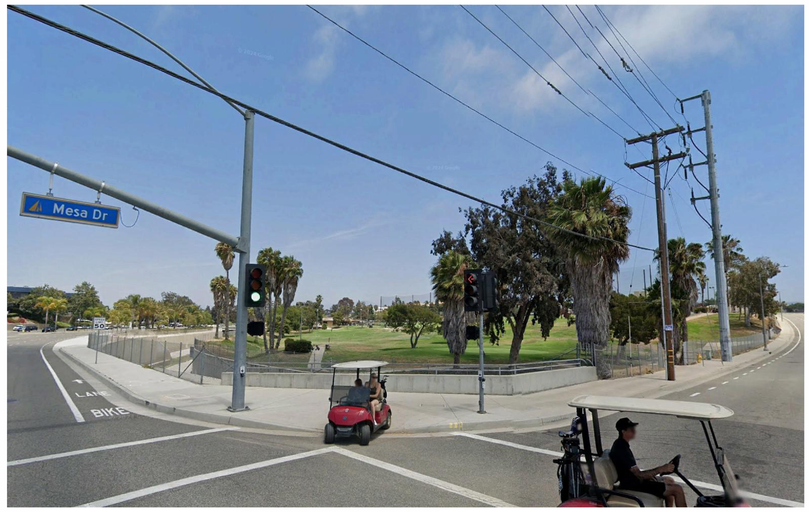
MVE + PARTNERS
1900 MAIN STREET, SUITE 800
IRVINE, CA 92614
PHONE: 949.809.3388

0' 20' 40' 80' 160'

A0.3
GRADE ESTABLISHMENT
1" = 40'-0"
12/23/2024

1

2



3

8

4

7

6

5

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A0.4
SITE CONTEXT IMAGERY

12/23/2024

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A1.0
FLOOR PLAN - SHORELINE
1" = 20'-0"
12/23/2024

GENERAL PLAN SQUARE FOOTAGE - CLUBHOUSE		
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

GENERAL PLAN SQUARE FOOTAGE - A. A.		
LEVEL	PROGRAM	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

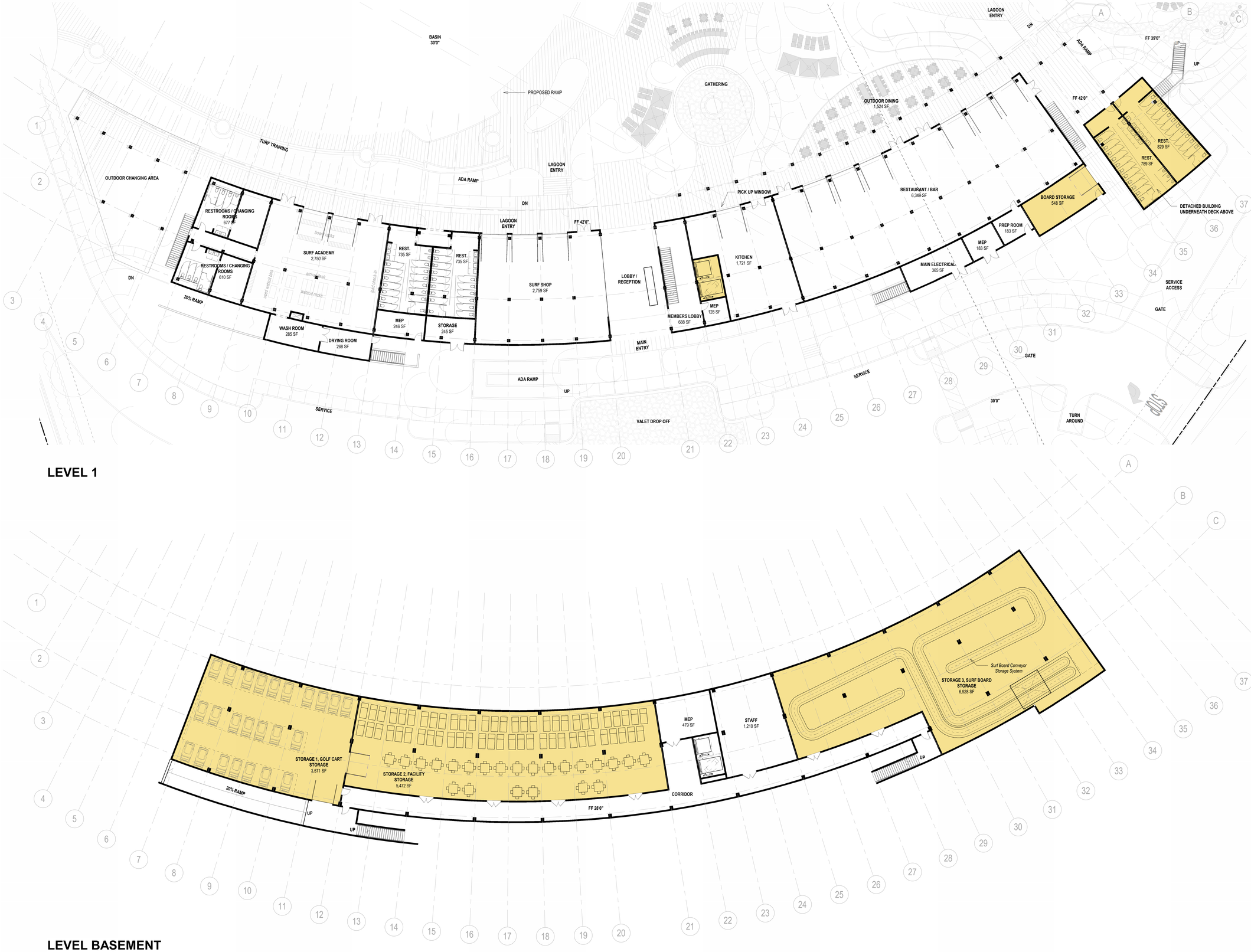
TOTAL GENERAL PLAN SQUARE FOOTAGE: 59,773 SF

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 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 ACCOMMODATIONS LEVEL 1	STORAGE	886 SF
		1,624 SF
		1,624 SF

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

TOTAL GROSS SQUARE FOOTAGE: 79,534 SF



LEVEL 1

LEVEL BASEMENT

** 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.*

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A1.1
FLOOR PLAN - LEVEL B1 + LEVEL 1
1/16" = 1'-0"
12/23/2024

GENERAL PLAN SQUARE FOOTAGE - CLUBHOUSE		
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
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LEVEL 1	REST.	1,470 SF
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LEVEL 1	STORAGE	245 SF
LEVEL 1	SURF ACADEMY	2,750 SF
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LEVEL 2	CORRIDOR	90 SF
LEVEL 2	FITNESS	3,240 SF
LEVEL 2	MEMBER LOCKERS / SPA	2,480 SF
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LEVEL 2	STORAGE / BOH	436 SF
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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

GENERAL PLAN SQUARE FOOTAGE - A. A.		
LEVEL	PROGRAM	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
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ATHLETE ACCOMMODATIONS LEVEL 1	REST.	738 SF
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		1,624 SF
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TOTAL EXCLUDED AREA FROM GENERAL PLAN SQUARE FOOTAGE: 19,761 SF

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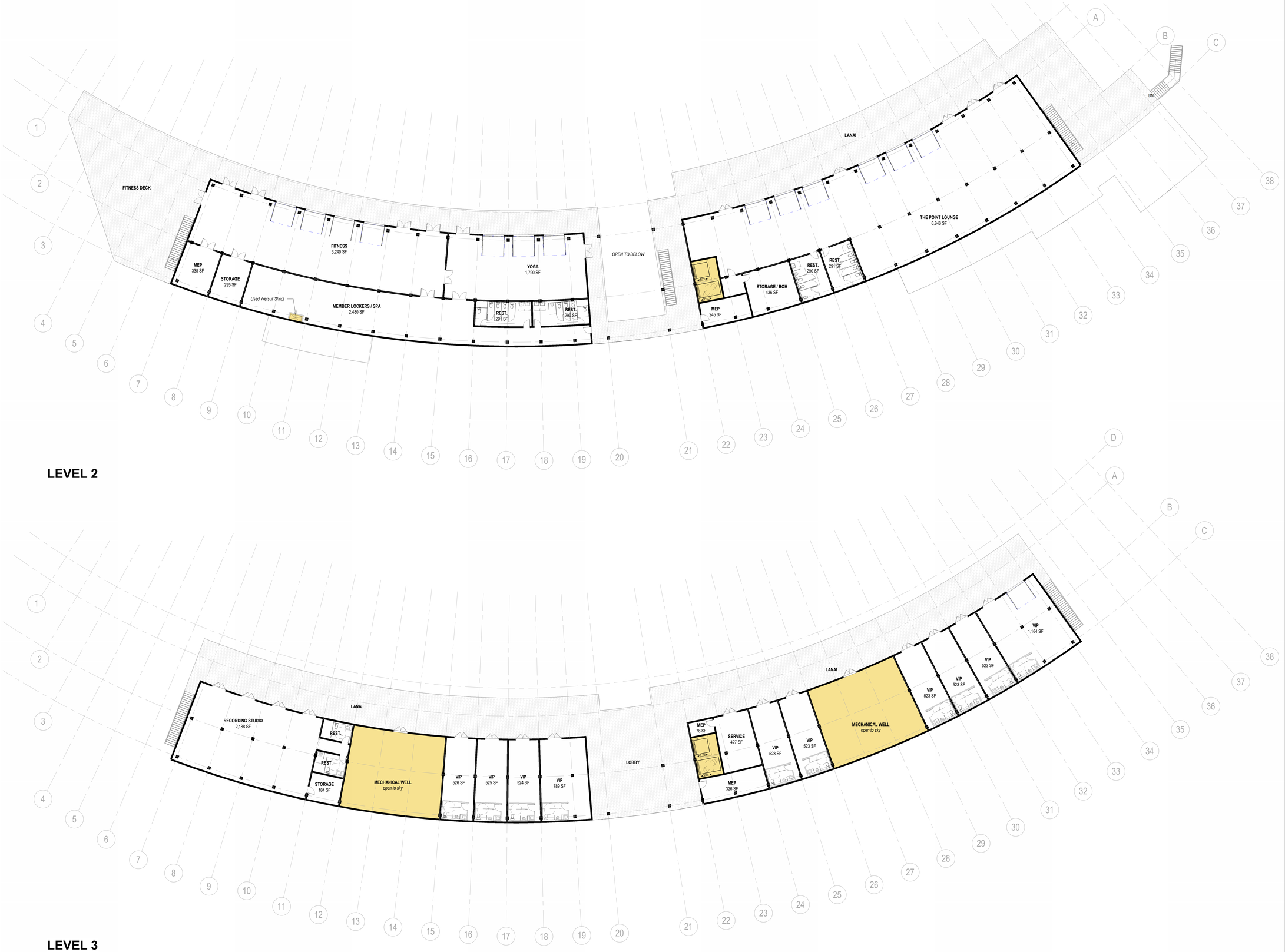

LEVEL 2

LEVEL 3

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A1.2
FLOOR PLAN - LEVEL 2 + 3
1/16" = 1'-0"
12/23/2024

GENERAL PLAN SQUARE FOOTAGE - CLUBHOUSE		
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
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		16,922 SF
LEVEL 3	CORRIDOR	80 SF
LEVEL 3	MEP	404 SF
LEVEL 3	RECORDING STUDIO	2,188 SF
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		9,687 SF
		50,341 SF

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

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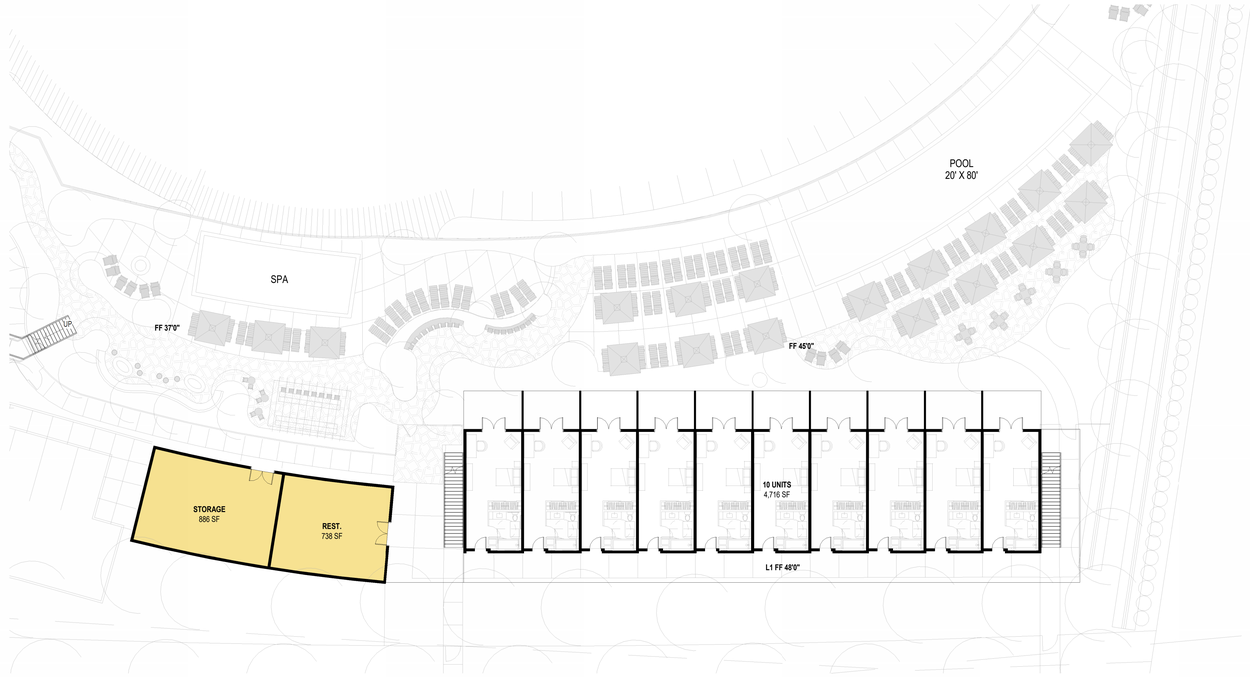
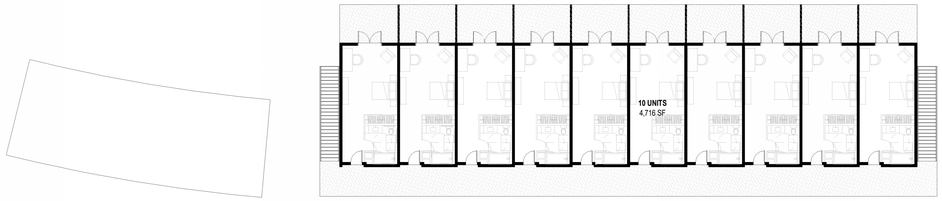


LEVEL 1



LEVEL 2

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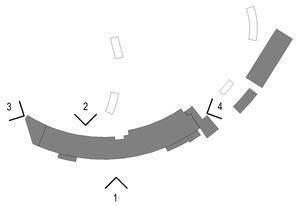
A1.3
FLOOR PLAN - ATHLETE ACCOMMODATIONS LEVEL 1 + 2
1/16" = 1'-0"
12/23/2024



01 CONCRETE

02 WOOD PANEL

03 GLASS STOREFRONT

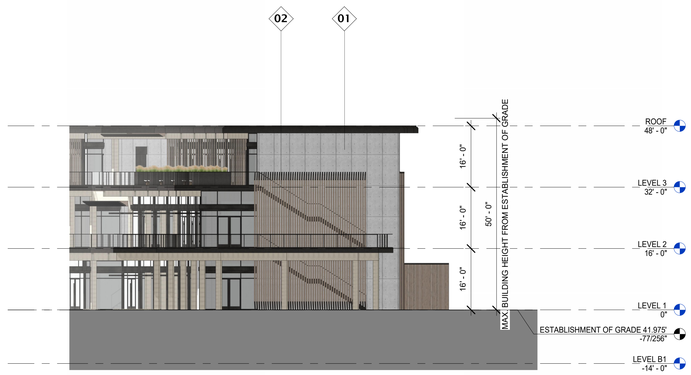
04 GLASS ROLL-UP DOOR

05 METAL RAILING

06 HEAVY TIMBER COLUMN & BEAM

CLUBHOUSE BUILDING ELEVATION - 1

CLUBHOUSE BUILDING ELEVATION - 2



CLUBHOUSE BUILDING ELEVATION - 3

CLUBHOUSE BUILDING ELEVATION - 4

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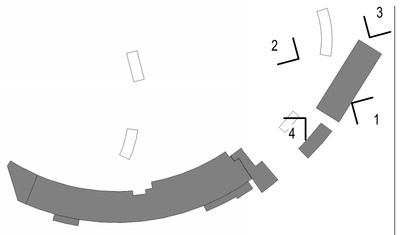
A2.0
BUILDING ELEVATIONS
1/16" = 1'-0"
12/23/2024



01 CONCRETE

02 WOOD PANEL

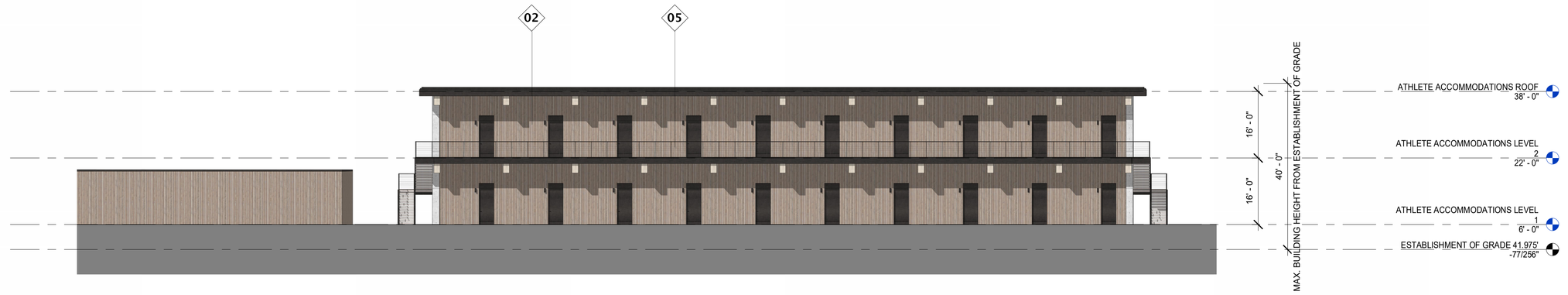
03 GLASS STOREFRONT

04 GLASS ROLL-UP DOOR

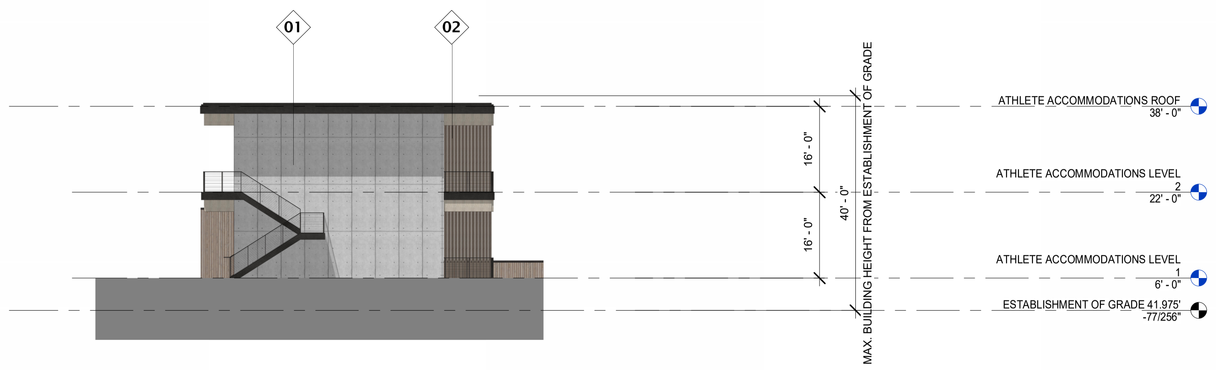
05 METAL RAILING

06 HEAVY TIMBER COLUMN & BEAM

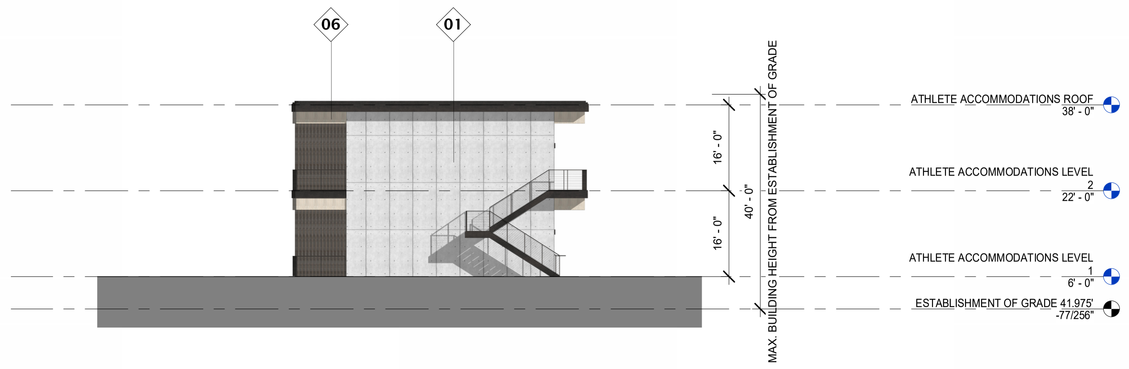
ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 1



ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 2



ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 3



ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 4

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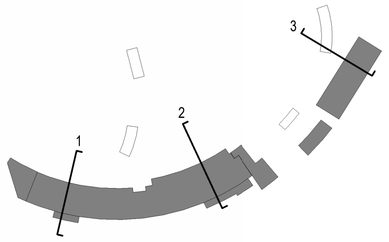
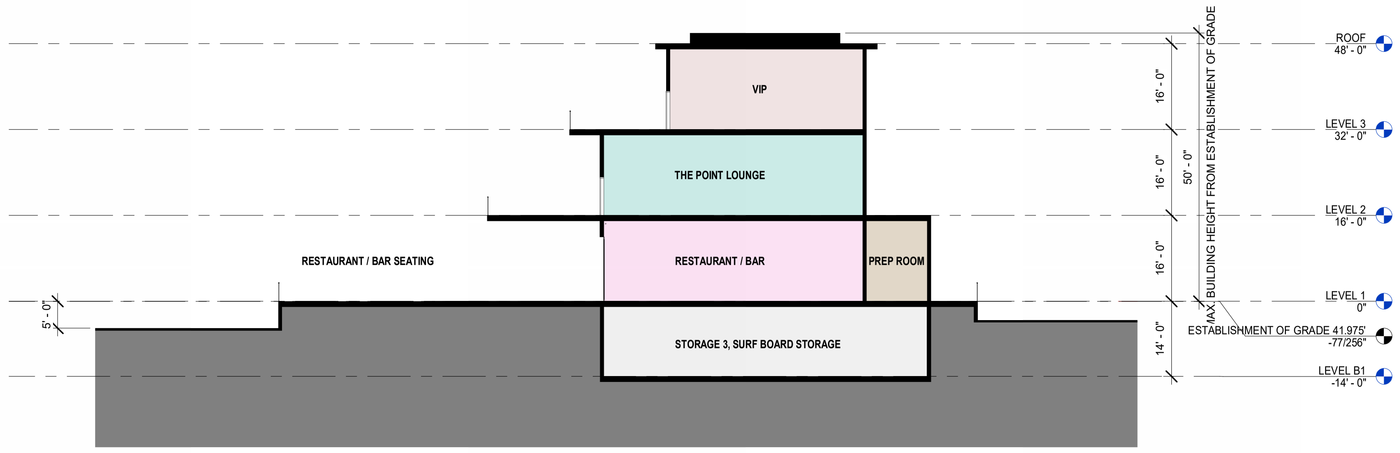
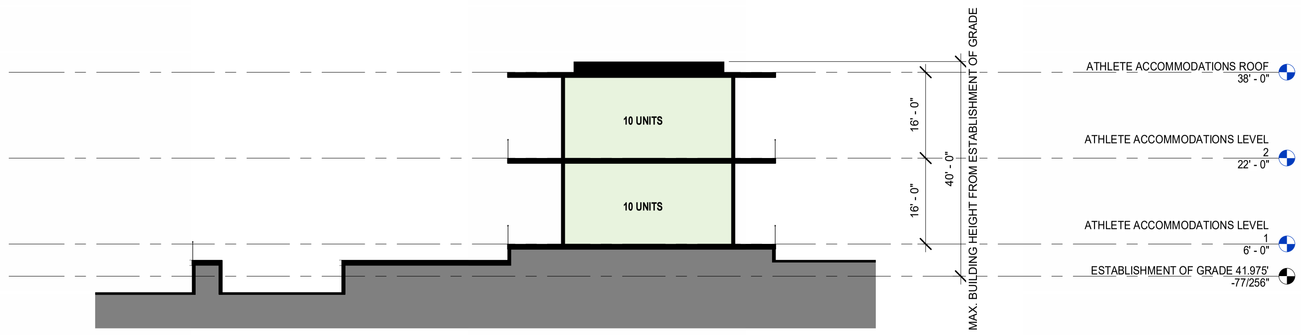




2 CLUBHOUSE BUILDING SECTION - 2

1 CLUBHOUSE BUILDING SECTION - 1



3 ATHLETE ACCOMMODATIONS - 1

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A3.0
BUILDING SECTIONS
1/16" = 1'-0"
12/23/2024

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A4.0
BUILDING PERSPECTIVE

12/23/2024

Sue Williams

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

Categories: 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,

Steve Coyne
Coyne Development Corporation
949-300-9632

From: Diego Setien <diegos@wavegarden.com>
Date: Thursday, October 10, 2024 at 11:52 PM
To: Steve Coyne <steve@coynedev.com>
Cc: adam cleary <adam@surffarm.com>, Pieter Berger <pberger@mve-architects.com>, Aritz Alberdi <aritz@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
Business Development
Office: +34 943 041 018
www.wavegarden.com

Appendix 2

Water Atlas Map

Disclaimer:
Every reasonable effort has been made to assure the accuracy of the data provided, however, The City of Newport Beach and its employees and agents disclaim any and all responsibility from or relating to any results obtained in its use.

7/19/2024

Appendix 3

Fire Hydrant Test Results

CITY OF NEWPORT BEACH
UTILITIES DEPARTMENT

FIRE HYDRANT FLOW TEST

AMOUNT PAID: $475.00 DATE: 07/031/2024
CHECK NO: _____ TIME: 6:00AM
TEST NO: _____ WEATHER: CLEAR

PROJECT:
PROJECT LOCATION: 3100 IRVINE AVE
TEST CONDUCTED FOR: SUE WILLIAMS
TEST PERFORMED BY: O'CAMPO/ AUGER
TEST WITNESSED BY: _____

FIELD OBSERVATIONS AND FLOW DATA

STATIC HYDRANT # : 716 LOCATION: 3100 IRVINE AVE
F/H MANUFACTURER: JONES NUMBER & SIZE OF OUTLETS: 1-2.5" 1-4"
STATIC PRESSURE, (Ps , psi), PRE-FLOW: 117
RESIDUAL PRESSURE, (Pr , psi) FLOWING: 110
FLOW HYDRANT # : 2608 LOCATION: 20321 IRVINE AVE
F/H MANUFACTURER: CLOW NUMBER & SIZE OF OUTLETS: 2-2.5" 1-4"
STATIC PRESSURE, PRE-FLOW (INFO ONLY, NOT FOR TEST CALCS) :
F/H OUTLET SIZE (2.5 or 4.0): 2.5 (d, inches)
FLOW LOSS COEFFICIENT - TUBE C=1.0 / BUTT C=0.9 0.9
PITOT GAUGE READING (p, psi): 74

OBSERVED FLOW: THE OBSERVED FLOW FROM A HYDRANT OUTLET IS CALCULATED FROM THE FOLLOWING EQUATION:

$$Q_s = 29.83(Cd^2)\sqrt[2]{p}$$

WHERE; Q IS THE OBSERVED FLOW IN GPM; d IS THE OUTLET DIAMETER IN INCHES; p IS THE PITOT GAUGE PRESSURE IN PSI; AND C IS THE FLOW LOSS COEFFICIENT (C = 1.0 FOR FLOW TUBES AND C = 0.9 FOR BUTT FLOW READINGS).

OBSERVED FLOW (Qs, gpm): 1443 GPM

DISCHARGE CALCS: THE DISCHARGE FOR A GIVEN FIRE HYDRANT CAN BE DETERMINED FROM THE FOLLOWING EQUATION USING THE INITIAL (STATIC) WATER PRESSURE AND THE RESIDUAL (DYNAMIC) WATER PRESSURE:

$$Q_r = Q_s\left(\frac{P_s - 20}{P_s - P_r}\right)^{0.54}$$

WHERE; Q (STATIC OR RESIDUAL) IS THE FLOW IN GPM; AND P (STATIC OR RESIDUAL) IS THE PRESSURE IN PSI. NOTE: A 10 PSI DROP IS REQUIRED FOR VALID TEST!

CALCULATED FLOW AT 20 psi (Qr, gpm): 5969 GPM

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7/19/2024

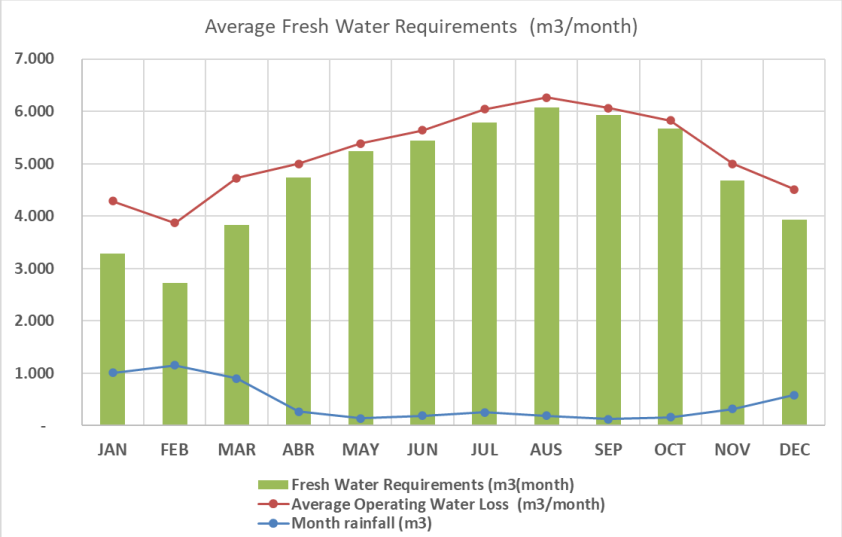
Appendix 4

Design Criteria

Land Use Code	Land Use Category	Land Use		Residential/Non-Residential [1]			Irrigation Demands [2]	
		Agency	Average Density	Interior	Exterior	Total	% Area Irrigated	Irrigation Factor
1100	**Residential**				Gal/DU/Day			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	Estate Density	Lake Forest	0.5	300	350	650	7	3,000
1131	Low Density	Orange	4.0	300	350	650	8	2,500
1132	Low Density	Irvine	3.0	215	190	405	16	2,200
1133	Low Density	Newport Beach	1.0	250	260	510	17	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	High Rise Density - Orange	Orange	35.0	115	10	125	20	2,800
1192	High Rise Density - Irvine	Irvine	40.0	120	5	125	20	2,800
1200	**Commercial**				Gal/KSF/Day			Gal/AC/Day
1210	General Office		20.0	62	10	72	20	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		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/Day			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/Day			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		1.0	0	0	0	80	3,100
2220	High-Irrigation AG Recycled		1.0	0	0	0	80	3,100

(1) The Residential/Non-Residential demands area assumed to be supplied by the Potable Water System, except for those users as described 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 19ºC. 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 19ºC

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)

DashBoard
Track Usage
Compare Water Use
Connect With Utility
Notification
User Guide

Compare Water Use

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

View HCF | View Gallon

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

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

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

Water Meter: 20070357-06

VERY IMPORTANT – PLEASE READ

20493
NEWPORT BEACH GOLF COURSE
ATTN: SEAN XUA
3100 IRVINE AVE.
NEWPORT BEACH, CA 92660

PAID
JUN 22 2020
BY

Owner Well Name: NBGC-NB

A. File statement with Orange County Water District. Keep the duplicate copy.

B. File this Water Production Statement on or before
08/31/2020 If not filed on or before this date a 10% penalty charge will be assessed.

C. Pay replenishment assessment on or before
07/31/2020 Interest accrues at 1% per month or fraction thereof after that date.

D. Return postmarked after
07/31/2020 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.

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	520244		
(2) Water meter reading beginning of period	493989		
(3) Total units: Subtract item (2) from (1)	26255		

ACF (Unit of Measurement) — 0.001 (Multiplier)

IMPORTANT!!!
You must compute the assessments due as shown in Items (6) & (8) below. Be sure to pay the total due as shown in Item (9) no later than
07/31/2020

(4) Total production in item (3) above expressed in Acre-Feet: 26.3 (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): 26.3 (Ac. Ft. to nearest 1/10th) x $243.50 = $ 6,404.05

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 other than irrigation: Subtract item (7) from (6): 26.3 (Ac. Ft. to nearest 1/10th) x $243.50 = $ 6,404.05

(9) TOTAL REPLENISHMENT ASSESSMENTS: Add $ amounts in Items (6) and (8) ..... $ 12,808.10

(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.

(Date) 6/17/2020 (Phone) 9495687846 (Signature) [signature]

(For OCWD Accounting Use Only)
Figures Verified By: _____ Payment Date: _____ Check No. _____ Payment Amount: _____ Remaining Due: _____

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

OCWD Form No. 3-RA Period
REV. 11/21/95

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

Water Meter: 20070357-06

VERY IMPORTANT – PLEASE READ

20493
NEWPORT BEACH GOLF COURSE
ATTN: SEAN XUA
3100 IRVINE AVE.
NEWPORT BEACH, CA 92660

Owner Well Name: NBGC-NB

RECEIVED
DEC 22 2020
ACCOUNTING DEPT

A. File statement with Orange County Water District. Keep the duplicate copy.

B. File this Water Production Statement on or before
02/28/2021 If not filed on or before this date a 10% penalty charge will be assessed.

C. Pay replenishment assessment on or before
01/31/2021 Interest accrues at 1% per month or fraction thereof after that date.

D. Return postmarked after
01/31/2021 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.

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	585260		
(2) Water meter reading beginning of period	520244		
(3) Total units: Subtract item (2) from (1)	65016		

ACF (Unit of Measurement) — 0.001 (Multiplier)

IMPORTANT!!!
You must compute the assessments due as shown in items (6) & (8) below. Be sure to pay the total due as shown in item (9) no later than
01/31/2021

(4) Total production in item (3) above expressed in Acre-Feet: 65.0 (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): 65.0 (Ac. Ft. to nearest 1/10th) x $243.50 = $ 15,827.50

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 other than irrigation: Subtract item (7) from (6): 65.0 (Ac. Ft. to nearest 1/10th) x $243.50 = $ 15,827.50

(9) TOTAL REPLENISHMENT ASSESSMENTS: Add $ amounts in Items (6) and (8) ..... $ 31,655.00

(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.

(Date) 12/22/20 (Phone) 9498528681 (Signature) [signature]

(For OCWD Accounting Use Only) Payment Date: Payment Amount:
Figures Verified By: Check No. Remaining Due:

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

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

WATER PRODUCTION STATEMENT

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

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

Water Meter: 20070357-06

VERY IMPORTANT -- PLEASE READ

20493
NEWPORT BEACH GOLF COURSE
ATTN: SEAN XUA
3100 IRVINE AVE.
NEWPORT BEACH, CA 92660

Owner Well Name: NBGC-NB

A. File statement with Orange County Water District. Keep the duplicate copy.

B. File this Water Production Statement on or before
08/31/2021 If not filed on or before this date a **10%** penalty charge will be assessed.

C. Pay replenishment assessment on or before
07/31/2021 Interest accrues at 1% per month or fraction thereof after that date.

D. Return postmarked after
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.

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	626132		
(2) Water meter reading beginning of period	585260		
(3) Total units: Subtract item (2) from (1)	40872		

ACF (Unit of Measurement) — 0.001 (Multiplier)

IMPORTANT!!!
You must compute the assessments due as shown in Items (6) & (8) below. Be sure to pay the total due as shown in Item (9) no later than
07/31/2021

(4) Total production in item (3) above expressed in Acre-Feet: 40.9 (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): 40.9 (Ac. Ft. to nearest 1/10th) x $243.50 = $ 9,959.15

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 other than irrigation: Subtract item (7) from (6): 40.9 (Ac. Ft. to nearest 1/10th) x $243.50 = $ 9,959.15

(9) TOTAL REPLENISHMENT ASSESSMENTS: Add $ amounts in Items (6) and (8) ..... $ 19,918.30

(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.

(Date) 7/16/21 (Phone) 949-552-8581 (Signature) Xiangdong Hua

(For OCWD Accounting Use Only) Figures Verified By: ____ Payment Date: ____ Check No. ____ Payment Amount: ____ Remaining Due: ____

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

REV. 11/21/

WATER PRODUCTION STATEMENT

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

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
Water Meter: 20070357-06

VERY IMPORTANT -- PLEASE READ

20493
NEWPORT BEACH GOLF COURSE
ATTN: SEAN XUA
3100 IRVINE AVE.
NEWPORT BEACH, CA 92660

Owner Well Name: NBGC-NB

A. File statement with Orange County Water District. Keep the duplicate copy.
B. File this Water Production Statement on or before
02/28/2022 If not filed on or before this date a 10% penalty charge will be assessed.
C. Pay replenishment assessment on or before
01/31/2022 Interest accrues at 1% per month or fraction thereof after that date.
D. Return postmarked after
01/31/2022 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.
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	690180		
2) Water meter reading beginning of period	626132		
3) Total units: Subtract item (2) from (1)	64048		
ACF (Unit of Measurement)	0.001 (Multiplier)		

IMPORTANT!!!
You must compute the assessments due as shown in Items (6) & (8) below. Be sure to pay the total due as shown in Item (9) no later than
01/31/2022

4) Total production in item (3) above expressed in Acre-Feet: 64.0 (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): 64.0 (Ac. Ft. to nearest 1/10th) x $253.50 = $ 16,224.00

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 oricultural crops and for pasture grown for commercial purposes.

8) Amount of water in item (6) used for all purposes other than irrigation: Subtract item (7) from (6): 64.0 (Ac. Ft. to nearest 1/10th) x $253.50 = $ 16,224.00

9) TOTAL REPLENISHMENT ASSESSMENTS: Add $ amounts in Items (6) and (8) ..... $ 32,448.00

(Please be sure to sign the certification statement below)

CERTIFICATION

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 o 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, ncluding 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 echnician'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) 12/22/21 (Phone) 949-526-9567 (Signature) [signature]

For OCWD Accounting Use Only) Payment Date: Payment Amount:
Figures Verified By: Check No. Remaining Due:

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

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

WATER PRODUCTION STATEMENT

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

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

Water Meter: 20070357-06

VERY IMPORTANT – PLEASE READ

20493
NEWPORT BEACH GOLF COURSE
ATTN: SEAN XUA
3100 IRVINE AVE.
NEWPORT BEACH, CA 92660

Owner Well Name: NBGC-NB

Code: 06S/10W-12L01

A. File statement with Orange County Water District. Keep the duplicate copy.

B. File this Water Production Statement on or before
08/31/2022 If not filed on or before this date a 10% penalty charge will be assessed.

C. Pay replenishment assessment on or before
07/31/2022 Interest accrues at 1% per month or fraction thereof after that date.

D. Return postmarked after
07/31/2022 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.

E. If this form is mailed, enclosed check or money order payable to:
ORANGE COUNTY WATER DISTRICT

	Meter ID 1	Meter ID 2	Meter ID 3
	20070357-06		
(1) Water meter reading end of period	734255		
(2) Water meter reading beginning of period	690180		
(3) Total units: Subtract item (2) from (1)	44075		
ACF (Unit of Measurement)	0.001 (Multiplier)		

IMPORTANT!!!
You must compute the assessments due as shown in Items (6) & (8) below. Be sure to pay the total due as shown in Item (9) no later than
07/31/2022

(4) Total production in item (3) above expressed in Acre-Feet: 44.1 (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): 44.1 (Ac. Ft. to nearest 1/10th) x $253.50 = $ 11,179.35

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 other than irrigation: Subtract item (7) from (6): 44.1 (Ac. Ft. to nearest 1/10th) x $253.50 = $ 11,179.35

(9) TOTAL REPLENISHMENT ASSESSMENTS: Add $ amounts in Items (6) and (8) ..... $ 22,358.70

(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.

(Date) 6/22/2022 (Phone) 7148867275 (Signature) Hua Xiaoguo

(For OCWD Accounting Use Only) Payment Date: _____ Payment Amount: _____

Figures Verified By: _____ Check No. _____ Remaining Due: _____

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

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

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

Water Meter: 20070357-06

VERY IMPORTANT -- PLEASE READ

20493
NEWPORT BEACH GOLF COURSE
ATTN: SEAN XUA
3100 IRVINE AVE.
NEWPORT BEACH, CA 92660

Owner Well Name: NBGC-NB

Code: 06S/10W-12L01

A. File statement with Orange County Water District. Keep the duplicate copy.

B. File this Water Production Statement on or before
02/28/2023 If not filed on or before this date a 10% penalty charge will be assessed.

C. Pay replenishment assessment on or before
01/31/2023 Interest accrues at 1% per month or fraction thereof after that date.

D. Return postmarked after
01/31/2023 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.

E. If this form is mailed, enclosed check or money order payable to:
ORANGE COUNTY WATER DISTRICT

	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		
(3) Total units: Subtract item (2) from (1)	67161		
ACF (Unit of Measurement)	0.001 (Multiplier)		

IMPORTANT!!!
You must compute the assessments due as shown in Items (6) & (8) below. Be sure to pay the total due as shown in Item (9) no later than
01/31/2023

(4) Total production in item (3) above expressed in Acre-Feet: 67.2 (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): 67.2 (Ac. Ft. to nearest 1/10th) x $279.00 = $ 18,748.80

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 other than irrigation: Subtract item (7) from (6): 67.2 (Ac. Ft. to nearest 1/10th) x $279.00 = $ 18,748.80

(9) TOTAL REPLENISHMENT ASSESSMENTS: Add $ amounts in Items (6) and (8) ..... $ Total 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.

(Date) 1/24/2023 (Phone) 949-526-9467 (Signature) Sean Xue

(For OCWD Accounting Use Only) Payment Date: ____ Payment Amount: ____
Figures Verified By: ____ Check No. ____ Remaining Due: ____

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

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

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

Water Meter: 20070357-06

VERY IMPORTANT -- PLEASE READ

20493
NEWPORT BEACH GOLF COURSE
ATTN: SEAN XUA
3100 IRVINE AVE.
NEWPORT BEACH, CA 92660

Owner Well Name: NBGC-NB

A. File statement with Orange County Water District. Keep the duplicate copy.

B. File this Water Production Statement on or before

08/31/2023 If not filed on or before this date a 10% penalty charge will be assessed.

C. Pay replenishment assessment on or before

07/31/2023 Interest accrues at 1% per month or fraction thereof after that date.

D. Return postmarked after

07/31/2023 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.

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	836502		
(2) Water meter reading beginning of period	801416		
(3) Total units: Subtract item (2) from (1)	35086		

ACF (Unit of Measurement) — 0.001 (Multiplier)

IMPORTANT!!!

You must compute the assessments due as shown in Items (6) & (8) below. Be sure to pay the total due as shown in Item (9) no later than

07/31/2023

(4) Total production in item (3) above expressed in Acre-Feet: 35.1 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): 35.1 Ac. Ft. to nearest 1/10th x $279.00 = $ 9,792.90

RECEIVED
JUL 10 2023
ACCOUNTING DEPT

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 other than irrigation: Subtract item (7) from (6): 35.1 Ac. Ft. to nearest 1/10th x $279.00 = $ 9,792.90

(9) TOTAL REPLENISHMENT ASSESSMENTS: Add $ amounts in Items (6) and (8) ..... $ 19,585.80

(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.

(Date) 7/7/2023 **(Phone)** 7148867275 **(Signature)** [signature]

(For OCWD Accounting Use Only) Payment Date: ____ Payment Amount: ____

Figures Verified By: ____ Check No. ____ Remaining Due: ____

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

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

RECEIVED
JAN 9 2024
ACCOUNTING DEPT

WATER PRODUCTION STATEMENT

For Period 07/01/2023 To 12/31/2023

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

Water Meter: 20070357-06

VERY IMPORTANT -- PLEASE READ

20493
NEWPORT BEACH GOLF COURSE
ATTN: SEAN XUA
3100 IRVINE AVE.
NEWPORT BEACH, CA 92660

Owner Well Name: NBGC-NB

A. File statement with Orange County Water District. Keep the duplicate copy.

B. File this Water Production Statement on or before

02/29/2024 If not filed on or before this date a 10% penalty charge will be assessed.

C. Pay replenishment assessment on or before

01/31/2024 Interest accrues at 1% per month or fraction thereof after that date.

D. Return postmarked after

01/31/2024 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.

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	905168		
(2) Water meter reading beginning of period	836502		
(3) Total units: Subtract item (2) from (1)	68666		

ACF (Unit of Measurement) — 0.001 (Multiplier)

IMPORTANT!!!
You must compute the assessments due as shown in Items (6) & (8) below. Be sure to pay the total due as shown in Item (9) no later than
01/31/2024

(4) Total production in item (3) above expressed in Acre-Feet: 68.7 (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): 68.7 (Ac. Ft. to nearest 1/10th) x $312.00 = $ 21,434.40

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 other than irrigation: Subtract item (7) from (6): 68.7 (Ac. Ft. to nearest 1/10th) x $312.00 = $ 21,434.40

(9) TOTAL REPLENISHMENT ASSESSMENTS: Add $ amounts in Items (6) and (8) ..... $ 42,868.80

(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.

(Date) 01/05/2024 (Phone) (949)474-4424 (Signature) Hua Xiangdong

(For OCWD Accounting Use Only) Payment Date: Payment Amount:
Figures Verified By: Check No. Remaining Due:

Appendix 6

City of Newport Beach Fire Flow Guidelines

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 of all floor levels:
Line 1 _____sq. ft.

Determine the type of Construction:
Line 2 _____

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 4 _____Hydrants_____ft. 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.

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

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[d]
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 gave.

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 fire-flow 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.

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 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 m^2) 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 fire-flow 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 m^2) 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 m^2) and 10,000 square feet (929 m^2), 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 square feet (3252 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 × 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

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

FIRE-FLOW CALCULATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
0-3,600	No automatic sprinkler system	1,000	1
3,601 and greater	No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2) at the required fire-flow rate
0-3,600	Section 903.3.1.3 of the *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.

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

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.
a. Types of construction are based on the *International Building Code*.
b. Measured at 20 psi residual pressure.

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	IBC—15	International Building Code	B104.2, Tables B105.1(1) and B105.2
ICC	IFC—15	International Fire Code	
ICC	IWUIC—15	International Wildland-Urban Interface Code	B103.3
ICC	IRC—15	International Residential Code	Table B105.1(1)
NFPA	1142—12	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

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

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

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 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.
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

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.

GUIDELINE B.01 - Determination of Required Fire Flow

Snug Harbor

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 all floor levels:
Line 1 _____68,478_____sq. ft. Clubhouse Building

Determine the type of Construction:
Line 2 _____VA_____

Using Table B105.1, determine the fire flow.
(If the building has full sprinkler system, deduct 50%)
Line 3 _____2,500_____ 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 4 ___3___Hydrants___450___ft. 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.

Snug Harbor

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 CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)[b]	FLOW DURATION (hours)
Type IA and IB[a]	Type IIA and IIIA[a]	Type IV and V-A[a]	Type IIB and IIIB[a]	Type V-B[a]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	
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	
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	
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	

2,375 gpm

Snug Harbor

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[d]
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.